CALIFORNIA STATE UNIVERSITY
LONG BEACH

California State University Long Beach Master Plan Update

DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE
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Draft Environmental Impact Report

California State University, Long Beach

Master Plan Update

State Clearinghouse No. 2022040460

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
AB	Assembly Bill
ABM	activity/tour-based model
ACC	Advanced Clean Cars program
AF	acre-feet
AQMP	Air Quality Management Plan
ARMDP	Archaeological Resources Monitoring and Discovery Plan
ASI	Associated Students, Inc.
AY	academic year
Basin	South Coast Air Basin
BAU	business as usual
BERD	Built Environment Resource Directory
BMP	best management practices
BTU	British thermal unit
BUG	backlight, uplight, and glare
CAAP	Climate Action and Adaptation Plan
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code, Title 24, Part 11
California Register	California Register of Historical Resources
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CA MUTCD	California Manual on Uniform Traffic Control Devices
CAPS	Nursing Building Renovation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCRPA	California Cultural Resources Preservation Alliance, Inc.
CD	Construction Development

CDC	Child Development Center
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	methane
CNEL	Community Noise Equivalent Level
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CSU	The California State University
CSULB	California State University, Long Beach
CTR	Criteria and Toxics Emission Reporting
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DD	Design Development
DOORS	Diesel Off-Road Online Reporting System
DPM	Diesel Particulate Matter
DWR	Department of Water Resources
EIR	Environmental impact report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtor
EOP	Emergency Operations Plan (for CSULB)
EPA	US Environmental Protection Agency
EV	electric vehicle
FCAA	Federal Clean Air Act

FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FTA	Federal Transit Administration
FTE	full-time-equivalent
FTES	full-time-equivalent student
FY	fiscal year
GHG	greenhouse gas
GSA	groundwater sustainability agencies
GSF	gross square feet
GSP	groundwater sustainability plans
GWh	gigawatt-hours
GWP	global warming potential
HABS	Historic American Buildings Survey
HC	headcount
HFC	hydrofluorocarbons
HIN	High Injury Network
HRL	Housing and Residential Life
HVAC	heating, ventilation, and air conditioning
Hz	hertz
IEPR	Integrated Energy Policy Report
iPaC	Information for Planning and Consultation
kBtu	kilo British thermal units
km	kilometer
kV	kilovolt
kw	kilowatt
kWh	kilowatt-hours
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation Districts
LBFD	Long Beach Fire Department
LBMC	Long Beach Municipal Code
LBPD	Long Beach Police Department
LBPL	Long Beach Public Library
LBPRM	Long Beach Parks, Recreation and Marine Department

LBUSD	Long Beach Unified School District
LBWD	Long Beach Water Department
Ldn	Day-Night average
LEED	Leadership in Energy and Environmental Design
Leq	Equivalent sound level
LEV	Low-Emission Vehicle
LID	low-impact development
Lmax	Maximum sound level
Lmin	Minimum sound level
LOS	level of service
LST	localized significance thresholds
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant levels
MG	million gallons
mgd	million gallons per day
MND	mitigated negative declaration
MPO	metropolitan planning organization
MS4	multiple separate storm sewer system
$MMTCO_2e$	million metric tons carbon dioxide equivalents
MW	megawatt
MWh	megawatt-hours
MWD	Metropolitan Water District
N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NFIP	National Flood Insurance Program
NHMLA	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NOP	Notice of Preparation

NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O_3	ozone
OCIP	Owner Controlled Insurance Program Safety Manual
OCTA	Orange County Transportation Authority
OEHHA	Office of Environmental Health Hazard Assessment
OPR	California Governor's Office of Planning and Research
OSFM	Office of the State Fire Marshal
PCH	Pacific Coast Highway
PERP	Portable Equipment Registration Program
PDF	Project Design Features
PFC	perfluorocarbons
PM	particulate matter
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
PST	Pacific Standard Time
RFS	Renewable Fuel Standard
RH	relative humidity
RHNA	Regional Housing Needs Allocation
RMS	root mean square
ROG	reactive organic gases
RPS	California Renewables Portfolio Standard
RTP/SCS	2020-2045 Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Boards
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCCIC	South Central Coastal Information Center
SCS	Sustainable Communities Strategy

SENEL	Single Event Noise Exposure Limits
SF	square foot
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	short-lived climate pollutants
SLF	Sacred Lands File
SO_2	sulfur dioxide
SoCalGas	Southern California Gas Company
SORE	Small Off-Road Engine
SO_X	sulfur oxides
SR	State Route
SRA	Source Receptor Area
Standards	Secretary of the Interior's Standards for Rehabilitation
SVP	Society of Vertebrate Paleontology
SWITRS	Statewide Integrated Traffic Records System
SWMP	Storm Water Management Plan
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TDM	transportation demand management
TIMS	Transportation Injury Mapping System
TISM	Transportation Impact Study Manual
TMDL	total maximum daily loads
µg/m3	micrograms per cubic meter
UPD	University Police Department
USACE	US Army Corps of Engineers
USDOT	US Department of Transportation
USEPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USU	University Student Union
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
Water Board	State Water Resources Control Board

WDR	Waste Discharge Requirements
WEAP	Workers Environmental Awareness Program
WL	Watch List
XPI	Extended Phase I
ZEV	zero-emission vehicle

EXECUTIVE SUMMARY

ES.1 Introduction

This Environmental Impact Report (EIR) has been prepared by California State University, Long Beach (CSULB) to inform the community, responsible agencies, trustee agencies, and other interested agencies organizations, of the potential significant environmental effects resulting from implementation of the proposed California State University, Long Beach Master Plan Update (Master Plan Update, proposed project, or project). This EIR has been prepared in compliance with the California Environmental Quality Act (CEQA) statutes (California Public Resources Code Section 21000 et. seq., as amended) and its implementing guidelines (California Code of Regulations, Title 14, Section 15000 et. seq.). The Board of Trustees of the California State University (CSU) is the lead agency under CEQA responsible for certification of this EIR and for consideration of project approval.

This EIR provides both a program-level analysis of the proposed Master Plan Update and a project-level analyses of 30 specific proposed near- and mid-term projects. The project-level analysis has been prepared for those projects that would be implemented within the foreseeable future (within the next 10 years) and for which enough detailed development information is available. As individual projects are proposed for implementation, each would be individually reviewed for consistency with the Master Plan Update EIR and approved for implementation by the CSU Board of Trustees or its designee. Project changes, changes in a project's circumstances, or the potential for new or more severe impacts may require additional environmental review, as necessary. Any additional CEQA environmental review for these future projects would occur after the CSU Board of Trustees approval of the Master Plan Update and certification of this EIR. Identifying the individual development projects in this EIR allows for future streamlining such that implementation of future projects under the proposed Master Plan Update may qualify for preparation of a lower level of CEQA documentation (e.g., a categorical exemption or an addendum to this EIR) or a tiered[1] analysis based on this EIR, as applicable.

This Executive Summary provides a brief overview of the Master Plan Update background; location and setting; the project purpose, need, and objectives; a discussion of the characteristics of the Master Plan Update; alternatives to the Master Plan Update; and issues raised by the public and agencies during the EIR scoping process. Table ES-2 at the end of this section includes a summary of the potential environmental impacts resulting from implementation of the Master Plan Update, the feasible mitigation measures proposed to avoid or substantially reduce those impacts, and the impact level of significance following the implementation of mitigation measures, if required.

ES.2 Master Plan Update Background

Each of the 23 universities within the CSU system is required by the CSU Board of Trustees to prepare and periodically update a physical Master Plan. The Master Plan is intended to guide the physical campus development necessary to support the needs of the current student, faculty, and staff campus populations as well as projected student enrollment and campus population growth, which serves as the basis for determining long-term academic, administrative, student support, student housing, and athletic and recreational program space needs, in accordance with

[1] Pursuant to CEQA Statute Section 21094 and CEQA Guidelines Section 151152.

approved educational policies and objectives.[2]

The current adopted master plan for the CSULB campus is the 2008 Master Plan, which was intended to guide development of the campus through the horizon year 2020. The 2008 Master Plan provided a framework for land use, open space, development, and circulation to accommodate the projected population at the campus and was designed to provide new in-fill facilities in the interior of the campus and replace existing aged, obsolete, and inefficient facilities. Components of the 2008 Master Plan included completion of the Hall of Science, renovation of Peterson Hall 2, additional student housing at the Parkside and Hillside Villages, and additional parking structures. Several of the projects from the 2008 Master Plan have been implemented either as proposed or with modifications and subsequently approved through preparation of addenda to the 2008 Master Plan EIR. Additionally, several projects are currently in progress on the campus that have been cleared through additional environmental documentation. These include the Peterson Hall 1 replacement building, Faculty Office 2 renovation, and Liberal Arts 1 renovation. The 2008 Campus Master Plan Map was most recently revised in July 2020.

ES.3 Project Location and Setting

CSULB is located within the governmental jurisdictional boundary of the City of Long Beach, in southern Los Angeles County, California. The City of Long Beach is bordered by the cities of Paramount and Lakewood to the north; the Pacific Ocean to the south; the cities of Hawaiian Gardens, Cypress, and Los Alamitos, the unincorporated community of Rossmoor, and the city of Seal Beach in Orange County to the east; and the cities of Los Angeles, Carson, and Compton to the west. CSULB consists of two properties, including the CSULB main campus and the Beachside Village property. The majority of the university's uses are located on the CSULB main campus, which comprises 84 buildings housing eight colleges and totaling approximately 5.8 million gross square feet of buildings. The CSULB main campus hosts an assemblage of mid-century modern architecture and site and landscape features, and a collection of outdoor sculptures and public art.

The CSULB main campus comprises approximately 322 acres and is organized into five districts, including the South District, Central District, East District, North District, and West District. The South District hosts most of the University's academic programming, with seven out of the eight colleges located here. The concentrated cluster of academic buildings forms the academic core of the campus and is surrounded by a traditional campus quadrangle. Additionally, a majority of student-serving facilities, including the University Library, University Student Union (USU), Cafeteria, Bookstore, and Shakarian Student Success Building are located within the southern section of the campus.

The Central District has a mix of programmatic functions and contains the main Administration Building-Brotman Hall, College of Business, College of Health and Human Services' Kinesiology Building, and key student services facilities such as Student Health Services and Counseling. The Friendship Walk, a terraced pedestrian corridor, is also located within the Central District.

The East District contains a mix of facilities including the College of Engineering, Student Recreation and Wellness Center, and Campus Facilities and Maintenance. The eastern section also includes the University Police building, parking structures, and surface parking.

[2] The California State University, PolicyStat, Section II: Physical Master Plan and Off-Campus Centers, Section 9007, Development of Physical Master Plan, 2020, available at: https://calstate.policystat.com/policy/8837634/latest#autoid-dgx6z, accessed April 1, 2022.

The North District contains many public-facing programs, including athletics and recreational facilities, such as the George H. Allen Field, Aquatics Center, and the recreation and baseball fields. The landmark 18-story Walter Pyramid is also located in the northern section of campus. North of the athletic fields is a small collection of facilities, including the Carpenter Performing Arts Center and the College of the Arts Music and Dance departments, that are both geographically disconnected from the rest of the campus. Although the facilities on the north are near the academic core facilities to the south, there is a notable elevation difference between the northern and southern sections of campus, ranging from approximately 13 feet above mean sea level in the north to approximately 118 feet above mean sea level in the south.

The West District contains the majority of student residence halls and supporting facilities, such as dining halls and parking facilities. This district also includes a small, concentrated area of College of Health and Human Services academic buildings.

The campus also includes undeveloped land on its northwest border that is part of the National Register-listed Puvunga Indian Villages Sites Archaeological District and is listed in the Native American Heritage Commission's Sacred Lands Inventory, in recognition of its historic, cultural, and religious significance as a Native American burial and ceremonial site. A portion of this area holds significance for several California Native American tribal groups and is actively used for tribal ceremonies and gatherings. A restrictive covenant prohibiting development has been established on a large portion of this site and it is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management.

Located approximately 0.6 miles west of the main campus is Beachside Village. Beachside Village is a CSU-owned student housing complex that comprises two three-story residence halls, a dining hall, and recreational amenities.

ES.4 Project Propose, Need, and Objectives

ES.4.1 Purpose and Need

The CSU Board of Trustees requires every CSU university to have a master plan showing existing and proposed facilities necessary to accommodate a specified enrollment by an estimated planning horizon. The campus master plan reflects the physical requirements of academic programs and auxiliary activities during the planning period, and the CSU Board of Trustees recommend periodic re-evaluation of campus master plans in acknowledgment of master planning as a continuous process.

The purpose of the Master Plan Update is to optimize the existing physical assets of the campus, enhance the efficiency of facilities throughout the campus, and evolve the existing buildings and programs to accommodate future university needs. The Master Plan Update supports and advances the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035. As previously discussed, master plans are intended to implement proposed improvements to accommodate future change and growth in enrollment through buildout of the Master Plan. Master Plans are based on Full-Time-Equivalent Student (FTES) enrollment projections prepared by each university in consultation with the CSU Office of the Chancellor.[3] CSULB has recently established a goal of increasing online enrollment to allow the university to serve a larger student population

[3] The California State University, PolicyStat, Section VII: Five-Year Capital Improvement Program Procedures and Formats for Capital Outlay Submission, Section 9100.1, Basis for Major Capital Outlay and Five-Year Capital Improvement Program Submissions: 3. Full-Time Equivalent Student Enrollment Allocations, available at: https://calstate.policystat.com/policy/6657509/latest/, accessed February 15, 2022.

and expand the programs and services it can offer, making classes more accessible for students and reducing campus trips.

ES.4.2 Project Objectives

The following objectives have been identified to support the underlying purpose of the Master Plan Update to support and advance the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035:

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth to approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

2. Optimize the existing campus space and minimize net new gross square footage.

3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.

4. Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces.

5. Support an expanded residential environment by constructing new or replacement buildings or renovating existing student housing villages to:
    - Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention;
    - Include a more diverse mix of housing typologies for students (pod configurations, suites, and apartments);
    - Provide high quality and affordable options with an equitable mix of offerings for students; and
    - Include common spaces, active outdoor spaces, and space for student services.

6. Strengthen the physical connection between the two housing villages on the CSULB main campus.

7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.

8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.

9. Provide new faculty and staff housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.

10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.

11. Provide defined campus gateways and edges with increased wayfinding and signage to highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.

12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

ES.5 Proposed Project Characteristics

CSULB is one of the largest universities in the State by enrollment and continues to grow, often receiving the most undergraduate applications of any CSU. It also enrolls one of the largest graduate student populations within the CSU system and the state of California. In general, enrollment growth at each campus is driven by a directive from the CSU to absorb a reasonable proportion of the enrollment increases across the CSU system as a whole. Enrollment growth is also affected by university-specific factors such as physical capacity, availability of and interest in specific academic programs, and the individual decisions of potential students. The student enrollment in the horizon year 2035 is anticipated to be approximately 36,000 FTES, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

In addition to the student population, the Master Plan Update projects the associated faculty and staff, which includes Full-Time-Equivalent (FTE) employees and auxiliary employees, that would be necessary to support students at CSULB. CSULB determines faculty and staff needs by evaluating the historical ratios of faculty to students as well as between staffing and students. The total campus population comprises students, faculty, staff, and faculty/staff household members. In horizon year 2035, the total on-campus population is anticipated to be 38,165, which includes FTES, FTE employees, auxiliary employees, and faculty/staff household members. The Master Plan Update is a comprehensive long-range planning document that will guide physical development at CSULB to accommodate the total future campus population through the horizon year 2035.

The Master Plan Update addresses CSULB's current and future needs, focusing less on physical growth and more on optimizing the existing physical assets of the campus. The Master Plan Update establishes priority development projects to be implemented over the next decade and beyond. The primary strategies for implementing the new master plan include renovation of existing buildings (renovation), demolition and replacement of existing buildings in the same physical location (replacement), construction of new buildings (new construction), and leaving buildings in their existing location and configuration (buildings to remain). The Master Plan Update also identifies improvements to landscape and open space, sustainability and resiliency, and mobility and parking.

As discussed, the Master Plan Update organizes the CSULB main campus into five districts (South, Central, East, North, and West) characterized by existing geography and development as well as desired connectivity, placemaking opportunities, and proposed programming. Individual development projects have been identified for implementation across the five districts and the Beachside Village property and are grouped into five distinct categories according to the type of building or function and use: Academic and Administrative Facilities, Housing, Student and Campus Support Facilities, Athletic Facilities, and Mobility, Circulation, and Open Space. Projects that are expected to be developed in the next 10 years and are referred to as near-term (2-5 years) and mid-term (6-10 years) projects. The individual projects were prioritized for possible

implementation based on a variety of factors, such as funding, building age, consolidation of programming, etc. Of the individual development projects, it is estimated that 13 would be near-term and 17 would be mid-term. The proposed near- and mid-term development projects are listed in Table ES-1.

The Master Plan Update also includes a number of projects that are expected to be developed in the long-term (11 years or more). While these projects are identified in the Master Plan Update, they are not discussed or analyzed in further detail in this Draft EIR, as it would be speculative to estimate project-level details for those projects at this time.

Table ES-1: Proposed Near-Term and Mid-Term Projects Analyzed in this EIR

Near-Term Projects	Mid-Term Projects
Engineering Replacement Building	College of the Arts Replacement Building
New Parkside Housing Village	New 7th St. Community Outreach Facility
Faculty and Staff Housing	Jack Rose Track/Commencement Facilities
USU Renovation/Addition and Cafeteria Replacement	Walter Pyramid Renovation
Hillside College Renovations/Addition	Pedestrian/Bike Lane Improvements
Beachside Housing	Fine Arts 4 Renovation
Aquatics Center and Pool Renovation	Fine Arts 1/2 Renovation
Lecture Hall 150-151 Renovation	Liberal Arts 5 Renovation
Student Health Services Addition	Theatre Arts Renovation
Corporation Yard Renovations	University Theatre Renovation
Microbiology Student Success Center Renovation	Baseball Field Conversion to Multi-Use Field
Friendship Walk Stairs Revitalization	Central Plant Decarbonization
Improved Campus Entrance and Gateway	University Music Center Renovation Addition
	Nursing Building Renovation (CAPS)
	Engineering Tech Renovation
	Relocated Archery Field
	Redefining the Campus Quad

ES.6 Project Alternatives

In accordance with the CEQA Guidelines, alternatives to the proposed Master Plan Update have been considered in this EIR to explore potential means to mitigate or avoid the significant environmental impacts associated with implementation of the Master Plan Update while still achieving the primary objectives of the project. Pursuant to Section 15126.6(a) of the CEQA Guidelines, an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. An EIR should present a reasonable range of feasible alternatives that will support informed decision making and public participation regarding the potential environmental consequences of a project and possible means to address those consequences. The alternatives analysis must also include a comparative evaluation of the No Project Alternative in accordance with Section 15126.6(e) of the CEQA Guidelines to determine the consequences of not implementing the project. Through the identification, evaluation, and comparison of alternatives, the relative advantages and disadvantages of each alternative compared with the proposed Master Plan Update can be determined. Six alternatives were considered but eliminated from further consideration in this EIR, as discussed in Chapter 5, Alternatives. The following three alternatives are reviewed in detail in Chapter 5.

- **No Project Alternative:** This alternative considers limited continued buildout of the campus in accordance with the approved 2008 Master Plan. The renovation of existing facilities and the optimization of the physical assets on campus proposed under the Master Plan Update would not occur under this alternative. Instead, CSULB would continue to operate in accordance with the 2008 Master Plan, as amended most recently in July 2020, which includes proposed improvements to campus facilities to accommodate up to 31,000 FTES.

  The No Project Alternative would avoid one potentially significant impact associated with the Master Plan Update; however, it would also result in nine increased impacts, including a significant unavoidable impact associated with construction vibration. The No Project Alternative would achieve one of the 12 project objectives; would partially achieve two of the project objectives to a lesser extent than the Master Plan Update; and would not achieve nine of the project objectives. Therefore, the No Project Alternative would not fully achieve or attain most of the project objectives.

- **Faculty and Staff Housing Project Design Alternative:** The Faculty and Staff Housing Project Design Alternative would construct and operate the Faculty and Staff Housing project at the same location as proposed under the Master Plan Update. However, instead of demolishing the existing Design building and relocating its programming elsewhere on the CSULB main campus, that programming would be incorporated into the design of the project, resulting in a larger building with one additional story. Development of this alternative would eliminate the need to renovate or construct a new space for the existing Department of Design programming elsewhere on the CSULB main campus. This alternative was selected for its potential to reduce or avoid the significant but mitigable impacts identified for the Master Plan Update related to aesthetics; biological resources; cultural resources; geology, soils, and paleontological resources; noise; and tribal cultural resources.

  The Faculty and Staff Housing Project Design Alternative would not avoid or substantially lessen any of the potentially significant impacts associated with the project proposed under the Master Plan Update, although all potentially significant impacts would be mitigated to levels less than significant. The Faculty and Staff Housing Project Design Alternative would achieve all 12 of the project objectives.

- **Reduced Development Footprint Alternative:** This alternative would eliminate proposed near-term development projects that partially overlap significant or potentially significant archaeological resources. The alternative was chosen for its potential to avoid significant but mitigable impacts on archaeological resources resulting from the Master Plan Update.

  The Reduced Development Footprint Alternative would avoid the potentially significant impacts to archaeological resources and tribal cultural resources associated with three development projects; however, it would also result in increased impacts in three resource areas. The Reduced Development Footprint Alternative would achieve five of the 12 project objectives; would partially achieve five of the project objectives to a lesser extent than the Master Plan Update; and would not achieve two of the project objectives. Therefore, the Reduced Development Footprint Alternative would not fully achieve or attain a majority of the project objectives.

The reduction in development under the Reduced Development Footprint Alternative would result in reduced construction impacts as compared to the Master Plan Update and would avoid potential impacts to archaeological resources and tribal cultural resources associated with three of the proposed near- and mid-term development projects under the Master Plan Update. This alternative would result in the least impacts of the three alternatives and is considered the environmentally superior alternative. As discussed above, the Reduced Development Footprint Alternative would not fully achieve or attain a majority of the project objectives.

ES.7 Issues Raised by the Public and Agencies

A Notice of Preparation (NOP) was published for this Draft EIR on April 21, 2022, to notify responsible and trustee agencies, stakeholders, and other interested parties that CSULB planned to prepare a Draft EIR and to request input regarding the scope and content of the environmental analysis and information to be included in the Draft EIR. The NOP and Initial Study were circulated for a 30-day comment period from April 21, 2022, to May 20, 2022. The NOP was sent to approximately 80 agencies, stakeholders, and other interested parties and over 2,600 residences and businesses.

Two public scoping meetings were held to obtain input on the scope of the contents of the EIR. The meetings consisted of one virtual meeting hosted on the Zoom platform on April 28, 2022, and one in-person meeting held at The Pointe, located in the Walter Pyramid at CSULB, on May 4, 2022. Nine individuals attended the virtual meeting and ten individuals attended the in-person meeting. A total of 17 individual written comments were received from public agencies and members of the general public during the 30-day comment period. The NOP, Initial Study, and all comments received on the NOP and Initial Study are provided in Appendix A. The following list summarizes the public comments and questions that were received during the comment period related to environmental issues:

- **Aesthetics:** The EIR should assess potential impacts to scenic vistas, scenic resources, scenic quality, and light and glare, particularly resulting from proposed development at the perimeter of the main campus near adjacent residential properties (refer to Section 3.1, Aesthetics).
- **Air Quality:** The EIR should identify potential air quality impacts that could occur from all phases of the proposed project. California Emissions Estimator Model (CalEEMod) should be used to estimate emissions; criteria pollutant emissions should be quantified and compared to the South Coast Air Quality Management District's regional and localized significance thresholds (refer to Section 3.2, Air Quality).
- **Biological Resources:** The EIR should assess potential impacts to Bouton Creek, nesting birds, and bats. Mitigation measures should be identified for potentially significant impacts to biological resources. The EIR should include a thorough discussion of potential direct, indirect, and cumulative impacts to biological resources (refer to Section 3.3, Biological Resources).
- **Greenhouse Gas Emissions:** The EIR should identify potential greenhouse gas emissions impacts that could occur from all phases of the proposed project. CalEEMod should be used to estimate emissions (refer to Section 3.6, Greenhouse Gas Emissions).
- **Noise:** The EIR should assess potential increases in noise related to proposed development under the Master Plan Update (refer to Section 3.8, Noise).

- **Public Services and Recreation:** The EIR should assess potential impacts on the provision of adequate recreational facilities, particularly playgrounds for children, in proportion to the community's needs (refer to Section 3.10, Public Services and Recreation).
- **Transportation:** The EIR should assess the potential for the Master Plan Update to increase vehicle miles traveled, conflict with adopted plans or policies, potential to increase hazards, or impact emergency access. A review of safety conditions at intersections near the main campus should be considered, and the use of transportation demand management measures is encouraged to mitigate potential project impacts should those impacts be found significant. The EIR should assess potential impacts to access for campus users and local residents, conditions for people who walk/bike/scooter on campus, and parking conditions on campus and in adjacent neighborhoods (refer to Section 3.11, Transportation).
- **Tribal Cultural Resources:** Native American tribal consultation should be conducted in accordance with Assembly Bill 52 and Senate Bill 18. The EIR should address the existence and significance of tribal cultural resources, and avoidance, preservation, and/or mitigation of project-related impacts to tribal cultural resources should be identified (refer to Section 3.12, Tribal Cultural Resources).
- **Utilities and Energy:** The EIR should assess potential impacts on wastewater service capacity and facilities of the Los Angeles County Sanitation Districts and the local sewer system (refer to Section 3.13, Utilities and Energy).

ES.8 Summary of Environmental Impacts

An analysis of the potential environmental impacts associated with implementation of the proposed Master Plan Update has been conducted and is contained in this EIR. Thirteen environmental issue areas are analyzed in detail in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures, of this EIR. Table ES-2 provides a summary of the potential environmental impacts detailed in Chapter 3 of this EIR that would result during construction and operation of the proposed Master Plan Update, mitigation measures that would lessen potentially significant environmental impacts, and the level of significance of the environmental impacts that would remain after implementation of mitigation, if necessary. The EIR identifies potentially significant impacts requiring mitigation measures for aesthetics; biological resources; cultural resources; geology, soils, and paleontological resources; noise; and tribal cultural resources. The EIR identifies less than significant impacts for air quality, greenhouse gas emissions, hydrology and water quality, population and housing, public services and recreation, transportation, and utilities and energy. No significant and unavoidable impacts have been identified for implementation of the Master Plan Update.

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
AESTHETICS			
AES-1 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Potentially significant	**AES-A Nighttime Construction Lighting:** If the use of nighttime lighting is necessary during construction, all lighting shall be shielded and focused on the construction site. **AES-B New Stadium Lighting:** CSULB shall prepare and implement a lighting plan for proposed new permanent flood lighting at Jack Rose Track/Commencement Facilities. The lighting plan shall be prepared by a qualified engineer who is an active member of the Illuminating Engineering Society of North America. The lighting plan shall address all aspects of the lighting and identify feasible strategies to be implemented to minimize light trespass based on the lighting design, such as use of shielding, mounting lighting at specific angles to direct light toward the field, light color, and limiting lumens to the lowest levels necessary for operation.	Less than significant
AIR QUALITY			
AQ-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant	No mitigation measures are required.	Less than significant
AQ-2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Less than significant	No mitigation measures are required.	Less than significant
AQ-3 Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
BIOLOGICAL RESOURCES			
BIO-1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Potentially significant	**BIO-A** Construction activities shall adhere to all applicable BMPs and recommendations outlined in the CSULB Nesting Bird Guidance Document (refer to Appendix D of this EIR), which outlines measures to avoid take of bird species protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) during construction activities and maintenance activities conducted by CSULB where tree removal or trimming is proposed. The guidance document provides information on the bird species that may nest in the area, protection under the MBTA and CFGC, and stipulates the following measures to avoiding impacts to nesting birds during the nesting season, generally January 15 through September 15 (as early as January 1 for some raptors): 1. A pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 days (72 hours) prior to the start of construction activities and/or tree removal to determine whether active nests are present within or directly adjacent to the construction zone. a) Following completion of the survey, a brief memo report shall be prepared to document the location of all nests found (if any), their status (i.e., eggs or hatchlings present), existing biological conditions of the project area, and the bird species detected during the survey. If an active nest is found, recommendations to avoid and minimize impacts to the nest, such as those presented below, shall be included as appropriate.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		b) Surveys shall be conducted by a qualified biologist, defined as a biologist who has at least one year of professional experience conducting nest surveys under a supervising biologist or has formal education in the identification of regional bird species, and is familiar with the life history of regional bird species. 2. A minimum 150-foot no-work buffer shall be established around any active passerine bird nest and a minimum 300-foot no-work buffer shall be established around any active raptor nest. The qualified biologist shall monitor the nest on a weekly basis, and project activities within 150 feet of an active nest of any passerine bird or within 300 feet of an active nest of any raptor shall be postponed until the biologist determines that the nest is no longer active. However, these no-disturbance buffers may be adjusted (including increases or reductions to the buffer) by the qualified biologist on a case-by-case basis taking into consideration the location, type, duration and timing, and severity of work, distance of nest from project activities, surrounding vegetation and line-of-sight between the nest and work areas, and the species' site-specific level of habituation to the disturbance. If the qualified biologist determines nesting activities may fail as a result of project activities, the biologist shall immediately inform the construction manager and all project activities shall cease within the recommended no-disturbance buffer until the biologist determines the adults and young are no longer reliant on the nest site. 3. Avoidance buffers around active nests shall be delineated on-site with bright flagging for easy identification by project staff. The on-site	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		construction supervisor and operator staff shall be notified of the nest and the buffer limits to ensure it is maintained. 4. When recommended nest avoidance buffers are not feasible and construction must occur near or within an established buffer, nests shall receive initial full-time monitoring to ensure that construction activities are not disturbing any nesting activities or active nests. If the biologist determines that the buffer is appropriate, work can continue with regular spot-checks to document the progress of the nest until it is determined that young are no longer dependent on the nest, the nest has been predated, or is deemed no longer active. With the exception of some raptor nests, inactive nests may be dismantled or otherwise destroyed to discourage future nesting in the same location. **BIO-B** A pre-construction survey shall be conducted by a qualified bat biologist who has experience with bats/bat surveys to identify trees and/or structures that could provide day and/or night-roosting or maternity roosting sites for bats within 14 days of the start of construction for projects that include tree removal or building demolition. 1. If day-time roosting bats or sign of such bats are detected: a qualified bat biologist should be present to monitor any tree removal and/or building demolition activities and develop project-specific measures to minimize impacts to day-roosting bats. This should include the designation of no-disturbance buffers around day-roosting bats based upon the particular bat species found and/or the phased removal of buildings and trees to allow day-roosting bats to relocate on their own volition.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		2. If an active maternity roost is identified, no work activities should occur within 100 feet of or directly under or adjacent to the maternity roost during the breeding season when young are present but are not yet ready to fly (generally April through August).	
BIO-2 Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Potentially significant	**BIO-C** For projects occurring within or adjacent to Bouton Creek, such as the Pedestrian/Bike Lane Improvements project, CSULB shall engage a qualified regulatory specialist to review and evaluate project plans of proposed road improvements over and adjacent to Bouton Creek. If the plans have the potential to result in impacts to the channel requiring permitting pursuant to the Clean Water Act, Porter-Cologne, and/or CFGC, CSULB in coordination with the City of Long Beach shall consult with the U.S. Army Corps of Engineers, Los Angeles Regional Water Quality Control Board, and California Department of Fish and Wildlife regarding applicable permits for the improvements. Depending on the extent of impacts that may occur to the Bouton Creek channel, consultation with the National Marine Fisheries Service regarding potential impacts to downstream coastal resources may be required and should occur simultaneously in coordination with other regulatory agencies. Any required permit conditions shall be implemented to avoid or minimize impacts to Bouton Creek.	Less than significant
BIO-3 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	No impact	No mitigation measures are required.	No impact

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
CULTURAL RESOURCES			
CUL-1 Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	Potentially significant	**HR-A** For all instances in which a project involves an individually eligible resource, the University shall engage the services of a qualified architectural historian meeting the Secretary of the Interior's Professional Qualification Standards to conduct an assessment of whether the proposed treatment of the historical resource complies with the Secretary of the Interior's Standards for Rehabilitation ("the Standards"). If the proposed project is found to not be in compliance with the Standards, then the architectural historian shall provide recommendations for how to modify the project design so as to bring it into compliance. The professional shall prepare a memorandum or equivalent level of documentation conveying the findings of the assessment. **HR-B** To ensure that historic buildings and other contributing features within the Upper Campus Historic District are appropriately renovated and maintained, and that the impact of new construction within the district is mitigated to a less-than-significant level, the University shall develop an Adaptive Mitigation Management Program for the historic district. This Adaptive Mitigation Management Program shall be produced following adoption of the Master Plan Update. This will act as a rehabilitation and maintenance plan for the district, and will ensure that projects undertaken within the district are compatible with its historic character. The plan shall include: • Historic overview and context of the district • Identification of contributing buildings and their character-defining features • In-depth assessment of the designed landscape within the district, including identification of	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		character-defining site features, hardscape, and softscape • Definitions of applicable historic preservation terms • Guidelines for building rehabilitation and maintenance • Guidelines for compatible new construction • Guidelines for landscape preservation and maintenance **HR-C** The University shall have Historic American Buildings Survey (HABS) Level II documentation or the equivalent completed for the historical resource and its setting. This documentation shall include drawings, photographs, and a historical narrative. Documentation shall be undertaken prior to the commencement of construction. To ensure public access, the University shall submit copies of the documentation to the Special Collections and University Archives at the CSULB Library, and other interested parties to be identified. • Drawings: Existing historic drawings of the historical resource, if available, shall be photographed with large-format negatives or photographically reproduced on Mylar. In the absence of existing drawings, full-measured existing conditions drawings of the building's floorplans and exterior elevations should be prepared. • Photographs: Photo-documentation of the historical resource shall be prepared to HABS standards (or the equivalent) for archival photography. HABS standards require large-format black-and-white photography, with the original negatives having a minimum size of 4"x5". Digital photography, roll film, film packs, and electronic manipulation of images are not acceptable. All film prints, a	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		minimum of 4”x5”, must be hand-processed according to the manufacturer’s specifications and printed on fiber base single weight paper and dried to a full gloss finish. A minimum of twelve photographs must be taken. Photographs must be identified and labeled using HABS standards. • Historical Narrative: A professional meeting the Secretary of the Interior’s Professional Qualification Standards in Architectural History or History shall compile historical background information relevant to the historical resource and prepare a narrative. **HR-D** The University shall prepare and implement an interpretative program for the historical resource. The interpretive program shall focus on the resource’s architectural and historical significance and shall incorporate all of the following materials/media. • On-site display of historic documentation, which may include historic photographs, historic architectural plans and drawings, and other applicable materials that convey the significance of the historical resource. These materials shall be displayed in a visible and accessible location. • Online display of historic documentation, including historic photographs, historic architectural plans and drawings, and other applicable materials that convey the significance of the historical resource. These materials shall be published on the CSULB web site and available to the public. • Incorporation of commemorative materials and historical information into on-campus orientation and tours for educational purposes.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		HR-E Under the guidance of a historic architect or architectural historian meeting the Secretary of the Interior's Professional Qualification Standards, and through careful methods of deconstruction to avoid damage and loss, the University shall salvage character-defining features and materials from a historical resource for educational and interpretive purposes on campus, or for reuse in new construction on campus. **HR-F** For all instances in which a project involves an individually eligible resource, the University shall engage the services of a qualified architectural historian or historic architect meeting the Secretary of the Interior's Professional Qualification Standards to review milestone drawing sets and generally be available to the design team during design and construction. The architectural historian/historic architect shall review Design Development (DD) and Construction Documentation (CD) drawing sets at 50% and 100% completion and provide a brief memo regarding ongoing project compliance with the Standards. Project review during construction shall occur once a month and reporting in memo format. Memos shall be submitted to CSULB Design and Construction Services.	
CUL-2 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	Potentially significant	**For projects on-campus with ground-disturbing activities, the following mitigation measures would apply (AR-A, AR-B, AR-C, and AR-D).** **AR-A Initial Project Review:** This mitigation measure shall apply to projects on-campus with ground-disturbing activities. Prior to the commencement of ground-disturbing activities, CSULB shall consult with a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		44738). The qualified archaeologist shall determine to what degree ground-disturbing activities have the potential to impact archaeological resources through the review of plans against the data and the analysis in the Archaeological Resources Technical Report prepared for the CSULB Master Plan Update Environmental Impact Report, any subsequent archaeological studies, location-specific archaeological studies covering the project area, designated equipment and materials staging/stockpile areas, available geotechnical studies or boring logs, and the mapped locations of archaeological sites. If the qualified archaeologist determines the project has the potential to impact unknown and/or ineligible archaeological resources: • At their discretion, the qualified archaeologist may require Mitigation Measure AR-C (WEAP) or a combination of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring). • If the qualified archaeologist determines the project has the potential to impact known listed/potentially eligible archaeological resource: • The qualified archaeologist shall determine whether an Extended Phase I (XPI) should be implemented in order to identify the presence or absence of a known site within project boundaries in accordance with Mitigation Measure AR-E. • Avoidance and preservation-in-place are the preferred treatments for significant archaeological resources. If the project has the potential to impact known archaeological resources, then the qualified archaeologist shall work with the Engineer of Record to identify means of avoidance wherever avoidance is feasible. If avoidance is not feasible, or if the project has the potential to impact unknown	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		archaeological resources, then an archaeological resources Treatment Plan shall be prepared in accordance with Mitigation Measure AR-I. • The qualified archaeologist retains the discretion to reduce the 25-foot radius on a case-by-case basis based on their expert judgment. **AR-B Designated Staging and Stockpiling Areas:** This mitigation measure shall apply to projects on-campus with ground-disturbing activities. Prior to the commencement of projects involving ground-disturbing activities, CSULB shall clearly identify a construction staging and soils stockpiling area for the project. CSULB shall prohibit the placement of earthwork spoils, construction materials, and equipment anywhere other than the specified construction staging and soils stockpile area(s) for that project unless on paved surfaces. No staging areas or stockpiles shall be established on unpaved surfaces within a 25 foot radius of the boundaries of known potentially eligible archaeological sites without compliance with Mitigation Measure AR-A (Initial Project Review) and potential additional mitigation. **AR-C Worker Environmental Awareness Program for Archaeological Resources:** Due to the potential to encounter unanticipated resources, prior to the beginning of ground-disturbing activities by the construction crew, the construction crew associated with ground-disturbing activities shall be informed of the archaeological resource's value involved and of the regulatory protections afforded those resources. The crew shall also be informed of procedures relating to the discovery of unanticipated archaeological resources. The crew shall be cautioned not to collect	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		artifacts, and directed to inform a construction supervisor and the onsite archaeological monitor in the event that archaeological remains are discovered during the course of construction. The initial training shall be conducted by the on-site archaeological monitor and can be incorporated into the project's construction safety training. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities prior to their commencement of ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording. **AR-D Treatment of Unanticipated Finds of Human Remains:** If human skeletal remains are found at any project site during ground-disturbing activities, work shall be suspended and the Los Angeles County Coroner's Office shall be notified. Standard guidelines set by California law provide 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). If the remains are found to be archaeological, then after the coroner releases the site, the qualified professional archaeologist, in consultation with the most likely descendant, shall prepare an archaeological resources Treatment Plan in accordance with Mitigation Measure AR-I that also incorporates the guidance 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. The plan shall follow the Native American Graves Protection and Repatriation Act/ CalNAGPRA rules, and include the terms of any reburial or final disposition and any necessary CSULB assistance required for the reburial or associated	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		ceremonies. Human remains recovered and awaiting repatriation shall be held in a secure location unless otherwise determined by the CSU in consultation with the Most Likely Descendent. **At the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A, the following mitigation measures may apply.** **AR-E Extended Phase I Investigations:** This mitigation measure shall apply to projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary. If determined to be required as the result of implementation of Mitigation Measure AR-A (Initial Project Review), an Extended Phase I (XPI) Plan shall be devised and implemented at the advice of the qualified archaeologist and at the discretion of CSULB, if not enough information is available to identify the three-dimensional limits of intact archaeological resources within a known archaeological site. The purpose of the XPI is to identify the three-dimensional spatial boundaries of undisturbed archaeological resources within or in proximity to the proposed project site. The XPI Plan shall include, at a minimum: • An introduction; • Site context and stratigraphy; • Decision thresholds; • Scope of work; • Timetable; • Curation plan; • References cited; and • Appropriate maps.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		The XPI shall be completed, and results documented in a memo summarizing the XPI methods and findings prepared by the qualified archaeologist, prior to the beginning of ground-disturbing activities associated with the project so that the results may be used in project planning. The memo reporting either positive or negative results shall also be communicated to the South Central Coastal Information Center (SCCIC). If no subsurface or potentially significant archaeological resources are identified during the XPI: • An Archaeological Resources Monitoring and Discovery Plan (ARMDP) shall be prepared in accordance with Mitigation Measure AR-F. • Upon the start of ground-disturbing activities, Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring) shall apply. • Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting). If potentially significant subsurface archaeological resources are identified during the XPI: • If feasible, the identified subsurface site location shall be avoided by planned construction. If avoidance is not feasible, then a Treatment Plan and Phase III data recovery in accordance with Mitigation Measures AR-I shall be implemented. Following implementation of AR-I, ground-disturbing activities may commence with implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring). • Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measures AR-J (Reporting).	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		AR-F Archaeological Resources Monitoring and Discovery Plan: This mitigation measure shall apply to projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary. If determined to be required following implementation of Mitigation Measure AR-A (Initial Project Review), an Archaeological Resources Monitoring and Discovery Plan (ARMDP) shall be prepared for projects with the potential to impact known listed/potentially eligible archaeological sites. The ARMDP shall clearly specify the steps to be taken to mitigate impacts to archaeological resources. The ARMDP shall specify monitoring methods, personnel, and procedures to be followed in the event of a discovery. All work shall be conducted under the direction of a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738). ARMDPs for previous projects on campus may be utilized if applicable as determined by the qualified archaeologist. The ARMDP shall include, at a minimum: • An introduction; • Project description; • Statement of archaeological sensitivity and rationale for the monitoring program; • Archaeological context and research design; • Statement of methods and identification of what activities require monitoring; • Description of monitoring procedures; • Outline the protocol to be followed in the event of a find; • Terms of the final disposition of any non-funerary artifacts;	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Criteria and triggers identified when further consultation is required for the evaluation and treatment of a find; • Key staff, including Native American monitors, shall be identified, and the process of notification and consultation shall be specified in the event of a potentially significant find; and • A curation plan. Once the ARMDP is prepared, ground-disturbing activities may commence with the implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring). If no subsurface or potentially significant archaeological resources are identified: • Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting). If potentially significant subsurface archaeological resources are encountered during ground-disturbing activities: • Work shall stop immediately and Mitigation Measure AR-H (Evaluation of Unanticipated Finds) shall apply. **AR-G Archaeological Resources Monitoring:** At the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A, for projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary, this mitigation measure shall apply following implementation of an ARMDP developed pursuant to Mitigation Measure AR-F, or implementation of an archaeological resources Treatment Plan developed pursuant to Mitigation	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		Measure AR-I. This mitigation measure shall also apply, at the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A (Initial Project Review), for projects located in unknown/ineligible archaeological sites on campus requiring ground-disturbing activities. Due to the potential to encounter archaeological resources, archaeological monitoring shall be conducted by an archaeological monitor who is working under the guidance of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738). To preserve the integrity of the tribal consultation process, archaeological support services, including monitoring, shall be provided by an entity separate and distinct from that providing Native American support services. The archaeological monitor shall observe ground-disturbing activities. If discoveries are made during ground-disturbing activities, additional work may be required in compliance with Mitigation Measure AR-H (Evaluation of Unanticipated Finds). If no subsurface or potentially significant archaeological resources are identified: • Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting). If potentially significant subsurface archaeological resources are encountered during ground-disturbing activities: • Work shall stop immediately and Mitigation Measure AR-H (Evaluation of Unanticipated Finds) shall apply.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		AR-H Evaluation of Unanticipated Finds; Phase II Testing: In the event an unanticipated archaeological resource is unearthed during ground-disturbing activities associated with any campus project, work shall stop immediately and the discovery shall be evaluated by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), pursuant to the procedures set forth at CEQA Guidelines Section 15064.5. Depending on the nature of the find, the determination of significance may require additional excavation, potentially including the preparation and execution of a Phase II Archaeological Testing Plan. As the lead agency, CSULB shall make a determination of significance on the basis of the recommendations of the qualified archaeologist and submit this determination of significance to the State Historic Preservation Officer (SHPO) for review and comment. The results of testing shall be presented in an appropriate memorandum or report and communicated to the SCCIC. If the resource is determined not to be significant: • Resource-specific work is complete, and Mitigation Measure AR-I (Archaeological Resources Treatment Plan) does not apply. • Archaeological monitoring in accordance with Mitigation Measure AR-G shall still apply unless otherwise stipulated in the ARMDP. • Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting). If the resource is determined to be significant and avoidance is not feasible:	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Mitigation Measure AR-I is required, in which a resource-specific Archaeological Resources Treatment Plan shall be prepared and executed prior to recommencing ground-disturbing activities that may impact the resource. • Archaeological monitoring in accordance with Mitigation Measure AR-G shall still apply unless otherwise stipulated in the ARMDP. **AR-I Archaeological Resources Treatment Plan; Phase III Data Recovery:** As determined by a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), if a significant resource is identified within the project site, an archaeological resources Treatment Plan shall be developed that will govern the treatment of the resource if it is encountered. CSULB shall provide via e-mail a copy of the Treatment Plan to the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus as identified by the Native American Heritage Commission and tribes shall be given 7 days to provide comments. Avoidance and preservation-in-place are the preferred treatment for archaeological resources, and the Treatment Plan shall detail plans for avoidance, if possible, such as restricting work to disturbed soil or limiting the depth of excavations to avoid archaeological resources. If disturbance to resources cannot be avoided, a Phase III (data recovery) investigation shall be required, pursuant to CEQA Guidelines Section 15064.5. The Phase III data recovery plan shall be prepared in consultation with SHPO. The Phase III data recovery plan shall generally consist of:	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• A limited scale program of archaeological excavation; • Radiocarbon 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 shall be properly curated, as appropriate. Once the Treatment Plan is prepared and, if applicable, the Phase III data recovery is conducted, ground-disturbing activities may commence or continue with the implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring). All bone recovered as a result of Phase III excavations shall be analyzed by a qualified osteologist or physical anthropologist at minimum on a weekly basis while excavations are underway in order to identify whether any human remains are included in the collection so that they may be appropriately treated in compliance with Mitigation Measure AR-D (Treatment of Human Remains). Phase III work shall be considered complete and ground-disturbing activities may commence when: • Archaeological excavations are completed in accordance with the Phase III data recovery plan and to the satisfaction of CSULB and the qualified archaeologist. • Documentation is completed in accordance with Mitigation Measure AR-J (Reporting). The report shall be completed and presented to CSULB for comment within 18 months of the completion of Phase III excavations.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		AR-J Reporting: If a mitigation measure is implemented that requires documentation or reporting, then mitigation shall be considered complete when documentation of findings is completed to a level satisfactory to the qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), in coordination with CSULB, and filed with the SCCIC of the California Historical Resources Information System. Specific reporting requirements shall be detailed in the ARMDP, Treatment Plan, and other plans created in the course of the Master Plan Update or in compliance with the above mitigation measures. A monitoring technical report documenting activities monitored, monitoring actions taken, and a description of finds shall be submitted to the SCCIC after approval by CSULB. If the results of monitoring for significant resources are negative, or only non-significant finds or isolates are encountered, then the report shall take the form of a memorandum, and shall include, at minimum: • Undertaking information; • Appropriate maps of the project area; • Qualifications of monitoring staff; • Monitoring locations and methods; • Dates of monitoring; and • As necessary, management considerations and recommendations for future work. • The memorandum shall be submitted to CSULB for comment within 8 weeks of the completion of project fieldwork and communicated to the SCCIC when completed to the satisfaction of CSULB.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		If the results of monitoring are positive for significant resources, then the report shall be prepared in accordance with the California Office of Historic Preservation's "Archaeological Resource Management Reports: Recommended Contents and Format", and shall include: • A management summary; • Undertaking information; • Appropriate maps of both the project area and impacted resources; • An environmental setting; • Prehistoric, ethnographic, and historic contexts; • Research design; • Methods; • A thorough report of findings; • A discussion of the data obtained and the resource's significance in reference to the historic, ethnographic, and prehistoric contexts; • A record of the final disposition of excavated artifacts and any intact archaeological resources; • Management considerations and recommendations for future work that may impact the resource; and • References. • Other report sections may also be required as determined by CSULB with the recommendations of the qualified archaeologist. • The report shall be submitted to CSULB for comment within 18 months of the completion of project fieldwork, and shall be communicated to the SCCIC when completed to the satisfaction of CSULB. Appropriate DPR 523 series forms shall also be prepared as appropriate for newly identified resources	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		or resources that, in the estimation of the qualified archaeologist, require updated forms and submitted to the SCCIC. Minimal documentation of previously unknown isolated finds shall consist of a sufficient description of the find to prepare a DPR 523a Primary Form (including photographs) and appropriate maps. Minimum documentation of previously unknown archaeological sites shall consist of a: • Sufficient description of the find to prepare a DPR 523a Primary Form (including photographs); • DPR 523c Archaeological Site Record; • DPR 523j Location Map; and • DPR 523k Sketch Map. Updated forms may be required for documented resources if: • There has been a substantial change to the significance of the resource (e.g., if it is found to be destroyed), • Newly identified archaeological features or attributes of the site are identified that are not otherwise documented in the existing DPR forms, or • For any reason the qualified archaeologist finds the existing forms to be inadequate. Minimum documentation of known resources shall consist of a DPR 523L Update form if considered necessary by the qualified archaeologist. Additional forms may also be required to appropriately document resources at the discretion of CSULB and the qualified archaeologist. **AR-K Curation and Final Disposition of Archaeological Materials:** Archaeological material collected during ground-disturbing activities for projects	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		shall be processed and curated according to current professional repository standards unless otherwise determined by the lead agency as the result of consultation. The collections and associated records shall be transferred, including title, to an appropriate curation facility, to be accompanied by payment of the fees necessary for permanent curation. Final disposition of resources of Native American origin shall be determined in accordance with the ARMDP in Mitigation Measure AR-F or Treatment Plan in Mitigation Measure AR-I. Minimum documentation before any final disposition of the artifacts shall consist of: • Count; • Weight; • A basic description of all artifacts; and • Include photographic documentation of any diagnostic artifacts and a representative sample of non-diagnostic artifacts.	
CUL-3 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Potentially significant	See Mitigation Measure AR-D above.	Less than significant
GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES			
GEO-1 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	Potentially Significant	**GEO-A** Prior to the commencement of any ground-disturbing activities that would impact native soils (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) at a depth of 4 feet or greater below ground surface, CSULB shall consult with a Society of Vertebrate Paleontology (SVP)-qualified paleontologist. The qualified paleontologist shall review:	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• The proposed scope of work; • Excavation plans against the data and the analysis in the Paleontological Resources Memorandum; and • Any available geotechnical studies or boring logs. The paleontologist shall determine to what level the proposed project excavations have the potential to impact paleontological resources. Any geotechnical boring, potholing, or other project-specific exploratory ground-disturbance shall be monitored at the qualified paleontologist's discretion. If the paleontologist determines that the project will not impact paleontological resources: • Mitigation Measures GEO-B and GEO-C shall not apply. If the paleontologist determines the proposed scope of work is found to not meet the SVP Standards or the geotechnical investigation identifies medium- to high-potential to encounter undisturbed geologic contexts, the qualified paleontologist, in consultation with CSULB, shall include recommendations for the project. Recommendations can include: • Paleontological monitoring by a qualified paleontologist in accordance with Mitigation Measure GEO-B; and • Worker environmental awareness training in accordance with Mitigation Measure GEO-D. **GEO-B** As determined by the SVP-qualified paleontologist in consultation with CSULB, paleontological monitoring shall be required for the following types of projects:	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Found not to meet the SVP Standards; • The geotechnical investigation identifies medium- to high-potential to encounter undisturbed geologic contexts; or • Ground-disturbing construction activities (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) into native Pleistocene-age soil and bedrock at a depth of 4 feet or greater below ground surface are required. At the discretion of the qualified paleontologist, the level of monitoring may range from full-time or part-time (spot-check), based on the qualified paleontologist's review of plans and relevant documentation as well as on-site observations. • If no significant fossils are recovered after 50 percent of ground-disturbing activities has been completed, full-time monitoring may be modified to weekly spot-check monitoring. • If it is determined during the course of ground-disturbing activities that project excavations are located within fill or previously disturbed soils, or that the sensitivity for significant paleontological resources is otherwise low, monitoring may be reduced or suspended. • The determination to reduce or discontinue paleontological monitoring in the project area shall be based on the professional opinion of the qualified paleontologist regarding the potential for fossils to be present after a reasonable extent of the geology and stratigraphy has been evaluated. The qualified paleontologist shall attend preconstruction meetings, as deemed necessary by the paleontologist in consultation with CSULB,	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		and manage the paleontological monitor(s) if the qualified paleontologist is not doing the monitoring. The paleontological monitor shall maintain logs and provide a final summary report of all ground-disturbing activities monitored with the potential to disturb paleontological resources. In the event that fossils are discovered during grading at any depth, the following shall be required: • The on-site construction supervisor shall be notified immediately and shall redirect work away from the location of the discovery. • The contractor shall notify CSULB and consult with the qualified paleontologist to assess the significance of the find in accordance with SVP Standards. If any find is determined to be significant, appropriate avoidance measures recommended by the qualified paleontologist and approved by CSULB shall be followed. If avoidance is unnecessary or infeasible, then Mitigation Measure GEO-C shall be implemented. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery. If any find is determined not to be significant, then work shall proceed, and Mitigation Measure GEO-C would not apply. **GEO-C** If the fossils are determined to be significant, then the SVP-qualified paleontologist shall prepare and implement a data recovery plan. The plan shall generally detail the nature and purpose of the paleontological investigation. The plan shall:	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Incorporate resource context; • Incorporate appropriate field methods for data collection depending on the type of fossils found; and • Detail how the fossils will be prepared, cleaned, identified, catalogued, temporarily housed, and permanently curated with an appropriate institution with a research interest in the materials (which may include the Natural History Museum of Los Angeles County). The qualified paleontologist shall ensure that curation of fossils is completed in consultation with CSULB. A letter of acceptance from the curation institution shall be submitted to CSULB. Ground-disturbing construction activities may commence once excavations are completed in accordance with the data recovery plan and to the satisfaction of CSULB in consultation with the qualified paleontologist. However, the data recovery work shall not be considered complete until excavations and associated analyses are completed and a final report is prepared. The report shall be completed and presented to CSULB for comment within 18 months of the completion of excavations. **GEO-D** As determined by the SVP-qualified paleontologist in consultation with CSULB, and prior to the beginning of ground-disturbing activities (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) by the construction crew, the construction crew associated with ground-disturbing activities shall be informed on how to identify paleontological localities, such as fossils, and of the regulatory protections afforded those resources. The	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		crew shall also be informed of procedures relating to the discovery of unanticipated paleontological resources. The crew shall be cautioned not to collect fossils, and directed to inform a construction supervisor and the on-site paleontological monitor, if available, in the event that paleontological resources are discovered during the course of construction. The initial training shall be conducted by the on-site paleontological monitor and can be incorporated into the project's construction safety training. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities prior to their commencement of ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording.	
GREENHOUSE GAS EMISSIONS			
GHG-1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant	No mitigation measures are required.	Less than significant
GHG-2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	No mitigation measures are required.	Less than significant
HYDROLOGY AND WATER QUALITY			
HWQ-1 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
HWQ-2 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	Less than significant	No mitigation measures are required.	Less than significant
HWQ-3 Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in (i) substantial erosion or siltation on- or off-site, (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	Less than significant	No mitigation measures are required.	Less than significant
HWQ-4 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less than significant	No mitigation measures are required.	Less than significant
NOISE			
NOI-1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of	Potentially significant	**NOI-A** The following measures shall be implemented to minimize construction noise:	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
other agencies?		1. Construction activity shall generally be limited to the daytime between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday. Construction activities shall be prohibited on Federal holidays. Loud construction (e.g., asphalt removal, large-scale grading operations) shall not be scheduled on Sundays or during finals week and preferentially shall be scheduled during school breaks, summer/winter break, etc. 2. All construction equipment shall be properly maintained and equipped with noise reducing air intakes, exhaust mufflers, and engine shrouds in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. 3. Electrical power, rather than diesel equipment, shall be used to run compressors and similar power tools and to power any temporary structures, such as construction trailers. 4. All stationary construction equipment (e.g., electrical generators, pumps, refrigeration units, and air compressors) and equipment staging areas shall be located as far as feasible from occupied residences adjacent to the CSULB main campus and the Beachside Village property or the Discovery Preschool located 5550 East Atherton Street. 5. When anticipated construction activities are expected to occur less than 140 feet from an existing off-campus residential land use, one or more of the following techniques shall be employed to keep noise levels below a threshold of 75 dBA at potentially affected sensitive receptors:	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		a. Reduce construction equipment and vehicle idling and active operation duration. b. Install or erect on-site a temporary, solid noise wall (or acoustical blanket having sufficient mass, such as the incorporation of a mass-loaded vinyl skin or septum) of adequate height and horizontal extent so that it linearly occludes the direct sound path between the noise-producing construction process(es) or equipment and the sensitive receptor(s) of concern. c. Where impact-type equipment is anticipated onsite, apply noise-attenuating shields, shrouds, portable barriers or enclosures, to reduce the magnitudes of generated impulse noises. **NOI-B** If nighttime construction is required, noise levels shall not exceed 65 dB Lmax when measured at the construction site boundary between the hours of 7:00 p.m. and 7:00 a.m. One or more of the following techniques shall be employed: 1. The construction contractor shall limit haul truck deliveries to the same hours specified for construction activities (between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday). The haul route exhibit shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise. 2. The on-site speed limit for all vehicles and construction equipment shall be limited to 15 mph on any construction site.	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		NOI-C Jack Rose Track/Commencement Facilities Crowd Noise: To minimize operational noise levels generated during events at the Jack Rose Track, a noise assessment shall be conducted by a qualified acoustical engineer or noise specialist to evaluate potential increases in noise levels associated with crowd noise from events at the proposed Jack Rose Track/Commencement Facilities project, including the collection of new ambient noise measurements. The assessment shall be conducted prior to final design. All recommended noise reduction measures shall be incorporated into the design to reduce increases in existing operational noise levels at nearby noise-sensitive land uses to not cause a 3 dBA increase over ambient noise levels and exceed the applicable land use compatibility standard. Such measures may include, but are not limited to, the incorporation of structural shielding and revised placement for amplified sound system speakers.	
NOI-2 Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation measures are required.	Less than significant
POPULATION AND HOUSING			
POP-1 Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
POP-2 Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Less than significant	No mitigation measures are required.	Less than significant
PUBLIC SERVICES AND RECREATION			
PSR-1 Fire Protection. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?	Less than significant	No mitigation measures are required.	Less than significant
PSR-2 Police Protection. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?	Less than significant	No mitigation measures are required.	Less than significant
PSR-3 Schools. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?			
PSR-4 Library Services. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?	Less than significant	No mitigation measures are required.	Less than significant
PSR-5 Parks. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks? Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
or be accelerated? Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			
TRANSPORTATION			
TRA-1 Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less than significant	No mitigation measures are required.	Less than significant
TRA-2 Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	Less than significant	No mitigation measures are required.	Less than significant
TRA-3 Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	Less than significant	No mitigation measures are required.	Less than significant
TRA-4 Would the project result in inadequate emergency access?	Less than significant	No mitigation measures are required.	Less than significant
TRIBAL CULTURAL RESOURCES			
TCR-1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American	Potentially significant	**TCR-A Worker Environmental Awareness Program for Tribal Cultural Resources:** Due to the potential to encounter unanticipated resources, prior to the beginning of ground-disturbing activities by the construction crew, the construction crew associated with ground-disturbing activities shall be informed of the tribal cultural resource's values involved and of the regulatory protections afforded those resources. The crew shall also be informed of procedures relating to the discovery of unanticipated resources that require	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?		evaluation as potential tribal cultural resources. The crew shall be cautioned not to collect artifacts, and directed to inform a construction supervisor and the onsite Native American monitor in the event that tribal cultural resources are discovered during the course of construction. The initial training shall be conducted by the on-site Native American monitor and can be incorporated into the project's construction safety training or in conjunction with the Worker Environmental Awareness Program for Archaeological Resources in accordance with Mitigation Measure AR-C. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording. **TCR-B Native American Monitoring:** This mitigation measure shall apply to projects requiring ground-disturbing activities located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary, including for ground-disturbing activities conducted by an archaeologist. This mitigation measure shall also apply, at the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A (Initial Project Review), for projects located in unknown/ineligible archaeological sites on campus requiring ground-disturbing activities. Due to the potential to encounter unanticipated resources, Native American monitoring shall be conducted by a qualified Native American monitor representing the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus. To preserve the integrity of the tribal consultation	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		process, archaeological support services, including monitoring, shall be provided by an entity separate and distinct from that providing Native American support services. The tribal cultural monitor shall observe ground-disturbing activities, maintain logs of all activities monitored, and will make documentation available to CSULB and all consulting Native American parties who request a record of the logs. The log shall contain at a minimum: • A brief description of the locations and activities monitored; • A description of tribal cultural resources encountered; and • A description of the treatment of those resources. The logs shall be compiled and submitted to CSULB within 4 weeks of the completion of monitoring. **TCR-C Treatment of Tribal Cultural Resources:** This mitigation measure applies to projects located within listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary. If a significant tribal cultural resource, as defined by Public Resources Code Section 21074, is identified within the project site, then prior to the beginning of the ground-disturbing activities within the documented boundaries of the resource or a 25-foot buffer: • CSULB shall provide via e-mail a copy of the Treatment Plan prepared pursuant to Mitigation Measure AR-I to the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus as identified by the Native American Heritage Commission; and	

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
		• Tribes shall be offered an opportunity to comment within 7 days on the Treatment Plan developed that will govern the treatment of the resource. Avoidance and preservation-in-place are the preferred treatment for tribal cultural resources, and the Treatment Plan will detail plans for avoidance, if possible, such as restricting work to disturbed soil or limiting the depth of excavations to avoid potential tribal cultural resources. **TCR-D Commemorative Sign:** In consultation with the tribes consulting on this Master Plan Update and other interested Native American campus groups, the CSU shall design, create, and place in an appropriate conspicuous location a sign that shall commemorate the National Historic Register of Places and California Historical Place and California Register of Historical Resources listed site, Puvunga Indian Village Sites. In keeping with state law, no information regarding the archaeological site, artifacts, tribal cultural resources, or other confidential topics shall be included in the signage. No tribal government shall be given precedence in the signage over any other tribal government identified by the Native American Heritage Commission.	
TCR-2 Would the project the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource	Potentially significant	See Mitigation Measures TCR-A through TCR-D above.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?			
UTILITIES AND ENERGY			
UE-1 Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less than significant	No mitigation measures are required.	Less than significant
UE-2 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	Less than significant	No mitigation measures are required.	Less than significant
UE-3 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less than significant	No mitigation measures are required.	Less than significant

Table ES-2: Summary of Project Impacts and Mitigation Measures

Environmental Impact	Significance Before Mitigation	Mitigation Measures	Significance After Mitigation
UE-4 Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	Less than significant	No mitigation measures are required.	Less than significant
UE-5 Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less than significant	No mitigation measures are required.	Less than significant
UE-6 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less than significant	No mitigation measures are required.	Less than significant
UE-7 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	No mitigation measures are required.	Less than significant

CHAPTER 1
INTRODUCTION

This Environmental Impact Report (EIR) has been prepared by California State University, Long Beach (CSULB) to evaluate potential environmental effects that would result from implementation of the proposed California State University, Long Beach Master Plan Update (Master Plan Update, proposed project, or project). This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (California Public Resources Code Section 2100 et. seq., as amended) and its implementing guidelines (California Code of Regulations, Title 14, Section 15000 et. seq.). The Board of Trustees of the California State University (CSU) is the lead agency responsible for certification of this EIR.

1.1 Purpose of the EIR

CEQA requires preparation of an EIR when there is substantial evidence supporting a fair argument that a proposed project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the environmental effects of a proposed project. Additionally, the EIR process is intended to identify the ways that environmental damage can be avoided or significantly reduced; identify feasible mitigation measures and alternatives that might prevent significant, avoidable damage to the environment; and disclose to the public why a governmental agency approves a project if significant environmental effects are involved. This EIR provides information about the potential effects of the proposed project.

As the lead agency for the proposed project, the CSU Board of Trustees is required to consider the information in the EIR, along with any other relevant information, in making its decisions about the project. Although an EIR does not determine the ultimate decision that will be made regarding implementation of a project, CEQA requires lead agencies to consider the information in the EIR and make findings regarding each significant effect identified therein. The CSU Board of Trustees has sole authority to consider and certify the Final EIR, approve the proposed project, and adopt a Mitigation Monitoring and Reporting Program, Findings of Fact, and Statement of Overriding Considerations, if warranted. Other agencies may also use this EIR in their review and approval processes, as indicated in Chapter 2, Project Description.

1.2 Scope of the EIR

Each of the 23 universities within the CSU system is required by the CSU Board of Trustees to prepare and periodically update a physical Master Plan. CSULB is proposing a comprehensive update of the current campus Master Plan to accommodate student enrollment growth, campus population growth, and physical development of the campus through the horizon year 2035. The project that is analyzed in this EIR includes specific development projects identified in the Master Plan Update that are expected to be developed in the near-term (0-5 years), mid-term (6-10 years), and long-term (11 years or more). Thus, this EIR for the Master Plan Update evaluates development on the campus at both the program and project levels.

Pursuant to Section 15168 of the State CEQA Guidelines, a program EIR may be prepared for a series of actions that can be characterized as a single large project and are related geographically; or as logical parts in the chain of contemplated actions; or in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental impacts that can be mitigated in similar ways. A program

EIR is the appropriate type of EIR to evaluate the proposed project because the Master Plan Update includes an overall program of projects developed over a multi-year planning horizon within the CSULB campus and meets all the requirements of Section 15168 of the State CEQA Guidelines.

As individual projects analyzed at the program level in this EIR are proposed for implementation, each development embarked on by CSULB during the lifespan of the Master Plan Update would be individually reviewed for consistency with the Master Plan Update EIR and approved for implementation. Project changes, changes in a project's circumstances, or the potential for new or more severe impacts may require additional environmental review, as necessary. Any additional environmental review will be conducted in accordance with the State CEQA Guidelines Section 15168(c), which states that later activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared. The additional CEQA environmental review for these future projects would occur after the CSU Board of Trustees approval of the Master Plan Update and certification of this EIR.

In addition, analyses at the project level have been prepared for projects that would be implemented within the foreseeable future (0-10 years) and for which enough detailed development information is available. The EIR will examine all phases of these development components at a site-specific level, including planning, construction, and operation and is intended to provide comprehensive environmental clearance for these projects.

1.2.1 Resource Areas Analyzed in this EIR

In accordance with the State CEQA Guidelines Section 15143, this EIR focuses on the environmental impacts identified as potentially significant during the Initial Study process, including comments received as part of the public scoping process. The Initial Study and comments received as part of the public scoping process are included in Appendix A of this EIR. Based on the findings of the Initial Study, it was determined that impacts related to agriculture and forestry resources, hazards and hazardous materials, land use and planning, mineral resources, and wildfire did not require further evaluation as part of the EIR. These resource areas are briefly addressed in Chapter 4, Other CEQA Considerations, of this EIR. Thus, the resource areas analyzed in detail in this EIR include the following:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hydrology and Water Quality
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Energy

This EIR also includes a discussion of other CEQA-mandated issues, including cumulative impacts, significant irreversible environmental changes, growth-inducing impacts, and alternatives.

1.3 EIR Process

1.3.1 Notice of Preparation and Initial Study

A Notice of Preparation (NOP) was published for the proposed project on April 21, 2022, to notify responsible and trustee agencies, stakeholders, and other interested parties that CSULB planned to prepare a Draft EIR and to request input regarding the scope and content of the environmental analysis and information to be included in the Draft EIR. The NOP and Initial Study were circulated for a 30-day comment period from April 21, 2022, to May 20, 2022. The NOP was sent to approximately 80 agencies, stakeholders, and other interested parties and over 2,600 residences and businesses. Additionally, the NOP was posted in the Long Beach Press-Telegram on April 21, 2022. The NOP and Initial Study were also made available for review online at: www.csulb.edu/beach-building-services/california-environmental-quality-act-cega-compliance and through the proposed project's virtual open house that was available at www.csulb-cmp-eir.com through the NOP comment period.

Two public scoping meetings were held to obtain input on the scope of the contents of the EIR. The meetings consisted of one virtual meeting hosted on the Zoom platform on April 28, 2022, and one in-person meeting held at The Pointe, located in the Walter Pyramid at CSULB, on May 4, 2022. Nine individuals attended the virtual meeting and ten individuals attended the in-person meeting. A total of 17 individual written comments were received from public agencies and members of the general public. The NOP, Initial Study, and all comments received on the NOP and Initial Study are provided in Appendix A.

1.3.2 Public Review of the Draft EIR

This Draft EIR is being circulated for a 45-day public review and comment period from September 1, 2023, to October 16, 2023. During this public review period, comments on the adequacy of the Draft EIR can be submitted by agencies, stakeholders, and other interested parties to the following contact by mail, e-mail, in-person, or online, **no later than 11:59pm on October 16, 2023**:

Mail:	Melissa Soto, Manager of Capital Program Development California State University, Long Beach Design & Construction Services 1331 Palo Verde Avenue, Long Beach, CA 90815
E-mail:	CSULB-CommunityEngagement@csulb.edu (please include "Master Plan Update EIR Comments" in the subject line)
Online:	Provide your comments online by scanning the QR code located on the Notice of Availability or accessing the website here: https://www.surveymonkey.com/r/X3CSYLT.
In-Person Meeting:	Provide comments in writing at the in-person Draft EIR Public Meeting to be held on September 13, 2023, at 6pm at The Pointe, located in the Walter Pyramid at CSULB.
Virtual Meeting:	Provide comments in writing at the virtual Draft EIR Public Meeting to be held on September 14, 2023, at 6pm. Zoom Conference: https://zoom.us/j/95666519969 Meeting ID: 956 6651 9969 Join by Phone: +1 (669) 444-9171 / Meeting ID: 956 6651 9969

The Draft EIR will be made available for public review during the public review period at: www.csulb.edu/beach-building-services/california-environmental-quality-act-ceqa-compliance. In addition, a limited number of hard copies of the Draft EIR can be provided to persons who are unable to access the online version.

Two public review meetings will be held to obtain comments on the Draft EIR – one in-person meeting on September 13, 2023, and one virtual meeting on September 14, 2023. The presentation will provide an overview of the proposed Master Plan Update, conclusions of the Draft EIR, and information about how to submit written public comments on the adequacy of the information presented in the Draft EIR. CSULB encourages agencies, stakeholders, and other interested parties to provide written comments on the Draft EIR prior to the end of the 45-day public review period.

1.3.3 Final EIR/Project Approval

Following the close of the public and agency comment period on the Draft EIR, all comments will be included in the project's administrative record for consideration as part of the proposed project approval process. Draft EIR text will be updated as necessary, and responses will be prepared for comments received during the public review period that raise CEQA-related environmental issues regarding the proposed Master Plan Update in accordance with Section 15088(c) of the State CEQA Guidelines. The responses will be published in the Final EIR. As required by CEQA Section 21092.5 and State CEQA Guidelines Section 15088(b), written responses to comments submitted by public agencies will be provided to those agencies for review at least 10 days prior to the consideration of certification of the EIR. The EIR will be considered by the CSU Board of Trustees in a public meeting anticipated for January 2024 and will be certified if it is determined to be compliant with CEQA. Upon certification of the EIR, the CSU Board of Trustees will consider the project for approval during the same public meeting.

1.3.4 Adoption of a Mitigation Monitoring and Reporting Program

Pursuant to the State CEQA Guidelines Section 15097, a lead agency is required to adopt a program for monitoring or reporting on mitigation measures required to mitigate or avoid significant environmental effects as part of the project approval process. The Mitigation Monitoring and Reporting Program will be prepared following preparation of the Final EIR so that it reflects any changes or revisions to mitigation measures made in response to public comments on the Draft EIR. Upon approval of the proposed Master Plan Update or an alternative to the proposed Master Plan Update, the lead agency will be responsible for the implementation of the Mitigation Monitoring and Reporting Program.

1.3.5 Relationship with Other University Planning Efforts

The Master Plan is intended to guide the physical campus development necessary to support the needs of the current student, faculty, and staff campus populations as well as projected student enrollment and campus population growth. To support the Master Plan Update, several past and concurrent planning efforts are closely related to and expand upon the 2035 Master Plan. These planning efforts are intended to be complementary to and consistent with the 2035 Master Plan. They are described below and provide more detail about specific university plans and programs.

Beach 2030 Strategic Plan

The Beach 2030 Strategic Plan is a roadmap for the vision of the future of CSULB for the next 10 years. The plan includes five strategic priorities to respond to the challenges and opportunities of the next decade, inspire action across the University and its stakeholders; focus resources

(energy, time, and attention), guide collective action towards long-term goals, and amplify institutional values. The strategic priorities are to: engage all students, expand access, promote intellectual achievement, build community, and cultivate resilience. The action plans to achieve the strategic priorities are to: build an equitable and empowering culture; be a student-ready University; reimagine faculty; reimagine staff; build a growth strategy; advance partnerships for a public good; and be a future-ready University. The Master Plan Update focuses on the physical changes necessary to achieve the priorities in the Beach 2030 Strategic Plan.

Academic Master Plan

In addition to the strategic plan, each CSU university has an Academic Master Plan. The Academic Master Plan outlines the university president's vision as it relates specifically to academic programs. The plan lists existing degree programs, projected (planned) programs, and program-review schedules for authorized degree programs. Updated Academic Master Plans are submitted each March for review by the CSU Board of Trustees. The most recent version of the Academic Master Plan for all CSU universities is for 2022-2023 and projects degree programs through 2031-2022.

Climate Action Plan

The Climate Action and Adaptation Plan (CAAP) outlines a flexible roadmap for CSULB to eliminate greenhouse gas (GHG) emissions from campus operations in line with CSULB's commitment to carbon neutrality and adapt to the negative impacts of climate change with a goal to decarbonize campus operations by 2030 and commute-related emissions by 2040. The CAAP serves as a guiding document to help CSULB achieve its climate goals by identifying mitigation focus areas and adaptation focus areas. The mitigation focus areas emphasize specific actionable steps to take in order to achieve a reduction in GHG emissions, such as reinvesting in buildings and preparing infrastructure for low- to no-carbon energy systems, optimizing and advancing renewable energy and electric infrastructure on- and off-campus, and eliminating and reducing emissions related to air travel, commuting, and waste generation. The adaptation focus areas identify approaches for building resiliency into the physical campus, such as a strategy to fund, prepare, educate, and communicate sustainability, climate adaptation, and emergency preparedness; programs to address food and housing insecurity; a program to enhance the campus urban forest, optimize landscape design and maintenance, and improve irrigation water efficiency; and dedicated actions to further curriculum, increase climate literacy, and expand academic programs related to sustainability and climate. The Master Plan Update identifies sustainability topic areas that align with the university's commitments to climate action and resilience.

Space Utilization and Optimization Study

The purpose of the Space Utilization and Optimization Study is to provide a comprehensive space usage assessment based on data and exploratory findings, and identify space optimization strategies to address space needs on campus. The study informed the Master Plan Update and assisted in prioritizing future projects by looking at space on campus to identify underutilized space to reclaim and re-purpose for the overall enhancement of the University. The study identified five distinct types of space, each with distinct metrics for assessment and utilization:

- Instructional Space - utilization based on scheduled use and station occupancy; assessed for physical condition, and functionality.

- Office & Administration Space - utilization based on square foot per person (square foot per person), workstation size, work environment and meeting room utilization.
- Research & Creative Activity Space - research metrics are suggested; utilization based on student involvement, publications/ presentations, grant dollars per square foot, etc.
- Student Oriented Spaces - utilization based on stations and activity level.
- Auxiliary Spaces - types of spaces include large conference venue use, Student Union, Book Store, Cafeteria, and the Foundation Building; metrics dependent on specific space type.

The study identified approximately 70,000 square feet of campus space as “low/no usage” and available for immediate use with minor physical improvements. Additionally, the study identified 600,000 square feet as “opportunity areas” where utilization could be increased through various strategies. The study recommended operational changes, new standards, and physical space modifications (modernization or renovation) for each of the five types of space.

Utility Master Plan

The Utility Master Plan evaluated the existing utility systems by physical conditions, capacity, functionality, reliability, ease of maintenance, age, and its ability to serve the present and future needs of the university. The Utility Master Plan identifies improvements to utility infrastructure throughout the campus including those for water, sanitary sewer, storm drain, irrigation water, chilled and heating hot water systems, natural gas system, electrical, and telecommunications.

Housing Capacity Expansion Plan

The Housing Capacity Expansion Plan outlines a strategy for the redevelopment of housing and residential life facilities on campus. The study focuses on potential opportunity sites for Beachside, Parkside, and Hillside Colleges student residential villages, and includes a university-wide strategy for current and future student housing at CSULB, including a physical framework by college for the campus. The strategy is based on several criteria, including connection to the core of the campus; equitable distribution of housing choices; variety of open spaces; enhanced activity along Bouton Creek; enhanced activity along Beach Drive; enhanced orientation at the intersection of Determination Drive (formerly Earl Warren Drive) and Bouton Creek; linked colleges; distinctive college identities; minimizing the beds temporarily offline at any given time; potential cost; and parking construction cost. The study also determines site approaches for additional housing to meet identified needs and considers sustainability, impacts to parking and dining services, and infrastructure and utility needs.

1.4 Organization of this EIR

This EIR is organized as follows:

Executive Summary: provides an overview of the information provided in detail in subsequent chapters. It consists of an introduction; brief descriptions of the proposed project background, location and setting, purpose, need, and objectives, and proposed project characteristics; a description of the alternatives to the project; a discussion of issues raised by the public and agencies relative to the project construction and operations; and a table that summarizes the potential environmental impacts in each issue area, the significance determination for those impacts, mitigation measures, and significance after mitigation.

Chapter 1, Introduction: provides a description of the purpose, scope, and process of the EIR, and a description of the organization of the EIR.

Chapter 2, Project Description: provides a description of the proposed project. A summary of the campus history and background are provided. Project purpose, need, and objectives are identified and information on the proposed project characteristics, including individual near-, mid-, and long-term projects, is provided. This chapter also includes a description of the intended uses of the EIR and public agency actions related to the proposed project.

Chapter 3, Environmental Setting, Impacts, and Mitigation Measures: analyzes the potential environmental effects of implementing the proposed project under each of the environmental issue areas. Each environmental issue area includes a discussion of the regulatory requirements, existing environmental setting, methodology and approach of the analysis, thresholds of significance, impact analysis, mitigation measures, level of significance after mitigation, and cumulative impacts.

Chapter 4, Other CEQA Considerations: presents the other mandatory CEQA sections, including significant unavoidable impacts, significant and irreversible environmental changes, and growth-inducing impacts.

Chapter 5, Alternatives: describes and evaluates the comparative merits of a reasonable range of project alternatives that would feasibly attain most of the basic objectives of the proposed project and avoid or substantially lessen potentially significant project-related impacts. This chapter also describes the analysis and rationale for selecting the range of alternatives discussed in the EIR and identifies the alternatives considered by CSULB that were rejected from further detailed analysis during the planning process. Chapter 5 also includes a discussion of the environmental effects of the No Project Alternative and identifies the environmentally superior alternative.

Chapter 6, List of Preparers and Persons Consulted: identifies those persons responsible for the preparation of this EIR.

Chapter 7, References: provides a bibliography of reference materials used in the preparation of this EIR.

CHAPTER 2
PROJECT DESCRIPTION

2.1 Overview of the Project

Each of the 23 universities within the California State University (CSU) system is required by the CSU Board of Trustees to prepare and periodically update a physical Master Plan. The Master Plan is intended to guide the physical campus development necessary to support the needs of the current student, faculty, and staff campus populations as well as projected student enrollment and campus population growth, which serves as the basis for determining long-term academic, administrative, student support, student housing, and athletic and recreational program space needs, in accordance with approved educational policies and objectives.[1]

California State University, Long Beach (CSULB) is one of the largest universities in the State by enrollment and continues to grow, often receiving the most undergraduate applications of any CSU. It also enrolls one of the largest graduate student populations within the CSU system and the state of California. CSULB is proposing a comprehensive update of the current campus Master Plan, last updated in 2008, to accommodate enrollment growth, a campus population, and physical development of the campus through the horizon year 2035 (Master Plan Update, proposed project, or project). The Master Plan Update focuses on optimizing the existing physical assets of the campus, enhancing the efficiency of facilities throughout the campus, and evolving the existing buildings and programs to accommodate future university needs. The "project" that is analyzed in this EIR includes specific development projects identified in the Master Plan Update that are expected to be developed in the near-term (2-5 years), mid-term (6-10 years), and long-term (11 years or more).

This chapter presents a detailed description of the proposed Master Plan Update, including a description of the project location and setting; campus history and background; campus population projections; the project purpose, need, and objectives; the Master Plan Update characteristics; intended uses of the EIR, and a listing of the permits and approvals that would likely be required to implement the Master Plan Update.

2.2 Project Location and Setting

CSULB is located within the governmental jurisdictional boundary of the City of Long Beach, in southern Los Angeles County, California. The City of Long Beach is bordered by the cities of Paramount and Lakewood to the north; the Pacific Ocean to the south; the cities of Hawaiian Gardens, Cypress, and Los Alamitos, the unincorporated community of Rossmoor, and the city of Seal Beach in Orange County to the east; and the cities of Los Angeles, Carson, and Compton to the west. CSULB consists of two properties: the CSULB main campus and the Beachside Village property, discussed further below. Figure 2-1 shows the regional location of the CSULB main campus and the Beachside Village property.

[1] The California State University, 2020, PolicyStat, Section II: Physical Master Plan and Off-Campus Centers, Section 9007, Development of Physical Master Plan, available at: https://calstate.policystat.com/policy/8837634/latest#autoid-dgx6z, accessed April 1, 2022.

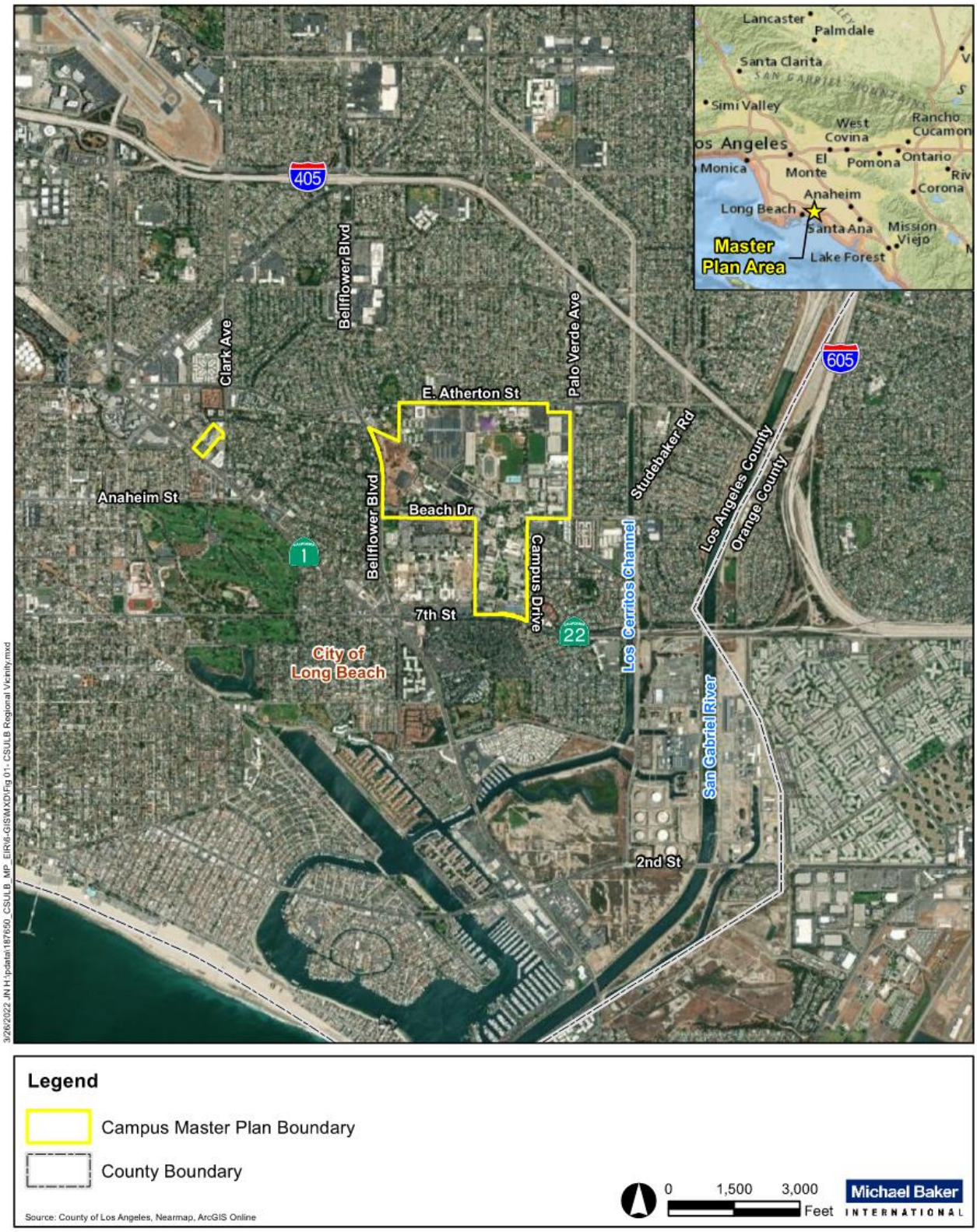

Figure 2-1: Regional Location Map

2.2.1 Existing Conditions

The CSULB main campus encompasses 322 acres and is generally bounded by East Atherton Street on the north, East 7th Street on the south, Palo Verde Avenue on the east, and Bellflower Boulevard on the west, as shown in Figure 2-2. Primary vehicular access to the campus is via Determination Drive[2] and Merriam Way from East Atherton Street; State University Drive from Palo Verde Avenue; West Campus Drive and East Campus Drive from East 7th Street; and Beach Drive from Bellflower Boulevard. Interstate 405 runs east-west north of the campus and provides regional access to the campus via access ramps at Palo Verde Avenue and Bellflower Boulevard.

State Route 22 provides direct access to East 7th Street just southeast of the campus. Interstate 605 terminates at Interstate 405 and State Route 22, approximately one mile east of the campus. The majority of the university's uses are located on the CSULB main campus, which comprises 84 buildings housing eight colleges and totaling approximately 5.8 million gross square feet of buildings. The CSULB main campus hosts an assemblage of mid-century modern architecture, site and landscape features, and a collection of outdoor sculptures and public art.

Main Campus Layout

The southern section of the campus hosts most of the university's academic facilities, with seven out of the eight colleges located here. This concentration of academic buildings forms the academic core of the campus and surrounds a traditional campus quadrangle. Additionally, a majority of student support facilities, including the University Library, University Student Union (USU), Cafeteria, Bookstore, and Shakarian Student Success Center Building, are located within the southern section of the campus.

The central campus has a mix of programmatic functions. It contains the main Administration Building-Brotman Hall, the College of Business, the College of Health and Human Services' Kinesiology Building, and other student support facilities such as Student Health Services and Counseling. The Friendship Walk, a terraced pedestrian corridor, is located along an east-west axis of the central campus. Most of the campus's early growth took place in its southern and central sections.

The eastern section of the campus contains a mix of facilities including the College of Engineering, Student Recreation and Wellness Center, and Beach Building Services. The eastern section also includes the University Police building, two parking structures, and surface parking.

Many public-facing programs are located in the northern section of the campus. Athletics and recreation are concentrated in this section of campus, including the George H. Allen Field, Aquatics Center, and recreation and baseball fields. The landmark 18-story Walter Pyramid is also located in the northern section of campus. North of the athletic fields is a small collection of facilities, including the Carpenter Performing Arts Center and the College of the Arts Music and Dance departments, which are both geographically disconnected from the rest of the campus. This geographical disconnect is due to the notable elevation difference between the northern and southern sections of campus, ranging from approximately 13 feet above mean sea level in the north to approximately 118 feet above mean sea level in the south.

[2] Formerly known as Earl Warren Drive.

Figure 2-2: Project Location Map

Student housing, commons and dining, and student parking facilities are concentrated in the western section of the campus. This section also includes a small, concentrated area of College of Health and Human Services academic buildings. Currently, there are a total of 3,008 student beds in the Parkside Village, Hillside Village, and Beachside Village (described below) residential communities.

Landscape and Open Space

The campus's park-like landscape and open space areas contribute to the campus's identity and are expressed throughout the campus in the form of quadrangles, plazas, courtyards, edges, corridors, and recreation fields. Bouton Creek Channel, a Los Angeles County Flood Control District channel, runs diagonally and in a northwest/southeast orientation across the campus. Within the western section of campus is the campus's one-acre Earl Burns Miller Japanese Garden, which combines typical elements of Japanese garden design within the context of southern California. Additionally, the campus currently includes over 6,800 trees representing 183 unique species.

Restrictive Covenant - Puvungna

The undeveloped land on the northwest border of the CSULB main campus, bounded by Bouton Creek Channel to the north, Beach Drive to the south, Determination Drive to the east, and North Bellflower Boulevard to the west, is a part of the National Register-listed Puvunga Indian Villages Sites Archaeological District and is listed in the Native American Heritage Commission's Sacred Lands Inventory, in recognition of its historic, cultural, and religious significance as a Native American burial and ceremonial site. A portion of this area holds significance for several California Native American tribal groups and is actively used for tribal ceremonies and gatherings. A restrictive covenant prohibiting development has been established on a large portion of this site and it is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management.

Circulation and Parking

Primary vehicular access to the campus is via Determination Drive and Merriam Way from East Atherton Street; State University Drive from Palo Verde Avenue; West Campus Drive and East Campus Drive from East 7th Street; and Beach Drive from Bellflower Boulevard. Additional vehicle entrances are located at various parking lot driveways. Major internal roadways are Beach Drive, Determination Drive, and Merriam Way. Several smaller campus roadways that provide internal campus access are West Campus Drive, East Campus Drive, and Deukmejian Way. There is a total of 14,089 parking spaces on campus, most of which is concentrated at the northern end.

Pedestrian and bicycle pathways provide for non-motorized movement throughout the interior of the campus. Primary pedestrian entrances to campus, characterized by wide sidewalks and wayfinding signage are located at Beach Drive/West Campus Drive and State University Drive/East Campus Drive. The southern section of campus is at a higher elevation than campus without clear or direct pathways to connect the two areas of campus, often necessitating walking uphill, using stairs, or locating indoor elevators.

Beach Drive, West Campus Drive, East Campus Drive and State University Drive are all Class II or Class III bicycle facilities. There is one designated bicycle path that runs between the athletic

track field and the Pyramid Parking structure. This bicycle path connects to the all-wheel path[3] in the northern section of campus; however, there is no direct connection from the northern section of campus to the all-wheel path in the southern section of campus.

Beachside Village

Beachside Village, a CSU-owned student housing complex, encompasses approximately 5 acres and is located approximately 0.6 miles west of the CSULB main campus. The Beachside Village property is bounded by multi-family residential uses to the west and northwest, commercial uses to the north, east, and southeast, and California State Route 1 (i.e., Pacific Coast Highway) to the south and southwest. CSULB acquired the site of the former Brooks College in 2007. After a series of renovations and new construction, CSULB students occupied the newly renovated student housing buildings in 2010. The site currently comprises two three-story residence halls housing 616 beds, a dining hall, and recreational amenities.

2.2.2 Surrounding Setting

The CSULB main campus is located in an urban and built-up area in the City of Long Beach and is generally surrounded by low-density residential neighborhoods to the north, south, east, and west. North of the campus across Atherton Street is the Los Altos neighborhood of the City of Long Beach, which is lined with single-family residences between Palo Verde Avenue and Bellflower Boulevard, interspersed with Minnie Gant Elementary School located west of Fanwood Avenue, and Whaley Park (a public City park) located further west. Neighborhood-serving retail and commercial uses are located adjacent to the northwest corner of the campus at the intersection of Atherton Street and Bellflower Boulevard, including a dental office, wellness centers, restaurants, church, and City-managed Whaley Park Community Center. Further west, northwest of the campus, is the southwestern extent of the Los Altos neighborhood, which consists of single-family residences.

Adjacent to the northeast section of the CSULB main campus, at the intersection of Atherton Street and Palo Verde Avenue, are the City of Long Beach Fire Department Station 22 and neighborhood-serving retail and commercial uses, including a 7-Eleven convenience store, restaurants, and copy shop. At the northeast corner of Palo Verde Avenue and Atherton Street there is a strip mall with neighborhood-serving retail and commercial uses, including a FedEx Print and Ship Center, a barber shop and nail salon, an insurance agency, and a liquor store. The strip mall is surrounded to the east and northeast by single-family residences.

Directly south of the campus, south of 7th Street, are the University Park Estates and Bixby Village residential neighborhoods, which are generally characterized by single-family residences. University Park Estates generally extends south to Loynes Drive, east to the Los Cerritos flood control channel, and west to Margo Avenue/Bixby Village Golf Course and is characterized by single-family residences. Charles F Kettering Elementary School is located in the northeast corner of this neighborhood, and the Channel View Park, maintained by the City of Long Beach Department of Parks, Recreation, and Marine, runs along the eastern extent of the neighborhood adjacent to the Los Cerritos flood control channel. Directly west of University Park Estates is the Bixby Village neighborhood, which generally extends south to Loynes Drive, east to Margo Avenue, and west to Pacific Coast Highway. Single-family residences predominantly occur in the northern portion of the neighborhood northeast of Bixby Village Drive. Two large multi-family apartment complexes are located in the western portion of the neighborhood between Bixby

[3] The term “all-wheel path” refers to a pathway that is accessible to bicycles, scooters, skates, and skateboards, as well as pedestrians, but is closed to automobiles.

Village Drive and Pacific Coast Highway. The northwestern portion of Bixby Village, located between 7th Street, Pacific Coast Highway, Channel Drive, and Bellflower Boulevard, is developed with a commercial retail center consisting of a Target department store, CVS pharmacy, Chevron gas station, several restaurants, and other neighborhood-serving retail uses. The Bixby Village Golf Course is an approximately 30-acre, public, 9-hole golf course located in the southern portion of Bixby Village. Further south, south of the University Park Estates and Bixby Village neighborhoods is the Belmond Shores Mobile Estates, a mobile home park and the southern outlet of the Los Cerritos flood control Channel into Alamitos Bay which flows to the Pacific Ocean approximately 2.5 miles south of the campus.

East of the CSULB main campus is the southeastern extent of the Los Altos residential neighborhood, which is bounded by Atherton Street on the north, Anaheim Road on the south, the San Gabriel River Channel on the east, and Palo Verde Avenue on the west. This area is primarily developed with single-family residences. A Shell gas station, The Church of Jesus Christ of Latter-Day Saints, and the Tincher Preparatory School, which hosts both elementary and middle school students, are located along Atherton Street. The Los Cerritos flood control channel runs north-south through this portion of the Los Altos neighborhood, approximately 1,200 feet east of the campus. Further east is the San Gabriel River channel and the I-405/I-605 interchange.

Directly southeast of the campus, at the southeast corner of State University Drive and east of East Campus Drive, is the CSULB 49er Foundation building. This building is affiliated with CSULB but is located outside of the campus boundary on a leased parcel. The Bixby Hill neighborhood is adjacent to the building to the east and southeast, and is bounded by Anaheim Road on the north, 7th Street on the south, the Los Cerritos Flood Control Channel on the east, and East Campus Drive on the west. The Bixby Hill neighborhood is bisected by the eastern extent of Bouton Creek Channel. North of the channel are two multifamily residential apartment buildings and the Sato Academy of Math & Science, a public high school along Anaheim Road. South of the channel is primarily characterized by single-family residences, with two multi-family residential complexes located in the southwestern corner of the neighborhood near the intersection of East Campus Drive and 7th Street. In the center of Bixby Hill is the Rancho Los Alamitos Historic Ranch and Gardens.

Located adjacent to the southwestern campus boundary is the 100-acre Veterans Affairs Medical Center complex, which is bounded by Beach Drive on the north, 7th Street on the south, West Campus Drive on the east, and Bellflower Boulevard to the west. This medical complex is under the jurisdiction of the U.S. Department of Veterans Affairs and offers emergency, inpatient, outpatient, and extended care services for veterans throughout its facilities, which include a hospital, pharmacy, specialty clinics, veterans support services, and several other ancillary facilities.

West of the CSULB main campus is the Park Estates neighborhood, which is bounded by Atherton Street on the north, 7th Street and Pacific Coast Highway on the south, Bellflower Boulevard on the east, and Clark Avenue on the west. This neighborhood is primarily characterized by single-family residences. Commercial, retail, and institutional uses are located in the northern portion of the neighborhood along Atherton Street and in the southern portion of the neighborhood along Pacific Coast Highway. These uses include neighborhood-serving restaurants and retail uses, Edgewater Preschool, the Unitarian Universalist Church of Long Beach, and an ARCO gas station. Additionally, the Bouton Creek Channel cuts through the northern portion of Park Estates, and Bouton Creek Park, which is a passive 0.78-acre park maintained by the City of Long Beach Department of Parks, Recreation, and Marine, is located along Atherton Street.

2.3 University History and Background

CSULB, initially known as the Los Angeles-Orange County State College, was founded by Governor Earl Warren in September 1949. At the time, a site had not been selected for the new college and the institution lacked permanent facilities. In June 1950, the City of Long Beach authorized the City Council to purchase a 320-acre tract of land, which was deeded to the State to be the future home of CSULB. From then to 1953, CSULB's first master plan was developed, which laid the groundwork for the physical form of CSULB as it is known today. In 1955, the first permanent buildings were occupied after two years of construction, and in 1959, the first campus dormitories were completed. In response to the growing student population, the next Master Plan was adopted in 1963 with additional revisions occurring between 1965 and 2008. In 1972, the CSU Board of Trustees elevated the school to university status.

Construction of the first permanent buildings began after approval of noted Long Beach architect Hugh Gibbs' master plan in 1953, with several completed in 1955 (refer to Appendix E of this Draft EIR). While a few of the early buildings were designed by Gibbs himself, most were designed by staff architects employed by the State Division of Architecture, using standardized designs that were replicated across the CSU system as a way of keeping construction costs down (Appendix E of this Draft EIR). In 1961, the CSU Board of Trustees decided to discontinue using the State Division of Architecture and instead recruit private practice architects to oversee matters related to design and construction. In 1962, the noted local architectural firm of Killingsworth-Brady-Smith and Associates was retained to serve as consulting campus architect – a role that the firm, and specifically Killingsworth continuously filled until he eventually retired in 2001 (Appendix E of this Draft EIR). The master plan that Killingsworth developed for the CSULB campus was predicated on his approach to Mid-Century Modern architecture and planning, and incorporated design features that characterized the dialect of postwar Modernism that was applied in Southern California – and specifically in and around Long Beach – at this time.

2.3.1 2008 Master Plan

The current adopted master plan for the CSULB campus is the 2008 Master Plan, which was intended to guide development of the campus through the horizon year 2020. The 2008 Master Plan provided a framework for land use, open space, development, and circulation to accommodate the projected population at the campus and was designed to provide new in-fill facilities in the interior of the campus and replace existing aged, obsolete, and inefficient facilities. Components of the 2008 Master Plan included completion of the Hall of Science, renovation of Peterson Hall 2, additional student housing at the Parkside and Hillside Villages, and additional parking structures. Several of the projects from the 2008 Master Plan have been implemented either as proposed or with modifications and subsequently approved through preparation of addenda to the 2008 Master Plan EIR.

Additionally, several projects are currently in progress on the campus that have been cleared through additional environmental documentation. These include the Peterson Hall 1 replacement building, Faculty Office 2 renovation, and Liberal Arts 1 renovation. The 2008 Campus Master Plan Map was most recently revised in July 2020. The 2008 Campus Master Plan Map legend and map are shown in Figure 2-3 below.

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, July 2020

1. E. James Brotman Hall
2. Student Health Services
3. Nursing
4. Anna W. Ngai Alumni Center
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
30. *Peterson Hall 1 Replacement Building*
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. Shakarian Student Success Cent
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
62S. Parkside Office
62T. Hillside Utility
62U. Hillside Dining Hall
62V. Hillside Office
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
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*
99. *Liberal Arts Replacement Building*
100. *Student Services Addition*
101. Student Housing, Phase 1
101A. Student Housing, Phase 1
101B. *Student Housing, Phase 1*
101C. *Student Housing, Phase 1*
102A. *Student Housing, Phase 2*
102B. *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)

Figure 2-3: Existing Campus Master Plan (1 of 2)

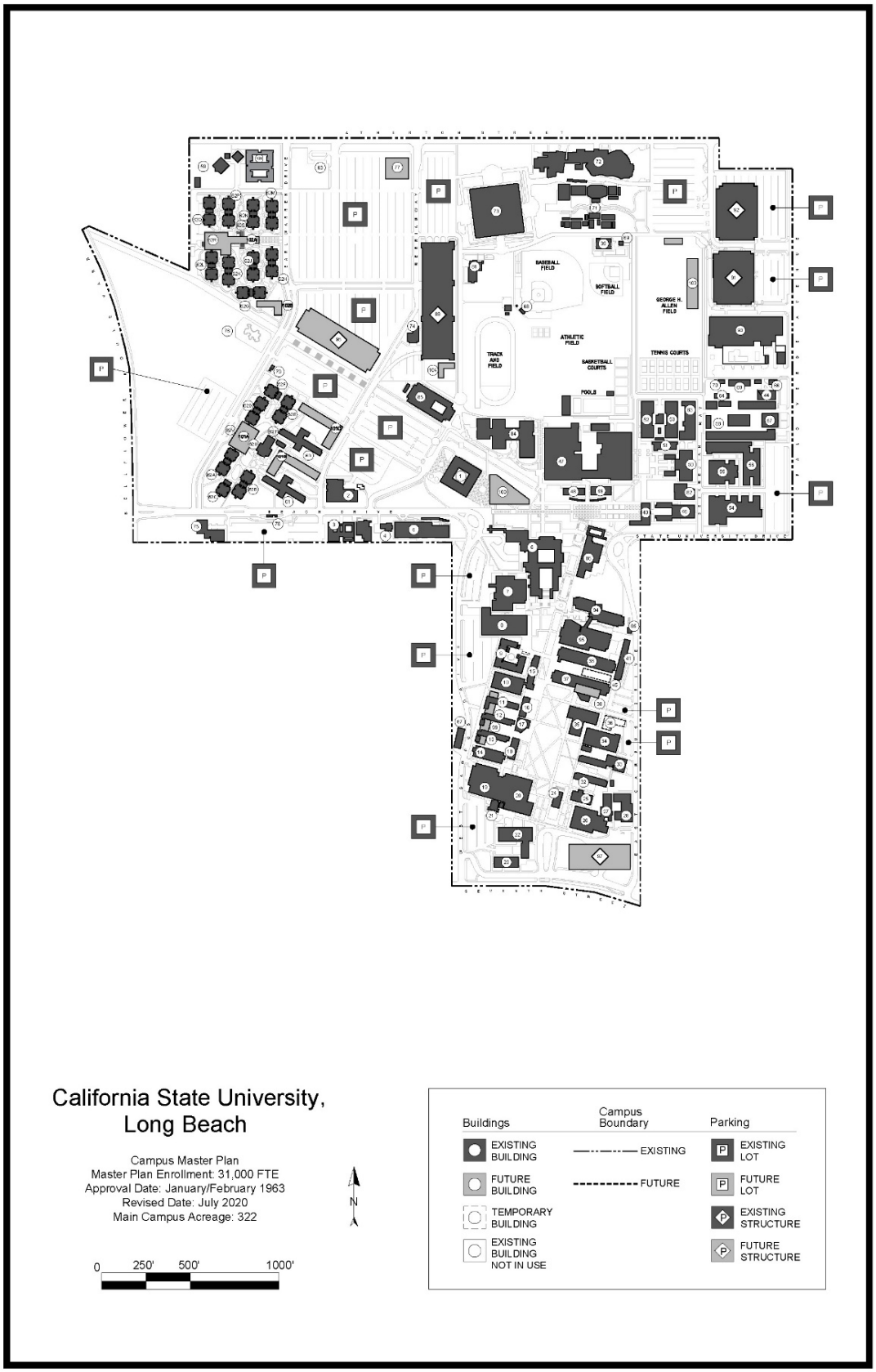

Figure 2-3: Existing Campus Master Plan (2 of 2)

2.4 Project Purpose, Need, and Objectives

2.4.1 Purpose and Need

The CSU Board of Trustees requires every CSU university to have a master plan showing existing and proposed facilities necessary to accommodate a specified enrollment by an estimated planning horizon. The campus master plan reflects the physical requirements of academic programs and auxiliary activities during the planning period, and the CSU Board of Trustees recommend periodic re-evaluation of campus master plans in acknowledgment of master planning as a continuous process.

The original architectural and landscape guidelines put forth in the 1962 Master Plan continue to influence new designs and projects on campus. The guidelines outlined relationships between buildings and open spaces, pedestrian circulation patterns, and entrances, with primary building frontages being oriented toward the central campus. The CSULB main campus experienced most of its growth in the 1950s and 1960s and many of the facilities now have outdated infrastructure leading to operational inefficiencies, such as plumbing deficiencies, heating, ventilation, and air conditioning (HVAC) costs, and poor accessibility and circulation. Over one-half of the existing building inventory on campus have significant or severe deterioration and critical deferred maintenance issues. In addition, older facilities display generally inept functionality in terms of operation, maintenance, and user comfort. Many of the interior spaces within these older buildings have inadequate layouts and proportions.

The purpose of the Master Plan Update is to optimize the existing physical assets of the campus, enhance the efficiency of facilities throughout the campus, and evolve the existing buildings and programs to accommodate future university needs. The Master Plan Update supports and advances the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035. As previously discussed, master plans are intended to implement proposed improvements to accommodate future change and growth in enrollment through buildout of the Master Plan. Master Plans are based on Full-Time-Equivalent Student (FTES) enrollment projections prepared by each university in consultation with the CSU Office of the Chancellor.[4,5] CSULB has recently established a goal of increasing online enrollment to allow the university to serve a larger student population and expand the programs and services it can offer, making classes more accessible for students and reducing campus trips.

2.4.2 Project Objectives

The following objectives have been identified to support the underlying purpose of the Master Plan Update to support and advance the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035:

[4] The California State University, PolicyStat, Section VII: Five-Year Capital Improvement Program Procedures and Formats for Capital Outlay Submission, Section 9100.1, Basis for Major Capital Outlay and Five-Year Capital Improvement Program Submissions: 3. Full-Time Equivalent Student Enrollment Allocations, available at: https://calstate.policystat.com/policy/6657509/latest/, accessed February 15, 2022.

[5] See Section 2.5.2, Student Enrollment at CSULB, of this chapter for further discussion of FTES and enrollment.

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth to approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

2. Optimize the existing campus space and minimize net new gross square footage.

3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.

4. Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces.

5. Support an expanded residential environment by constructing new or replacement buildings or renovating existing student housing villages to:

    - Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention;

    - Include a more diverse mix of housing typologies for students (pod configurations, suites, and apartments);

    - Provide high quality and affordable options with an equitable mix of offerings for students; and

    - Include common spaces, active outdoor spaces, and space for student services.

6. Strengthen the physical connection between the two housing villages on the CSULB main campus.

7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.

8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.

9. Provide new faculty and staff housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.

10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.

11. Provide defined campus gateways and edges with increased wayfinding and signage to highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.

12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

2.5 Campus Population Projections

2.5.1 Policies Governing Enrollment Growth

Title 3 of the California Education Code governs Postsecondary Education within the state. Code Section 66011(a) of the California Education Code states that "all resident applicants to California institutions of public higher education, who are determined to be qualified by law or by admission standards established by the respective governing boards, should be admitted to either (1) a district of the California Community Colleges, in accordance with Section 76000, (2) the California State University, or (3) the University of California." Section 66202.5 of the Education Code states, "The University of California and the California State University are expected to plan that adequate spaces are available to accommodate all California resident students who are eligible and likely to apply to attend an appropriate place within the system."

In 1960, the California Master Plan for Higher Education was approved by The Regents and the State Board of Education (which at that time governed the California State University and California Community Colleges). The California Master Plan guarantees access to the CSU university for the top one-third (33.3 percent) of the state's public high school graduates and qualified transfer students from California community colleges. Together, the California Master Plan for Higher Education and Title 3 of the California Education Code dictate enrollment levels for the CSU system.

The California budget is a primary factor that determines annual enrollment levels at CSU universities. The CSU Board of Trustees require each university to have a master plan, showing existing and anticipated facilities necessary to accommodate a specified enrollment at an estimated target date or planning horizon, in accordance with approved educational policies and objectives. Each year, the CSU submits a request for funding for consideration by the state legislature to support planned enrollment growth as part of the annual budget process. The annual state budget identifies anticipated enrollment growth systemwide for the CSU each year; according to the 2019-2020 California State Budget, the state expects the CSU to accommodate growth in enrollment of 10,000 FTES during that period.[6]

Following negotiation, the CSU allocates enrollment growth funding for California residents according to an enrollment target for each of the 23 CSU universities. As noted above, the California Master Plan for Higher Education directs CSU to draw its entering freshmen from the top one-third (33.3 percent) of public high school graduates and to accept all qualified community college students. Such students are considered "eligible" for admission to the CSU system as a whole, but are not guaranteed admission to any particular university. Consistent with this direction, even during challenging budget times, the CSU has continued to offer a seat on at least one of its 23 undergraduate universities to every California resident undergraduate applicant who meets the CSU's minimum requirements. The universities are expected to manage their enrollments within a small margin of error around the target because they receive state/CSU funding only for the targeted number. In the past, when the state has experienced a financial crisis, the enrollment funding for the CSU was reduced, and universities had to reduce their enrollment until additional funding became available in subsequent years. During the past 30 years, enrollment reductions have occurred four times.

[6] California Department of Finance, 2019, *California State Budget 2019-20*.

2.5.2 Student Enrollment at CSULB

As previously discussed, Master Plans are intended to identify, describe, and provide a framework to implement proposed improvements to accommodate a projected change (generally an increase) in student enrollment and corresponding campus population (which includes student, faculty, and staff) through an identified planning horizon year. The projections serve as the basis for determining a campus's long-term space and infrastructure needs. Master Plans are based on annual academic year (AY) enrollment projections prepared by each university as directed by the CSU Office of the Chancellor, which consults with the State of California to anticipate systemwide enrollment growth and associated funding in accordance with the CSU's educational mission according to California's Education Code.[7] Enrollment projections are for planning purposes to establish the CSU's physical development program, and do not mandate or commit CSU to any specific level of student enrollment, overall growth, or set a maximum population limit that a campus can physically support.

In general, enrollment growth at each university is driven by a directive from the CSU to absorb a reasonable proportion of the enrollment increases across the CSU system as a whole. Enrollment growth is also affected by university -specific factors such as physical capacity, availability of and interest in specific academic programs, and the individual decisions of potential students. CSULB has recently established a goal of increasing online programs and services in order to serve a defined percentage of its future enrollment, making it more convenient for students to attend virtual classes and reducing trips to campus. The Master Plan Update's enrollment projection and accompanying development program would allow CSULB to balance growth with physical and financial resource constraints such as limited land resources to accommodate new facilities, a large number of outdated facilities that have critical deferred maintenance, and the need for student housing, driven by high demand and limited availability and affordability in the City of Long Beach and surrounding communities.

Student enrollment at CSULB is measured using "full-time-equivalent students" or "FTES."[8] FTES aids the measurement of facilities utilization and need for additional instructional space by providing information on student course loads and scheduling of classes. Because CSULB is an urban commuter campus, students at CSULB can be part-time or full-time and have different attendance patterns. Thus, one student who takes 15 units is considered one FTES. For the purposes of this EIR, FTES is the most appropriate measure of student population at the campus, as opposed to headcount, because it provides a more accurate representation of the population that will be on-campus at a given time. Headcount totals assume that every enrolled student is on-campus full-time, which can lead to an overstatement of the campus's student population and, consequently, the associated environmental impacts. Potential impacts associated with the on-campus population (i.e., vehicle miles traveled, demand for water or public resources, solid waste generation), are analyzed proportionate to the amount of time any one student or faculty member may be on campus based on their unit loads, or staff based on their responsibilities.

The COVID-19 pandemic (beginning March 2020) has led to increases in telework and

[7] The California State University, PolicyStat, Section VII: Five-Year Capital Improvement Program Procedures and Formats for Capital Outlay Submission, Section 9100.1, Basis for Major Capital Outlay and Five-Year Capital Improvement Program Submissions: 3. Full-Time Equivalent Student Enrollment Allocations, available at: https://calstate.policystat.com/policy/6657509/latest/, accessed February 15, 2022.

[8] Full-time-equivalent student (FTES) is the unit of measurement used to convert class load to student enrollment. At CSULB, one undergraduate FTES is equal to 15 units. Thus, one undergraduate FTES is equal to one undergraduate student enrolled in 15 units or three undergraduate students each enrolled in 5 units. A related unit of measure is "headcount." In the case of one student taking 15 units, the headcount is 1; in the case of three students collectively taking 15 units, the headcount is 3.

remote/online learning, that has affected the number of people on campus or traveling to and from campus. The long-term implications of the COVID-19 pandemic on remote learning and telework are still evolving, and thus, the net effect of the COVID-19 pandemic on CSULB's development and operations cannot be predicted at this time. Accordingly, the impact analysis in this EIR assumes that overall behavior within the Master Plan Update horizon year of 2035 would be similar to conditions prior to the start of the COVID-19 pandemic. Therefore, the 2019-2020 AY data is being used as it is the most recent year of pre-pandemic in-person campus operations.

Table 2-1, Existing and Anticipated Student Enrollment, depicts the breakdown of on- and off-campus student enrollment under existing conditions and at the Master Plan Update 2035 horizon year. As shown therein, CSULB enrolled approximately 31,000[9] FTES in AY 2019-2020, including approximately 29,000 FTES on-campus and 2,000 FTES receiving instruction remotely and pursuing educational experience off-campus.

The Master Plan Update makes reasonable assumptions about projected student enrollment through the 2035 horizon year and assumes annual compounded growth of one percent (1%) throughout the life of the Master Plan Update, reflecting typical annual growth per the CSU's Office of the Chancellor, which consults with the state legislature regarding the funding needed to support enrollment growth.

Based on these assumptions, the Master Plan Update projects enrollment by the 2035 horizon year of approximately 36,000 FTES. Supported by historical data for the campus, enrollment projections for the Master Plan Update assume that approximately 7.44 percent of the total enrollment in 2035, or 3,000 FTES, would be accommodated by virtual learning modes or not otherwise accommodated on campus, such as through clinical nursing or student teaching supervision. Additional information about the assumptions used for the projected enrollment is provided in Appendix B.

Table 2-1: Existing and Anticipated Student Enrollment

Full-Time-Equivalent Students (FTES)	Academic Year 2019-2020	Master Plan Update Horizon Year 2035	Change (+/-)
On-Campus	28,876	33,334	+4,458
Off-Campus	2,321	2,679	+358
Total	31,197	36,013	+4,816

Note: The enrollment numbers shown in this table account for a slightly higher number of on-campus students than was included in the Notice of Preparation for the purposes of a more conservative analysis. The total enrollment remains the same.

The Master Plan Update uses the projected future student enrollment and total campus population through the 2035 horizon year to establish the development program and space planning requirements to support that projected future campus population. The projected campus population and planned development under the Master Plan Update are used in this Draft EIR for the analysis of the potential physical environmental impacts resulting from implementation of the proposed Master Plan Update. Implementation of the proposed Master Plan Update based on the projected campus population does not limit future student enrollment or total population at CSULB. The CSU Board of Trustees retains the discretion to update or amend the Master Plan

[9] Numbers in text are rounded to the nearest thousand.

Update and conduct additional environmental review under CEQA, as necessary, in order to increase enrollment beyond the projections in the Master Plan Update.

2.5.3 Faculty and Staff

In addition to the student population, the Master Plan Update projects the associated faculty and staff, which includes Full-Time-Equivalent (FTE) employees and auxiliary employees, that would be necessary to support students at CSULB. CSULB determines faculty and staff needs by evaluating the historical ratios of faculty to students as well as between staffing and students.

FTE employees include the following occupational groups: faculty, professional/technician, office/administrative support, service occupations, construction/maintenance/transportation, and management.[10] The total number of FTE employees excludes student employees, other intermittent or casual employees, and faculty teaching in extension, special sessions and summer sessions. Based on historical data of employee profiles from 2009 to 2019,[11] the Master Plan Update assumes that the number of FTE employees would increase proportionately with the student population at a rate of approximately 1.16 percent annually through horizon year 2035. As such, 3,918 FTE employees are projected in 2035.

Auxiliary employees on campus include those who are employed at Associated Students, Inc. (ASI), the 49er Shops, the CSULB 49er Foundation, and the CSULB Research Foundation.[12] Applying the same proportionate growth of 1.16 percent annually through horizon year 2035 as the FTE employees, it is projected that the Master Plan Update would necessitate approximately 628 auxiliary employees.

Table 2-2, Existing and Anticipated Faculty and Staff, depicts the breakdown of FTE employees and auxiliary staff under existing conditions and at the Master Plan Update 2035 horizon year. The total projected faculty and staff in horizon year 2035 is anticipated to be 4,546 people. Additional information about the assumptions used for the projected faculty and staff are detailed in Appendix B.

Table 2-2: Existing and Anticipated Faculty and Staff

	Academic Year 2019-2020	Master Plan Update Horizon Year 2035	Change (+/-)
FTE Employees	3,295	3,918	+623
Auxiliary Employees[a]	528	628	+100
Total	3,823	4,546	+723

a. In addition to faculty and staff, a limited number of contractors or vendors may be present on-campus for specific tasks or events; however, the number of contractors or vendors is negligible and does not substantially change the number of personnel on-campus.

Due to the provision of housing for faculty and staff as part of the Master Plan Update, it is anticipated that a small portion of faculty and staff would reside on campus with other members

10 The California State University, Faculty and Staff, Employee Profile, Previous Year's Reports, Employee Profile 2009-2019, available at: https://www.calstate.edu/csu-system/faculty-staff/employee-profile/Pages/past-reports.aspx, accessed June 29, 2022.

11 Ibid.

12 California State University, Long Beach, Auxiliaries, available at: https://www.csulb.edu/auxiliaries, accessed July 27, 2022.

of their household. Based on historic data of non-student residents living on the CSULB main campus, it is anticipated that an additional 285 individuals associated with faculty and staff households would also be living on-campus.

2.5.4 Campus Population

The total campus population comprises students, faculty, staff, and faculty/staff household members. In horizon year 2035, the total on-campus population is anticipated to be 38,165, which includes FTES, FTE employees, auxiliary employees, and faculty/staff household members. Table 2-3, Existing and Anticipated Total Campus Population, depicts the breakdown of total on-campus FTES, FTE employees, auxiliary employees, and faculty/staff household members under existing conditions and at the Master Plan Update 2035 horizon year.

Table 2-3: Existing and Anticipated Total Campus Population

	Academic Year 2019-2020	Master Plan Update Horizon Year 2035	Change (+/-)
Full-Time-Equivalent Students (On-Campus)	28,876	33,334	+4,458
Full-Time-Equivalent Employees	3,295	3,918	+623
Auxiliary Employees	528	628	+100
Faculty/Staff Household Members	0	285	+285
Total	32,699	38,165	+5,466

2.6 Proposed Project Characteristics

The Master Plan Update is a long-range planning document that will guide physical development at CSULB through the horizon year 2035. The Master Plan Update addresses CSULB's current and future needs, focusing less on physical growth and more on optimizing the existing physical assets of the campus.

2.6.1 Proposed Master Plan Update

The Master Plan Update establishes priority development projects to be implemented over the next decade and beyond. The primary strategies for implementing the new master plan include renovation of existing buildings (renovation), demolition and replacement of existing buildings in the same physical location (replacement), construction of new buildings (new construction), and leaving buildings in their existing location and configuration (buildings to remain). The Master Plan Update also identifies improvements to landscape and open space, sustainability and resiliency, and mobility and parking. Figure 2-4 shows the proposed Master Plan Map.

2.6.2 Campus Organization

The Master Plan Update organizes the CSULB main campus into five districts characterized by existing geography and development as well as desired connectivity, placemaking opportunities, and proposed programming. The five districts include the South District, Central District, East District, North District, and West District, as shown in Figure 2-5. A description of each district and the proposed improvements is provided below.

California State University, Long Beach

Master Plan Enrollment: 36,000 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. Anna W. Ngai Alumni Center
5. Family and Consumer Sciences
6. University Student Union
7. *Cafeteria & Bookstore*
8. *College of Education Replacement Bldg.*
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

24. McIntosh Humanities Faculty Office Building
25. Language Arts Building
26. Theatre Arts
27. University Theatre
28. University Telecommunication Center
32. Fine Arts 1
33. Fine Arts 2
31. *College of the Arts Replacement Bldg.*
35. Fine Arts 4
36. Faculty Office 4
37. College of CHHS Replacement Bldg.
38. Shakarian Student Success Center
41. Microbiology
43. College of Professional & Continuing Education
44. Electrical Substation (North)
45. Faculty Office 5
46. Social Sciences / Public Affairs
47. *Kinesiology Replacement Bldg.*
48. Health and Human Services Classrooms
49. Health and Human Services Offices
50. Vivian Engineering Center
51. *Engineering Replacement Bldg.*
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
62R. Parkside Dining Hall
62U. Hillside Dining Hall
64. Greenhouse 3
65. Electrical Substation (South)
66. Reprographics
67. Communications - Main Distribution Facility A
68. Restrooms / Storage
69. Women's Softball/Soccer Clubhouse

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
76. Earl Burns Miller Garden
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
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
101. Parkside North
102. Hillside Gateway
103 ABC Hillside North Student Housing
00. Miller House (Located Off Site)

104-110 *New Parkside Housing Village*
106 *New Faculty & Staff Housing*

23 *New 7th St. Community Outreach Facility*
75 *International House Replacement Building*

210 *Jack Rose Track/Commencement Facility*
300 Beachside Housing Village (Located Off Site

LEGEND:
Existing Facility */ Proposed Facility*

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

Figure 2-4: Proposed Master Plan Update (1 of 2)

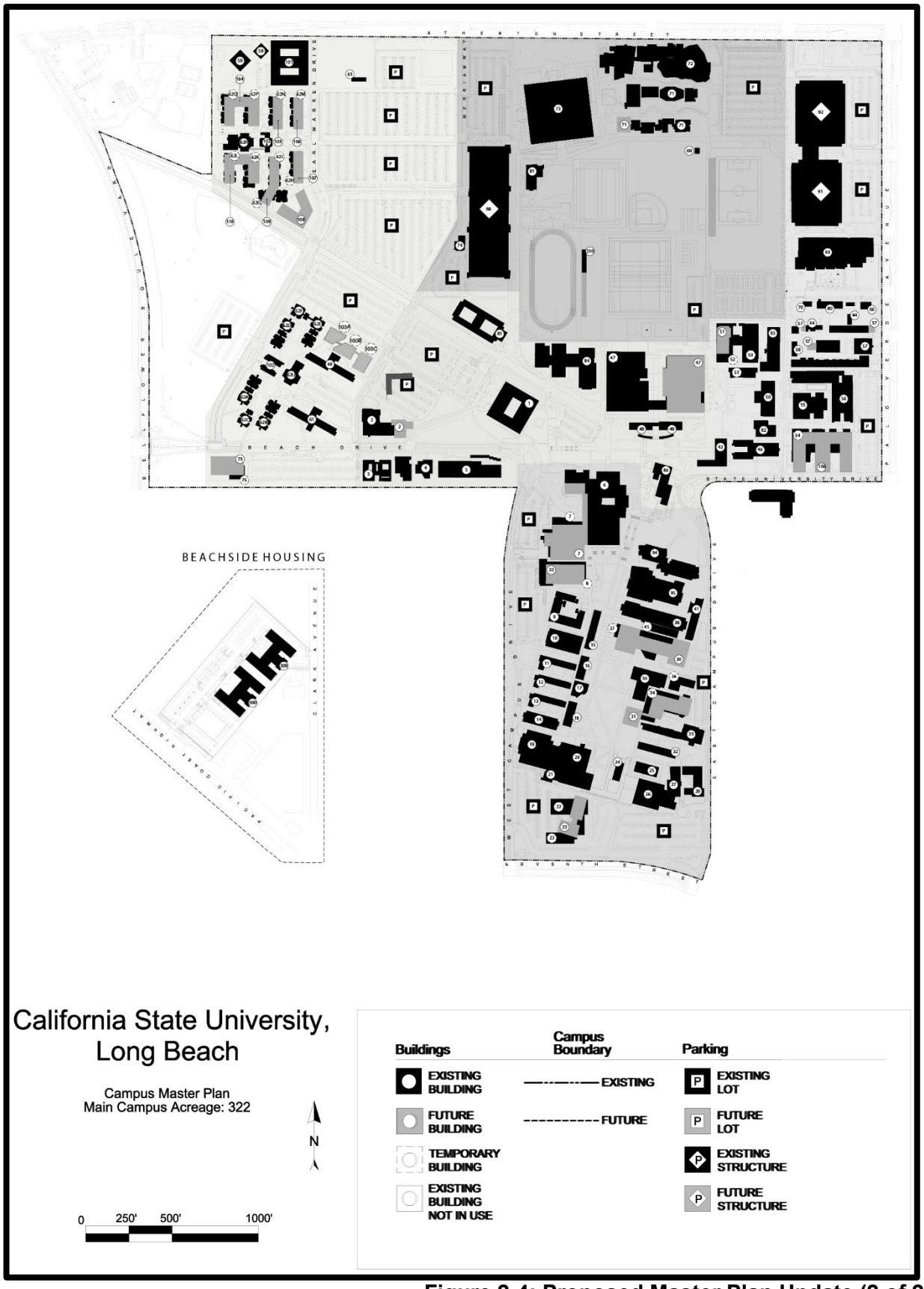

Figure 2-4: Proposed Master Plan Update (2 of 2)

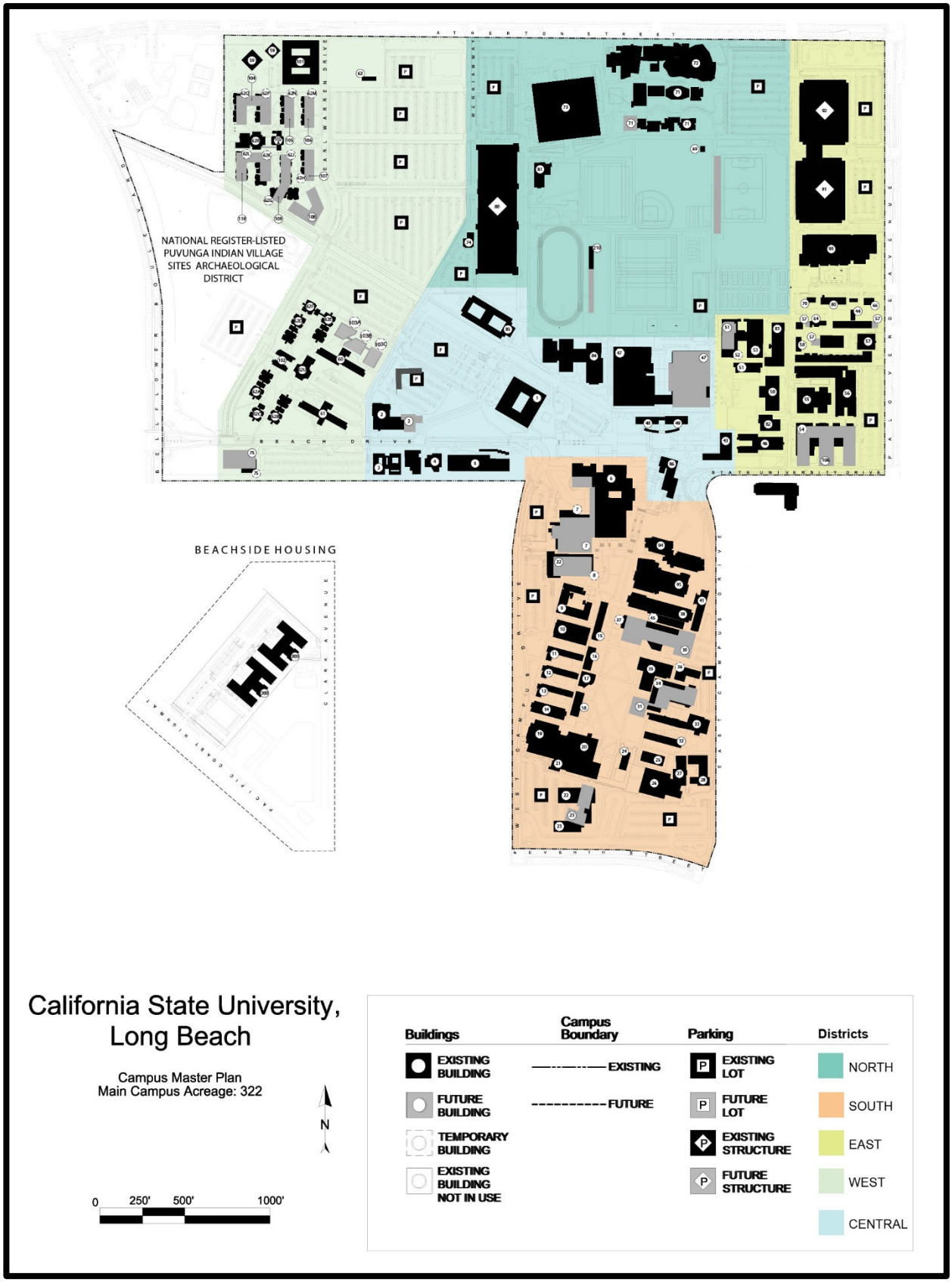

Figure 2-5: Proposed Master Plan Update with Campus Districts

South District

The South District primarily comprises the campus's academic core and is the densest area of learning and student experience. Most of the campus's academic buildings are located within the South District. Therefore, most faculty offices, study space, and instructional space are also located within the South District. In addition, seven out of the eight Colleges are located here, along with the primary student-centered buildings, including the University Student Union, Cafeteria, and Student Services Building. The South District includes some of the most iconic buildings on the campus, including the McIntosh Humanities Building, University Theatre, Psychology Building, and University Student Union. The academic buildings surround a large traditional collegiate quadrangle.

Academic uses would continue to be primarily located in the campus's South District. Improvements in the South District will focus on relocation, consolidation, and renovation of academic and student-centered programs. The McIntosh Humanities Building is the only facility in this district proposed for renovation. Replacement building projects in this district include the Bookstore, College of the Arts building, and College of Education building. Replacement buildings for the College of the Arts (e.g., COTA Fine Arts/Design Replacement Building) and College of Education are proposed to consolidate additional academic programs and functions such as studios, galleries, and hoteling and collaborative spaces and connect these to a redesigned campus quadrangle. The College of Education is currently located in two separate buildings on the CSULB main campus, with the five-story library creating a physical and visual barrier the rest of the quad. The proposed Education Replacement Building would relocate the College of Education into a single, three-story building along the campus quadrangle, bringing the programming of the college closer to the Psychology Building. Table 2-4 lists the projects in the South District and Figure 2-6 shows a focused view of the South District and the improvements proposed in this district.

Table 2-4: Projects in the South District

Map ID	Project Name	Phase
6/7	USU Renovation/Addition and Cafeteria Replacement	Near-Term
41	Microbiology Student Success Center Renovation	Near-Term
17	Lecture Hall 150-151 Renovation	Near-Term
86	Central Plant Decarbonization	Mid-Term
31	College of the Arts Replacement Building	Mid-Term
23	New 7th St. Community Outreach Facility	Mid-Term
10	Liberal Arts 5 Renovation	Mid-Term
32/33	Fine Arts 1 / 2 Renovation	Mid-Term
35	Fine Arts 4 Renovation	Mid-Term
26	Theatre Arts Renovation	Mid-Term
27	University Theatre Renovation	Mid-Term
--	Redefining the Campus Quad	Mid-Term
--	Hardfact Hill Outdoor Classroom	Long-Term
8	Education Replacement Building	Long-Term
24	McIntosh Humanities Building Renovation	Long-Term
25	Language Arts Building Renovation	Long-Term
--	Future Mobility Hub	Long-Term

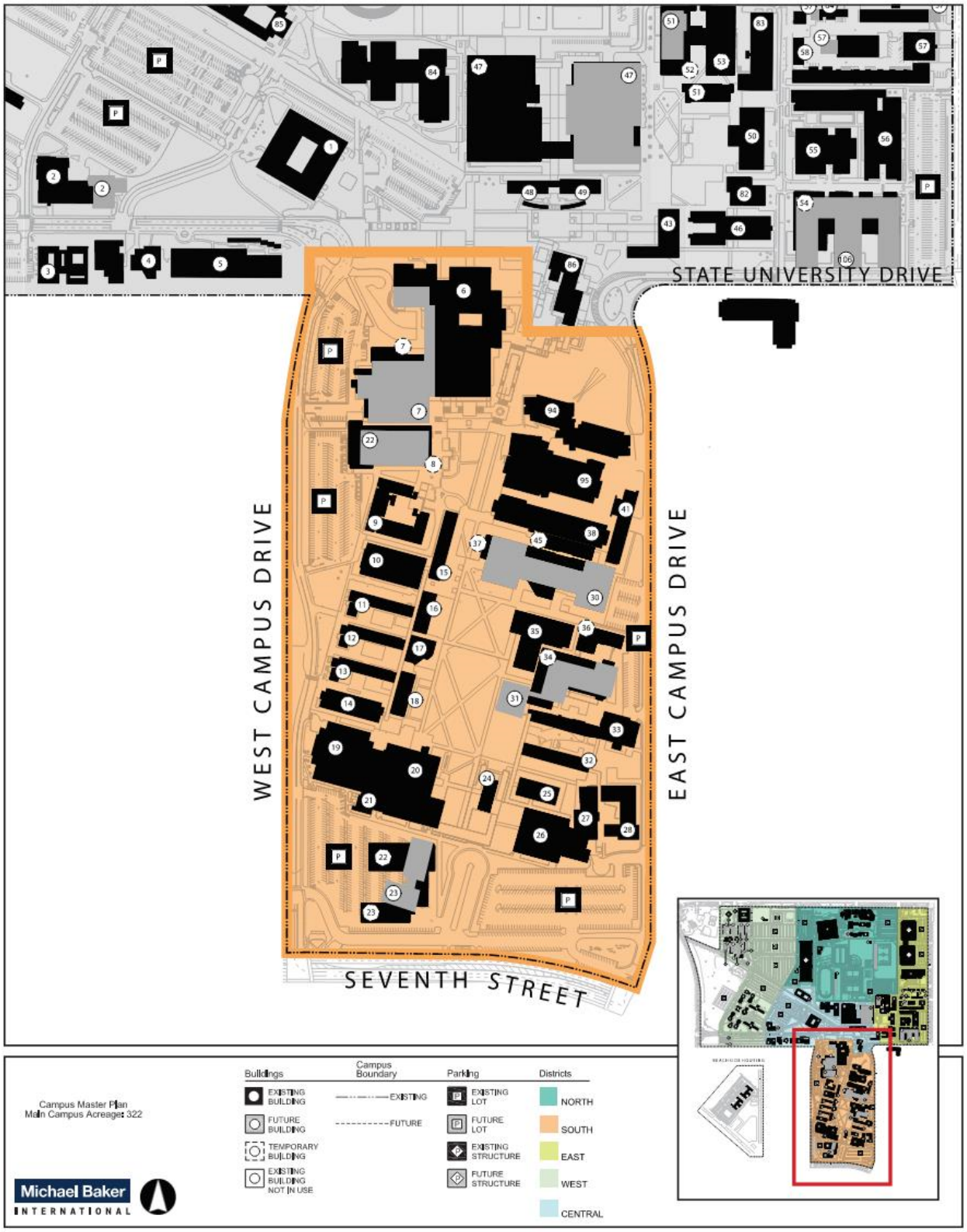

Figure 2-6: South District

Central District

The Central District contains a range of existing programming and facilities including CSULB's main Administration Building-Brotman Hall, the College of Business, College of Health and Human Services' Kinesiology Building, and student support such as Student Health Services. The recently renovated Horn Center is one of the campus's major classroom buildings with 10 new active learning classrooms, 2 large lecture halls, and the campus's largest computer lab. The Kleefeld Contemporary Art Museum was also recently renovated and occupies the western section of the Horn Center Building.

The Central District is programmed as an academic and student-focused hub within the center of campus. It is where the South District connects to north campus housing, athletics, and recreation programs. The proposed Kinesiology Replacement Building project would involve demolition of the existing Kinesiology building to remove the low-density structure and development of a new three-story replacement structure to allow for a new higher-density Kinesiology Building and new campus quadrangle directly adjacent to the Horn Center to improve pedestrian circulation. The new Kinesiology Building would provide space to consolidate various existing programs for the College of Health and Human Services, Club Sports, and Athletics. Additional improvements proposed for the Central District include renovation of the pool, addition of new open spaces such as the construction of 'Beach at the Beach', which includes beach volleyball courts and student gathering areas, creation of outdoor learning environments, and enhanced pedestrian links along Friendship Walk and the terraced stairs. Table 2-5 lists the projects in the Central District and Figure 2-7 shows a focused view of the Central District and the improvements proposed in this district.

Table 2-5: Projects in the Central District

Map ID	Project Name	Phase
2	Student Health Services Addition	Near-Term
--	Friendship Walk Stairs Revitalization	Near-Term
3	Nursing Building Renovation (Counseling and Psychological Services)	Mid-Term
--	Pedestrian/Bike Lane Improvements[a]	Mid-Term
47	Kinesiology Replacement Building and Quad	Long-Term
48/49	HHS 1/2 Renovation	Long-Term

[a.] Project is also located in the West and South Districts

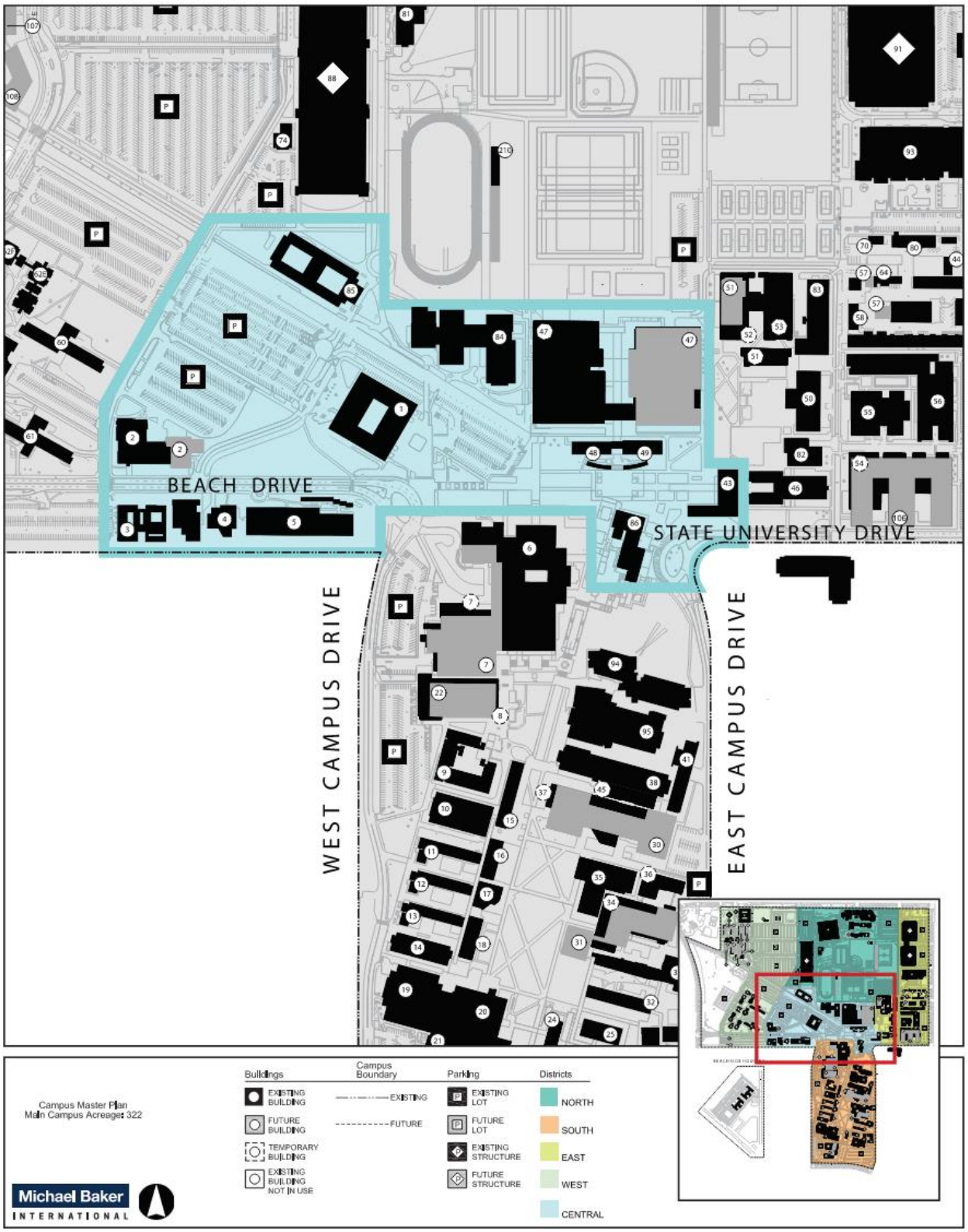

Figure 2-7: Central District

East District

The existing uses in the East District vary from academic programs, such as the College of Engineering and departments within the College of the Arts, to Beach Building Services and the Student Recreation and Wellness Center. Projects within the East District are proposed to provide an intentional connection to the Central District through improved academic facilities (e.g., College of Engineering building replacement) and new faculty and staff housing that would replace and renovate low-density, aging, and underutilized facilities. A new six-story Faculty and Staff Housing building is proposed at State University Drive and Palo Verde Drive, and would include parking, ground-level retail, enhanced pedestrian crossings, and widened sidewalks. Other locations for the Faculty and Staff Housing will be evaluated in Chapter 5, Alternatives. Additionally, connectivity to other campus districts would be supported by improvements to the pedestrian and bicycle network infrastructure. Table 2-6 lists the projects in the East District and Figure 2-8 shows a focused view of the East District and the improvements proposed in this district.

Table 2-6: Projects in the East District

Map ID	Project Name	Phase
58	Corporation Yard Renovations	Near-Term
51	Engineering Replacement Building	Near-Term
106	Faculty and Staff Housing	Mid-Term
56	Engineering Tech Renovation	Mid-Term
50	Vivian Engineering Center Renovation	Long-Term
83	Engineering Computer Science Renovation	Long-Term

Figure 2-8: East District

North District

The North District is the public "front door" to CSULB with many public-facing facilities, including most athletics venues and the performing arts center. The North District encompasses a diverse range of existing programming and facilities, including the Walter Pyramid, the Carpenter Performing Arts Center, and the Music and Dance departments. These programs are located north of a large concentration of athletics and sports fields and, therefore, are physically disconnected from many campus services and amenities.

The North District proposes to better serve and connect the programs in this area to the remainder of the campus through expanded amenities and enhanced pedestrian links. The North District would continue to support CSULB's athletics programs and College of the Arts academic programs. The District includes projects that build upon the current framework but focus on efficiently utilizing the land area such as reconfiguring and optimizing recreation fields and improving existing venues and buildings. Proposed improvements include the George Allen Field and Jack Rose Track and the Commencement Facilities. Additionally, the Walter Pyramid, one of the most recognizable campus facilities on the campus, would require renovations due to its age. Proposed renovations for the Walter Pyramid include a new roof and interior improvements such as upgrading the sound system, replacing the existing elevators, expanding concession stands, adding storage, and updating the restrooms.

Because visitors heavily access this district, key gateway and pedestrian improvements are proposed along the northern edge of the campus to improve pedestrian connectivity to other areas of the campus. Table 2-7 lists the projects in the North District and Figure 2-9 shows a focused view of the North District and the improvements proposed in this district.

Table 2-7: Projects in the North District

Map ID	Project Name	Phase
--	Aquatics Center and Pool Renovation	Near-Term
71	University Music Center Renovation/Addition	Mid-Term
73	Walter Pyramid Renovation	Mid-Term
210	Jack Rose Track/Commencement Facilities	Mid-Term
--	Baseball Field Conversion to Multi-Use Field	Mid-Term
--	Relocated Archery Field	Mid-Term
--	George Allen Field Improvements	Long-Term
--	New Recreation Field	Long-Term

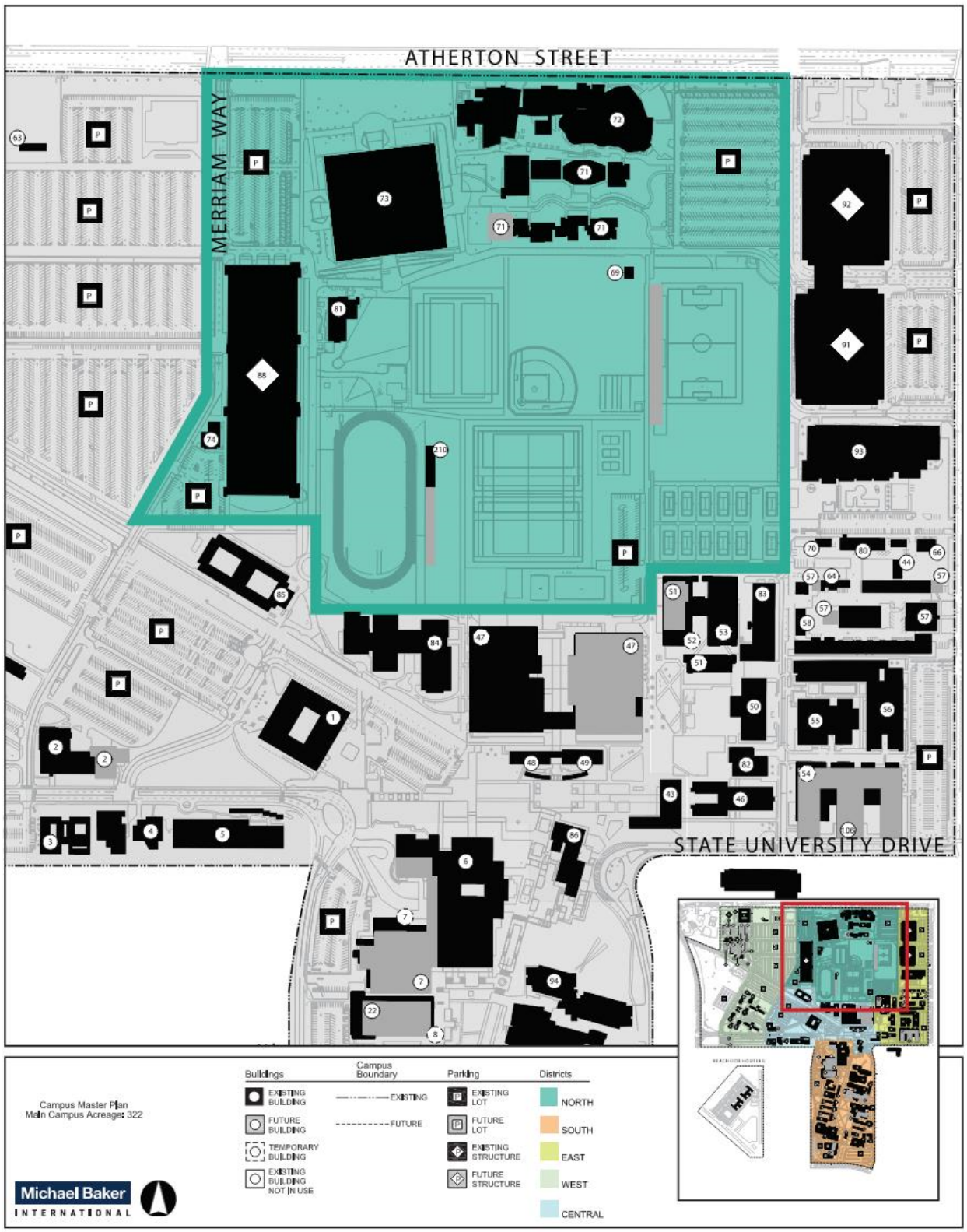

Figure 2-9: North District

West District

The West District is the established housing section of the campus and is defined by the presence of the majority of student residence halls. To support on-campus residents, the West District is also home to two dining facilities, including the Parkside Dining and the Hillside Dining halls. In addition, two primary campus vehicular entrances and a majority of the student parking facilities are located within the West District. This district also includes a small, concentrated collection of College of Health and Human Services academic buildings.

The West District serves as a starting and ending point to many students' days (for both residents and commuters). As such, proposed connectivity improvements into the core of the campus are considered critical to providing a convenient and safe experience for students.

Proposed improvements within the West District would enhance the student residential experience by expanding housing into higher-density facilities to accommodate additional beds (i.e., the new Parkside Housing Village), introducing new social and collaboration spaces, and improving pedestrian and bicycle connectivity within the district such as the planned Bouton Creek bike pathway improvement project and an enhanced Bellflower and Beach main entrance to the campus. The Bellflower Boulevard and Beach Street entrance is the primary gateway into the CSULB main campus. Proposed updates to this entrance include the installation of new landscaping and improved signage. The proposed Parkside Housing Village improvements would include demolition of the existing student residences to be replaced with seven new housing buildings configured with new pod and suite-style beds. Table 2-8 lists the projects in the West District and Figure 2-10 shows a focused view of the West District and proposed development projects.

Table 2-8: Projects in the West District

Map ID	Project Name	Phase
62A-F	Hillside College Renovations/Addition	Near-Term
--	Improved Campus Entrance and Gateway	Near-Term
104-110	New Parkside Housing Village	Near-Term
75	Future Community Engagement Site	Long-Term

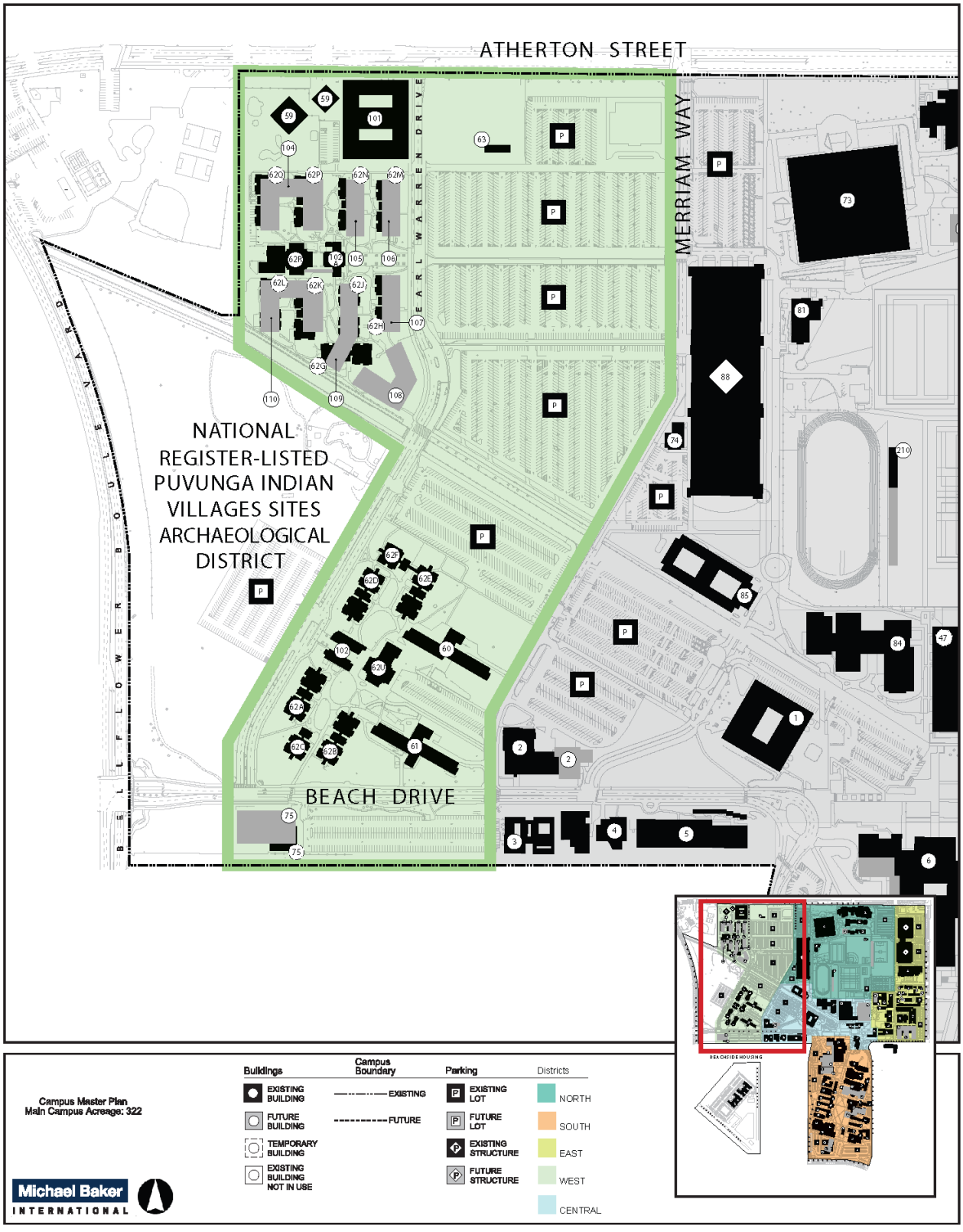

Figure 2-10: West District

2.6.3 Campus Housing

The existing CSULB housing communities include Parkside, Hillside, and Beachside. As discussed in Section 2.4.2 above, one of the objectives of the proposed Master Plan Update is to increase the number of student beds on campus by approximately 1,600. To achieve this increase, several improvements to campus housing are proposed, including right-sizing existing housing units in the Hillside and Beachside Housing communities to include common/shared living spaces within the buildings; replacing and renovating the lowest-performing buildings; and increasing the number of beds available through a proposed increase in units at Parkside. Additionally, the Master Plan Update plans on providing faculty and staff housing in a proposed new apartment housing building. The proposed housing improvements and the resulting net changes in the number of beds provided are shown in Table 2-9.

Table 2-9: Proposed Campus Housing Improvements

Campus Housing	Existing	Proposed
Number of Student Beds		
Parkside	1,387 beds	3,472 beds
Hillside	1,005 beds	694 beds
Beachside	616 beds	444 beds
TOTAL	*3,008* beds	*4,610* beds
Net Change	--	*+1,602* beds
Number of Non-Student Beds/Units[a]		
Housing and Residential Life[b]	26 beds/13 units	26 beds/13 Units
Faculty and Staff Housing	0	570 beds/285 units
TOTAL	*26 beds/13 units*	*596 beds/298 units*
Net Change	--	*+570 beds/285 units*

a. It is assumed each unit includes an average of two people; therefore, 26 beds for Housing and Residential Life and 570 beds for Faculty and Staff Housing are included for planning purposes.

b. Existing Housing and Residential Life units are dispersed throughout Parkside, Hillside, and Beachside and are not included in the student bed count.

2.6.4 Landscape and Open Space

The existing landscape and open spaces throughout the campus create a park-like setting and serve several functions, including recreation, outdoor gathering and event support, relaxation, and cultural expression. The Master Plan Update proposes improvements to landscaping and open space centered on three key themes, including providing a sense of place within each district; increasing programmable space to provide flexibility to adapt to the evolving needs of the campus and the community; and building upon the existing park-like setting to enhance the campus's urban forest, which offers aesthetic, environmental, and wellness benefits.

The primary types of open space offered on campus and proposed improvements are described as the following:

- Quad: As the primary open spaces on campus, quadrangles are predominantly used for socializing and studying. The Master Plan Update would improve the existing quadrangles by incorporating small-scale spaces to allow people to gather for occasional events and daily relaxing and socialization, while also accommodating large volumes of people at peak passage times. Proper circulation, adequate seating, and improved nighttime lighting

would be incorporated into the quads. The Master Plan Update proposes redefining the existing traditional Campus Quad, constructing a new North Campus (Kinesiology) Quad, and reconfiguring the Engineering Quad to accommodate the proposed Engineering Replacement Building.

- Courtyards: Courtyards are areas of open space that are either partially or completely enclosed by walls or buildings. CSULB's campus courtyards vary in size and character. Some courtyards function as a building's entry space while others, like the Liberal Arts Courtyard, serve as outdoor classrooms and are an extension of the surrounding buildings' program. Campus courtyards would include pedestrian promenades, a variety of seating arrangements, and landscaping that would provide shade. Wi-Fi coverage will be provided wherever courtyards are developed. The Master Plan Update would improve the Fine Arts Courtyard and create enhanced courtyards along the perimeter of the Campus Quad to promote a diverse range of social gathering activities.
- Plazas: CSULB's plazas serve as gathering spaces for both intimate social connections and large group events. Because of the campus's temperate climate, these outdoor spaces are a year-round amenity for students, faculty, staff, and the surrounding community. Plazas would be designed as public places where students, faculty, and community members can transition and connect. The Master Plan Update would create an arrival courtyard to the Walter Pyramid's primary visitor entrance to enhance the identity of the gateway.
- Corridors: CSULB's campus corridors are thoroughfares that allow pedestrians to get to and from their destinations. The Master Plan Update would improve connectivity across the campus along Bouton Creek through pedestrian and micro-mobility enhancements including redefining the bike lane, collapsing bollards, installing fencing and hedges, updating the guardrail, and installing pedestrian lighting. The Master Plan Update would also include the lawn terrace revitalization at Friendship Walk and the University Student Union bike lane connection from Beach Drive to Friendship Walk.
- Edges: The edges of the campus establish an identity and gateway, creating a boundary and acting as a buffer between the surrounding streets, land uses, and the campus. The landscape of campus edges varies from dense screen plantings and natural vegetation to turf areas and manicured planting areas. Proposed improvements would enhance the park-like aesthetic of the campus and promote wayfinding, health and wellness opportunities, safety, and consider accessibility and pedestrian volume during peak hours of the day. Drought tolerant landscaping would be used wherever possible to convey the campus's value of sustainability to the community. The Master Plan Update would improve the Bellflower Boulevard and Beach Street entrance to the campus with enhanced signage, bike lanes, landscaping and the installation of a speed table.
- Athletic Facilities: The Master Plan Update includes several Athletics and Recreation projects that focus on better utilizing land area and improving connections to and through the sports precinct. To better serve the highly utilized recreational fields, additional multi-use recreational fields would be added by reconfiguring the existing field space (i.e., conversion of the baseball field and removal of Lot E4). Additionally, permanent lighting, pedestrian pathways, and synthetic turf would be installed to maximize utilization and connectivity while reducing maintenance and water demand. The Master Plan Update proposes improvements to and/or expansion of the Walter Pyramid, Blair Field, George Allen Field, Jack Rose Track, softball stadium, and telecommunication improvements for broadcasting and streaming competitions.

2.6.5 Sustainability and Resiliency

The President's Commission on Sustainability was established to integrate sustainability into all aspects of CSULB.

The Master Plan Update identifies sustainability topic areas that most closely align with the campus vision and commitments toward climate action and resilience. The main sustainability topics that would incorporate CSULB's sustainability goals into the physical improvements proposed by the Master Plan Update include:

- Water: CSULB receives its water from the City of Long Beach, which draws on local groundwater for 50 percent of its supply, reducing dependence on imported water. The City manages its own conservation protocols, allowing for incentives and partnerships with institutions like CSULB. CSULB is committed to developing an improved campus strategy for reducing water use, repurposing water, maintaining healthy water quality, and ensuring a resilient water supply. As part of this effort, 50 percent of CSULB's current water supply is reclaimed water, which is used for some toilets, most irrigation, and central plant cooling towers. The Master Plan Update includes updated goals to expand on the use of reclaimed water through retrofitting and extension of reclaimed water lines, and use of reclaimed water for toilet flushing in new/replacement buildings. Additionally, the Master Plan Update includes goals and strategies to enhance stormwater management throughout the campus by implementing strategies for reducing runoff.
- Materials: The selection of materials for new construction, major renovation, and interior renovation projects impacts the sustainability goals and commitments of the campus. Materials require energy, water, and other physical resources throughout their life cycle. Sustainable materials are those whose production, installation, maintenance, and disposal have a low environmental cost. Factors identified for defining materials evaluation include operational performance; physical material performance; cost, including life cycle cost and cost of carbon/embodied carbon; human impact; environmental impact; and innovation and aesthetics.
- Energy and Carbon Reduction: CSULB prepared an update to its Climate Action and Adaptation Plan (CAAP) to identify strategies to reduce and eliminate greenhouse gas emissions from campus operations. In addition, current CSULB policy includes applying Net Zero Energy strategies to all new campus buildings.
- Multi-Modal Circulation: Currently, approximately 60 percent of air quality emissions attributed to CSULB come from faculty, staff, and student commuter trips. CSULB has implemented several Transportation Demand Management strategies aimed at reducing vehicle trips to and from campus and their resulting emissions. Additional transportation demand management (TDM) measures considered under the Master Plan Update are discussed further in Section 2.6.7 below.
- Place: The Master Plan Update includes strategies to connect sustainability with placemaking on the campus, including connecting the natural environment and park-like qualities of the campus to the design of the built environment and creating spaces on the campus that educate and promote sustainability initiatives.

2.6.6 Utilities

The CSULB main campus is served by existing utilities comprised of domestic and fire water, sewer, storm drain, irrigation water, chilled and hot water distribution, gas, electrical and telecommunications systems. To support the facilities proposed as part of the Master Plan Update

alterations, upgrades, or modifications are needed to existing utilities. The Utility Master Plan Update (April 2023) identifies critical needs for each of the utilities on campus that need to be addressed to minimize interruptions and promote reliability and redundancy. Each utility is evaluated for capacity, functionality, reliability, ease of maintenance, age, and ability to serve the existing and future needs of the campus.

2.6.7 Mobility and Parking

CSULB is a multi-modal campus featuring amenities for pedestrian, bicycle, personal vehicle, and public transit circulation and access.

Pedestrian Network Improvements

Pedestrian amenities throughout the CSULB main campus include sidewalks and paths that provide key connections to academic buildings, housing, and other student services. The Master Plan Update seeks to improve the existing pedestrian network on the campus to promote safety, comfort, access, and direct connections between uses. To accomplish this, three sets of improvements are proposed, the first of which includes filling network gaps, which primarily occur through and adjacent to parking lots, as well as through the sports field section of campus. In these areas, new sidewalks and paths are proposed.

The second set of improvements involves proposed enhancements for widened sidewalks, upgrades compliant with the Americans with Disabilities Act (ADA), traffic calming to provide shared space for pedestrians, and new paved pathways to support new buildings.

The third set of improvements would include enhancements to existing pedestrian crossings and create new crossings. The targeted crossings would be located internal to the campus, as well as along the edges of the campus that connect with the surrounding community.

In addition to the three sets of improvements described, night walk overlays would be identified for primary pedestrian pathways to provide connections between the campus districts after dark. The identified night walk overlay pathways would be well lit in the evening hours and would provide connections between buildings, facilities, and programs used after 8:00 p.m. Specific proposed pedestrian network improvements are described in Section 3.11, Transportation.

Bicycle and All-Wheel Network Improvements

One of the goals of the Master Plan Update is to provide improvements to help the CSULB main campus become less reliant on vehicular mobility. Proposed improvements to the bicycle and all-wheel network would provide safer and more comfortable options, enabling bicycle use internal to the campus, as well as provide connections for trips to and from campus. Proposed improvements to the bicycle and all-wheel are proposed to be implemented throughout the CSULB main campus, including along Bouton Creek, Determination Drive, Beach Drive, and West Campus Drive. Additional proposed improvements could include new bicycle route signage, pavement striping and markings, and widening pathways where shared bicycle/pedestrian spaces are currently narrower than 15 feet. Specific proposed bicycle and all-wheel network improvements are described in Section 3.11, Transportation.

Transit Network Improvements

The existing on-campus shuttle system provides a full loop around the campus. The east and west loops require transfer points at the northern and southern ends of campus. Several improvements are proposed to simplify the current service, including simplifying campus routes

to full clockwise and counterclockwise loops; improving frequency to 15-minute peak headways in each direction to address capacity concerns; staffing shuttle stops to alleviate confusion about shuttle and help build ridership among new students; and providing an on-demand shuttle service or ride-hailing subsidy to provide service to Beachside Village and off-campus locations.

In the long term, CSULB may consider multiple mobility hub locations on campus to help serve as key transfer points for different modes, and destinations for services. Future mobility hubs would serve as a location where existing mobility services would converge.

Vehicular Network Improvements

In order to increase safety and comfort for pedestrians and bicyclists on the CSULB main campus, improvements to the vehicular network are proposed along Determination Drive, Beach Drive, West Campus Drive, East Campus Drive, Deukmejian Way, and Palo Verde Avenue. Pedestrian and bicycle focused gateway improvements are proposed for campus entry points along Bellflower Boulevard, 7th Street, Palo Verde Avenue, and Atherton Street. Additionally, due to its proximity to surface parking lots on the campus, Atherton Street is envisioned as the primary vehicular entry point for the campus, specifically at Merriam Way and Carfax Avenue. The current entry point at Determination Drive is proposed to be deprioritized for vehicles due to the proposed bicycle and pedestrian improvements at this location. Specific proposed vehicular network improvements are described in Section 3.11, Transportation.

Parking and Transportation Demand Management

Proposed changes related to building and facility improvements proposed in the Master Plan Update would require the shifting of some existing parking space locations. However, no net change in parking spaces is anticipated, except for those needed for community outreach facilities.

TDM measures would be implemented to reduce vehicle trips and prioritize pedestrian and bicycle movement, encourage greater use of transit, pedestrian, and bicycle travel, and reduce dependence on automobiles at the campus. While CSULB has implemented several TDM strategies, additional TDM measures considered under the Master Plan Update could include, but not be limited to:

- Completing and updated TDM plan that comprehensively plans for the future with a focus on achieving CSULB's goals of reducing GHG emissions and reliance on vehicle mobility, and reducing the need for parking;
- Increasing on-campus housing opportunities;
- Incentivizing student residents to not have a car on campus;
- Distributing class and work schedules to spread the peak demand on campus;
- Providing additional on-campus amenities (e.g., childcare, post office, etc.); and
- Enhancing transit, shuttle, bicycle, and pedestrian amenities on the campus.

2.6.8 Proposed Master Plan Development

The Master Plan Update provides for planned improvements phased through the 2035 planning horizon. As previously discussed, development under the Master Plan Update would include renovation of existing buildings, demolition, and replacement of existing buildings in the same physical location, and construction of new buildings. Individual projects have been identified that

are expected to be developed in the next 10 years and are referred to as near-term (2-5 years) and mid-term (6-10 years) projects. The individual projects were prioritized for possible implementation based on a variety of factors, such as funding, building age, consolidation of programming, etc. Of the individual development projects, it is estimated that 13 would be near-term and 17 would be mid-term. These projects, listed in Table 2-10, are analyzed in this Draft EIR.

Table 2-10: Proposed Near-Term and Mid-Term Projects Analyzed in this EIR

Near-Term Projects	Mid-Term Projects
Engineering Replacement Building	College of the Arts Replacement Building
New Parkside Housing Village	New 7th St. Community Outreach Facility
Faculty and Staff Housing	Jack Rose Track / Commencement Facilities
USU Renovation / Addition and Cafeteria Replacement	Walter Pyramid Renovation
Hillside College Renovations / Addition	Pedestrian/Bike Lane Improvements
Beachside Housing	Fine Arts 4 Renovation
Aquatics Center and Pool Renovation	Fine Arts 1 / 2 Renovation
Lecture Hall 150-151 Renovation	Liberal Arts 5 Renovation
Student Health Services Addition	Theatre Arts Renovation
Corporation Yard Renovations	University Theatre Renovation
Microbiology Student Success Center Renovation	Baseball Field Conversion to Multi-Use Field
Friendship Walk Stairs Revitalization	Central Plant Decarbonization
Improved Campus Entrance and Gateway	University Music Center Renovation / Addition
	Nursing Building Renovation (CAPS)
	Engineering Tech Renovation
	Relocated Archery Field
	Redefining the Campus Quad

Table 2-11 below provides a description of each of the individual near-term and mid-term development projects that are analyzed in this EIR, and categorizes the projects as either “major” or “minor”. Major projects include projects that are analyzed in detail due to their size, level of construction effort or type of construction activities, location within the campus, operational scenario, or potential for impacts to historical or archaeological resources. Generally, major projects may also include a quantitative analysis. Minor projects are defined as projects that are smaller in size, have a lower level of construction effort (i.e., minimal ground disturbance or construction equipment), or operate similarly to existing conditions. Minor projects are generally analyzed at a qualitative level.

Additionally, individual development projects in Table 2-11 have been organized into three types of proposed development. Each type of proposed development is identified, as follows:

- Renovation: involves renovation of an existing facility within its existing footprint; some renovation projects are further distinguished as additions, which involves expanding the footprint of an existing facility;

- Replacement: involves demolition and replacement of an existing facility in the same physical location; or

- New: involves construction of a new facility with a new use.

Lastly, the individual development projects have been further grouped into five distinct categories according to the type of building or function and use: Academic and Administrative Facilities, Housing, Student and Campus Support Facilities, Athletic Facilities, and Mobility, Circulation, and Open Space. Projects within each category would typically be implemented in a similar manner (i.e., similar construction and operation scenarios).

Identifying the individual development projects in this EIR allows for future streamlining such that implementation of future projects under the proposed Master Plan Update may qualify for preparation of a lower level of CEQA documentation (e.g., a categorical exemption or an addendum to this EIR) or a tiered[13] analysis based on this EIR, as applicable.

The Master Plan Update also includes a number of projects that are expected to be developed in the long-term (11 years or more). While these projects are identified in the Master Plan Update, they are not discussed or analyzed in further detail in this Draft EIR as it would be speculative to estimate project-level details for those projects at this time. Refer to the Master Plan Update for details on the long-term projects.

[13] Pursuant to CEQA Statute Section 21094 and CEQA Guidelines Section 151152.

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
51	**Engineering Replacement Building** The proposed replacement building would construct a new six-story building at the site of the existing EN2, EN3, and EN4 buildings. The project would require the demolition of EN2, EN3, and EN4. The proposed replacement building would modernize and right-size classrooms, teaching labs, and faculty and staff workspaces through the inclusion of flexible lab spaces. Additionally, the replacement of the existing low-density building with a new higher-density building would create new open space for a quad. In the long-term, the open space provides space for future buildings as the College of Engineering grow over time. *Size: 71, 000 gross square feet (GSF); 6 floors*	●		Near	Replacement	Academic and Administrative Facilities	East
104-110	**New Parkside Housing Village** The campus would establish Parkside Housing Village, a new residential community in place of the existing Parkside Residence Halls. The first phase of construction for the New Parkside Housing Village would demolish existing buildings G, H, J, K, and L and construct two new buildings with approximately 1,000 student beds. The buildings would be five stories tall and incorporate active lounges to support student experiences, passive lounges for studying, shared kitchens to encourage community and student services, and ground-floor dining services as needed. The building massing would create courtyards that offer students outdoor social areas. *Size (Phase I): 200,000 GSF (across 2 buildings); 5 Floors Each*	●		Near	Replacement	Housing	West
106	**Faculty and Staff Housing** The project proposes to demolish the existing Design Building and replace it with a new building for faculty and staff housing with 285 units. The project includes four stories of studios and one-and two-bedroom apartment-style units. Parking for residents would be located on the first two levels of the building, which preliminarily is planned to be approximately 360 spaces. The project may also include ground-level retail and dining to serve campus and	●		Near	New	Housing	East

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
	community. The proposed building would be setback approximately 180 feet from Palo Verde Drive and 55 feet from State University Drive as the existing Parking Lot E9 would remain. With the proposed housing building across State University Drive from the Bixby Hill Apartment Complex, the project would be designed to extend the existing townscape character of the community. The project also proposes improvements to State University Drive to support pedestrian safety, including enhanced pedestrian crossings and widened sidewalks. *Size: 388,000 GSF; 6 Floors (4 Floors of Housing and 2 Floors of Parking)*						
6/7	**USU Renovation/Addition and Cafeteria Replacement** This project would renovate the existing USU building and provide an addition. The addition would require demolition of the University Dining Plaza. The project would modernize and expand the building to accommodate current student needs, as well as provide expanded campus food services. The USU was found to be individually eligible for listing in the National Register and California Register, and is a contributing building to the Upper Campus Historic District. The University Dining Plaza is also a contributing building to the Upper Campus Historic District. *Size: 50,000 GSF (Addition); 160,000 GSF (Renovation)*	●		Near	Renovation	Student and Campus Support Facilities	South
62A-F	**Hillside College Renovations/Addition** The project would expand six buildings within the existing Hillside College to add communal space to the buildings. The project would fully renovate all Hillside College buildings including interiors, exteriors, and accessibility improvements. *Size: 96,000 GSF (across 6 buildings); 20,000 GSF (Addition)*	●		Near	Renovation	Housing	West

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
300	**Beachside Housing** The project would provide a partial interior and partial exterior renovation of existing Beachside College buildings including new elevator towers, new fire alarm systems, new flooring and finishes, new student use kitchens, new hot water systems, new windows, and furniture. Size: 122,100 GSF (across 2 buildings)	●		Near	Renovation	Housing	Off-Main Campus
--	**Aquatics Center and Pool Renovation** The project would include repair and upgrade of the pool, which was constructed in the early 1970s and is one of the most utilized facilities as it is shared by Athletics, Academics, Club Sports, and community. The project may increase the facility size and add more bleachers, which would require demolition of the existing pool. *Size: 38,000 GSF (Renovation); 20,000 GSF (Addition)*	●		Near	Replacement	Athletic Facilities	North
31	**College of the Arts Replacement Building** The proposed replacement building would construct a new three-to four-story building at the site of the existing Fine Arts 3 building. This project requires the demolition of Fine Arts 3. The Fine Arts 3 building is a contributing building to the Upper Campus Historic District. Additionally, the project would construct a three-story addition, with a bridge connecting to the proposed replacement building. The proposed replacement building would house Fine Arts programs and the relocation of the Design Department. The building would be positioned to define the east side of the Quad, with an internal courtyard space for outdoor learning, study, gallery space, and gathering. The new facility could also contain shared studios, collaboration spaces, and innovation spaces supporting interdisciplinary initiatives within the College of the Arts. *Size: 114,100 GSF; 3-4 Floors*	●		Mid	Replacement	Academic and Administrative Facilities	South

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
23	**New 7th St. Community Outreach Facility** This project would construct a new building in the location of the existing Education 1 and Education 2 buildings, which would require the demolition of those buildings. The proposed building would be used for community engagement. The Education 1 and Education 2 buildings are contributing buildings to the Upper Campus Historic District. *Size: 100,000 GSF; 4 Floors maximum*	●	Mid		New	Student and Campus Support Facilities	South
210	**Jack Rose Track/Commencement Facilities** The project proposes improvements to the Jack Rose Track to provide amenities for both Athletics track events and Commencement. The improvements include expanded bleachers on the east side of the facility, permanent flood lighting, and permanent concessions that could double as a food venue for academic programs nearby. There is also a need for locker room space for Track and Field and Cross Country. Size: 5,000 GSF	●	Mid		Renovation	Athletic Facilities	North
73	**Walter Pyramid Renovation** The project would include a new roof and interior improvements to serve student-athletes and fans better. Interior improvements include upgrading the sound system, replacing the existing elevators, expanding concession stands, adding storage, and updating the restrooms. Size: 158,000 GSF	●	Mid		Renovation	Athletic Facilities	North
--	**Pedestrian/Bike Lane Improvements** The project would include an enhanced crossing at Bellflower Boulevard, to be coordinated with the City of Long Beach. West of Determination Drive, a newly constructed path is proposed south of Bouton Creek. An enhanced diagonal crossing at Determination Drive would facilitates crossing from the south side of the creek to the north side. Between Determination Drive and Merriam Way, use of the existing pedestrian path for a shared use facility is proposed,	●	Mid		Renovation	Mobility, Circulation, and Open Space	Central, West, and South

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
	which may be widened to at least 15 feet. East of Merriam Way, the Bouton Creek bicycle facility would split from the existing pedestrian pathway for a proposed 15 feet wide bicycle facility within current parking lot space south of the College of Business (some existing parking spaces would be lost while others would be relocated in Lots E1 and E2). A marked bicycle route would continue through the center of campus, with another proposed enhanced crossing across State University Drive. In the future, a path on the northside of Bouton Creek or a pre-fabricated bridge may be considered to help enhance connections between the bicycle facility and Parkside housing.						
17	**Lecture Hall 150-151 Renovation** This project consists of an interior tenant improvement renovation. The Lecture Hall 150-151 building is a contributing building to the Upper Campus Historic District. *Size: 7,050 GSF*	●		Near	Renovation	Academic and Administrative Facilities	South
32/33	**Fine Arts 1 / 2 Renovation** This project would include interior renovations of the Fine Arts 1 and Fine Arts 2 buildings. The Fine Arts 1 and Fine Arts 2 buildings are contributing buildings to the Upper Campus Historic District. *Size: 35,000 GSF*	●	Mid		Renovation	Academic and Administrative Facilities	South
35	**Fine Arts 4 Renovation** The project would also include a full interior renovation of the three-story Fine Arts 4 building. The building footprint would remain unchanged. The Fine Arts 4 building is a contributing building to the Upper Campus Historic District. *Size: 83,000 GSF*	●	Mid		Renovation	Academic and Administrative Facilities	South

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
10	**Liberal Arts 5 Renovation** The project would include a full building renovation, including interior and exterior. The project would replace windows and update the exterior to be ADA compliant. The Liberal Arts 5 building is a contributing building to the Upper Campus Historic District. *Size: 63,000 GSF*	●		Mid	Renovation	Academic and Administrative Facilities	South
26	**Theatre Arts Renovation** This project would include an interior renovation of the building. The Theatre Arts Building was found to be individually eligible for listing in the National Register and California Register, and is a contributing building to the Upper Campus Historic District. *Size: 60,000 GSF*	●		Mid	Renovation	Academic and Administrative Facilities	South
27	**University Theatre Renovation** This project would include an interior renovation of the building. The University Theatre building is a contributing building to the Upper Campus Historic District. *Size: 20,000 GSF*	●		Mid	Renovation	Academic and Administrative Facilities	South
--	**Baseball Field Conversion to Multi-Use Field** The project proposes to convert the existing baseball field to a recreation field for academic classes and club sports through updating line markers and moving fencing to serve academic classes and club sports. Additionally, the existing full baseball field would be converted to a new practice infield located adjacent to the softball stadium.	●	Mid		Replacement	Athletic Facilities	North
2	**Student Health Services Addition** The project would provide an addition to the existing Student Health Services building to provide enhanced and centralized Student Counseling and Psychological Services. The earliest project start date is 2024. *Size: 9,000 GSF*	●		Near	Renovation	Student and Campus Support Facilities	Central

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
58	**Corporation Yard Renovations** The project would include renovations that would occur in phases. The project would include expansion of the University Police Department building by approximately 5,000 feet. The project would expand the shops on the west side of the complex, which would require relocating the current storage facility to the recycling center and utility connections. The project would renovate and place an addition to the custodial shops, which would require the relocation of the existing shipping containers. Additionally, the project would renovate the current automotive, plumbing, and electrical shops and the southernmost shops, including the paint shop, lock shop, sign shop, and carpenter shop. Additional storage and warehousing space may be needed as well. To maximize the Corporation Yard use, shops, storage, and warehousing facilities could be relocated to the former recycling center. *Size: 43,000 GSF (Renovation) 9,500 GSF (Addition); 1 Floor*	●		Near	Renovation	Student and Campus Support Facilities	East
41	**Microbiology Student Success Center Renovation** This project would include an interior renovation of the building. *Size: 10,000 GSF*	●		Near	Renovation	Student and Campus Support Facilities	South
--	**Friendship Walk Stairs Revitalization** The project would include demolition of the existing pavement along Friendship Walk and redesign of the path to include terraces, amphitheater steps, seating, and ornamental trees for shade, and would be designed to meet ADA requirements.	●		Near	Renovation	Mobility, Circulation, and Open Space	Central
--	**Improved Campus Entrance and Gateway** The Bellflower Boulevard and Beach Street entrance is a primary gateway into campus. The project would include introducing a palm and understory tree allee, improving the current signage, and introducing traffic calming through a speed table.	●		Near	Renovation	Mobility, Circulation, and Open Space	West

Table 2-11: Proposed Near-Term and Mid-Term Projects

Figure 2-5 Map ID	Project Name and Description	Level of Analysis		Phase	Type of Development	Type of Use	Campus District
		Major	Minor				
86	**Central Plant Decarbonization** The project would replace equipment at the Central Plant with electrified equipment.	●		Mid	Renovation	Student and Campus Support Facilities	South
71	**University Music Center Renovation/Addition** This project would include an interior renovation of the building and addition. *Size: <10,000 GSF (Renovation); 15,000 GSF (Addition)*	●		Mid	Renovation	Academic and Administrative Facilities	North
3	**Nursing Building Renovation (Counseling and Psychological Services)** This project would include an interior renovation of the building. *Size: 23,000 GSF*	●		Mid	Renovation	Academic and Administrative Facilities	Central
83	**Engineering Tech Renovation** This project would include an interior renovation of the building. *Size: 67,000 GSF*		●	Mid	Renovation	Academic and Administrative Facilities	East
--	**Redefining the Campus Quad** The project includes landscaping, hardscaping, and installation of seating, tables, and lighting to help define the perimeter of the quad.		●	Mid	Renovation	Mobility, Circulation, and Open Space	South
--	**Relocated Archery Field** The project would relocate the existing archery field, including relocation of the existing storage shed.		●	Mid	New	Athletic Facilities	North

2.7 Construction

Construction of the planned improvements would occur in phases and would be overlapping through the 2035 planning horizon. The majority of construction activities are anticipated to occur during daytime hours, generally from 7:00 a.m. to 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday. It is anticipated that work outside of these hours may be required in order to maintain construction schedules and minimize any potential road detours. All construction activities would comply with Section 8.80.202 of the Long Beach Municipal Code regarding construction noise.

As previously discussed, the identified individual development projects have been categorized into types of proposed development and would typically be implemented in a similar manner (i.e., similar construction scenarios). Thus, construction scenarios for renovation, replacement, and new project types may involve the following activities listed in Table 2-12.

Table 2-12: Potential Construction Activities for Each Master Plan Update Project Type

Type of Project	Construction Activities
Renovation – Interior	• Repainting walls • Replacing floors • Demolition or installation of walls • Infrastructure systems upgrades systems • Americans With Disabilities Act (ADA)-related improvements • Electrical work • Lighting upgrades
Renovation – Interior and Exterior	• Activities included for interior renovation • Energy efficiency improvements (including window replacements) • HVAC installation or upgrades • Utilities connections • Selective Landscaping and hardscaping • Asphalt demolition, grading, paving, and compaction of roads • Restriping of roads
Renovation – Addition	• Site preparation, including tree removal • Earthmoving activities such as excavation, utilities, trenching, and grading • Construction of the building addition • Utilities connections • Asphalt demolition, grading, paving, and compaction of roads • Restriping of roads • Landscaping • Architectural coating

Table 2-12: Potential Construction Activities for Each Master Plan Update Project Type

Type of Project	Construction Activities
Replacement	• Demolition of existing building/facility • Site preparation, including tree removal • Earthmoving activities such as excavation, utilities, trenching, and grading • Construction of the new building/facility • Asphalt demolition, grading, paving, and compaction of roads • Restriping of roads • Landscaping, as applicable • Architectural coating
New	• Site preparation, including tree removal • Earthmoving activities such as excavation, utilities, trenching, and grading • Construction of the new building/facility • Utilities connections • Asphalt demolition, grading, paving, and compaction of roads • Restriping of roads • Landscaping • Architectural coating

2.7.1 Construction Staging

Construction staging and laydown areas for individual development projects will be determined during the preconstruction phase. Construction staging and laydown areas would generally be located in surface parking lots or within landscaped or lawn areas, as feasible, and would be selected based on availability of space within an individual project site, or proximity to the individual project site. Should construction staging and laydown areas outside of the boundaries of the individual project site be necessary, they would be fenced off and temporarily unavailable to park or recreate in. Access points to the campus would be maintained, and parking spaces and/or landscaped and lawn areas used for construction staging and laydown would be restored following construction activities.

2.7.2 Haul Routes

There are several proposed haul truck routes to the CSULB main campus that could be used during construction. Trucks could access the CSULB main campus by traveling from Interstate 605 or Interstate 405 to California State Route 22, until reaching East Campus Drive or West Campus Drive. Trucks could also access the CSULB main campus locally by traveling along North Bellflower Boulevard and routing east on East Atherton Street or entering one of the campus' entrances on Beach Drive.

Truck could access the Beachside Village property by traveling north or south along California State Route 1. Trucks would enter the Beachside Village property along California State Route 1 or Clark Avenue. From the north, trucks could access the Beachside Village property by traveling south on Interstate 405, south on California Route 19, and southeast on California State Route 1. From the west, trucks could travel east along California State Route 1 until reaching the Beachside Village property. From the east, trucks could west travel along California 22, and north along

California State Route 1 until reaching the Beachside Village property.

2.8 Intended Uses of the EIR

Pursuant to CEQA Guidelines Section 15121, an EIR is an informational document used by a public agency to analyze and disclose the potential environmental effects resulting from a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid significant environmental effects. The CSU Board of Trustees is the lead agency responsible for certification of this EIR as adequate under CEQA and the related approval of the proposed Master Plan Update. This EIR could also be relied upon by state or federal responsible agencies with permitting or approval over any project-specific action to be implemented in connection with the proposed project.

This EIR provides both a program-level analysis of the proposed Master Plan Update and a project-level analyses of 30 specific proposed near- and mid-term projects. The project-level analysis has been prepared for those projects that would be implemented within the foreseeable future (within the next 10 years) and for which enough detailed development information is available. As individual projects are proposed for implementation, each would be individually reviewed for consistency with the Master Plan Update EIR and approved for implementation by the CSU Board of Trustees or its designee. Project changes, changes in a project's circumstances, or the potential for new or more severe impacts may require additional environmental review, as necessary. Any additional CEQA environmental review for these future projects would occur after the CSU Board of Trustees approval of the Master Plan Update and certification of this EIR. As discussed in Section 2.6.8, identifying the individual development projects in this EIR allows for future streamlining such that implementation of future projects under the proposed Master Plan Update may qualify for preparation of a lower level of CEQA documentation (e.g., a categorical exemption or an addendum to this EIR) or a tiered[14] analysis based on this EIR, as applicable.

2.9 Required Permits and Approvals

Permits and other use authorizations that may be required to implement the proposed project may include, but may not be limited to, the following:

The California State University, Board of Trustees

- Approval and adoption of the Master Plan Map
- Approval and certification of the CEQA environmental document
- Approval of schematic plans for future facilities and improvements

Federal Aviation Administration

- Approval for sports field flood lighting within the Long Beach Airport flight path

California State Fire Marshal

- Plan Review (Fire and Life Safety)

[14] Pursuant to CEQA Statute Section 21094 and CEQA Guidelines Section 151152.

Division of the State Architect

- ADA Accessibility Compliance

Southern California Air Quality Control District

- Air quality construction and operational permits

Los Angeles County Flood Control District

- Issuance of permits for construction and/or other actions that affect Bouton Creek channel

City of Long Beach

- Issuance of encroachment permits for construction of utility and roadway improvements within City right-of-way
- Approval of new utility connections

CSU Office of Capital Planning, Design & Construction

- Administrative Project Approvals by the CSU Board of Trustees

CSULB

- Building Code Plan Check
- Seismic Safety Structural Peer Review
- Capital Planning and/or Campus Planning Committee
- Campus Deputy Building Official
- Campus Departments – Environmental Health and Safety, Facilities Management, Disabled Student Services, Information and Telecommunication Services

CHAPTER 3

ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter of the Draft EIR presents potential environmental impacts of implementation of the proposed Master Plan Update. The scope of the analysis and key attributes of the analytical approach are presented below to assist readers in understanding the manner in which the impact analyses have been conducted in this EIR.

3.0.1 Scope of the Environmental Impact Analysis

The proposed Master Plan Update would guide the physical development of the CSULB main campus. Approval of the project would not constitute a commitment to any specific component of the Master Plan Update, construction schedule, or funding priority. Each development embarked on by CSULB during the lifespan of the Master Plan Update would be individually reviewed for consistency with the Master Plan Update EIR and approved for implementation by the CSU Board of Trustees or its designee. Project changes, changes in a project's circumstances, or the potential for new or more severe impacts may require additional environmental review, as necessary. This EIR provides a program-level environmental assessment, which evaluates the environmental effects of the project and focuses on full development of the CSULB main campus and the Beachside Village property as contemplated by the Master Plan Update. Additionally, the near- and mid-term developments that are expected to be developed within the next 10 years are evaluated at a project-specific level.

Based on the NOP and Initial Study (Appendix A), the following sections in Chapter 3 of this Draft EIR examine in detail the potential environmental effects associated with implementation of the proposed project by resource area:

- Section 3.1, Aesthetics
- Section 3.2, Air Quality
- Section 3.3, Biological Resources
- Section 3.4, Cultural Resources
- Section 3.5, Geology, Soils, and Paleontological Resources
- Section 3.6, Greenhouse Gas Emissions
- Section 3.7, Hydrology and Water Quality
- Section 3.8, Noise
- Section 3.9, Population and Housing
- Section 3.10, Public Services and Recreation
- Section 3.11, Transportation
- Section 3.12, Tribal Cultural Resources
- Section 3.13, Utilities and Energy

Effects Found Not To Be Significant

Based on the findings of the Initial Study, it was determined that potential impacts related to agriculture and forestry resources, hazards and hazardous materials, land use and planning, mineral resources, and wildfire are not likely to be significant under CEQA and the CEQA Guidelines (California Public Resources Code, Section 21000 et seq.; California Code of Regulations. Title 14, Section 15000 et seq.).

Agriculture and Forestry Resources

The CSULB main campus, Beachside Village property, and surrounding area are not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the "Important Farmland in California" map prepared by the California Resources Agency pursuant to the Farmland Mapping and Monitoring Program.[1] All projects developed and implemented under the Master Plan Update would occur within the boundaries of the existing CSULB main campus and Beachside Village property, none of which is zoned for agricultural use or forest land, timberland, or Timberland Production as defined in Public Resources Code Section 12220(g) and Government Code Section 4526. Additionally, there are no Williamson Act contracts within Los Angeles County.[2] Implementation of the Master Plan Update would have no impact on agricultural or forestry resources, and this resource area is not discussed further in this EIR.

Hazards and Hazardous Materials

Construction activities associated with the Master Plan Update would involve the temporary use, storage, and transport of hazardous materials typical of construction of buildings. Construction of all projects are required to comply with existing federal, state, and local regulations related to the transport, use, and disposal of hazardous materials, including the CSU standards set forth in PolicyStat.[3] Operation of some improvements implemented under the Master Plan Update would involve the routine use of hazardous materials, such as common chemicals used for landscaping and maintenance, similar to current operations. Any laboratories on campus that use, store, and dispose of hazardous materials would be required to abide by their respective hazardous materials plans, such as the Chemical Hygiene Plan for the College of Engineering or College of Natural Sciences and Mathematics, which are designed to fulfill the California Division of Occupational Safety and Health requirement regarding "Occupational Exposure to Hazardous Chemicals in Laboratories." Additionally, the CSULB Environmental Compliance Program provides employee training programs, procedures, and policies designed to ensure the safe handling, storage, and disposal of hazardous materials and wastes, and is also responsible for coordinating with regulatory agencies to help CSULB achieve compliance with environmental regulations.[4] Implementation of the Master Plan Update, including compliance with applicable regulations, would have less than significant impacts related to significant hazards to the public or environment.

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1 California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program, California Important Farmland Finder, available at: https://maps.conservation.ca.gov/DLRP/CIFF/, accessed February 19, 2022.

2 California Department of Conservation, Division of Land Resource Protection, October 2021, *The Williamson Act: 2018-2019 Status Report*.

3 The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9235, Construction Document Phase of Project Development, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-83nrq, accessed February 15, 2022.

4 California State University, Long Beach, Environmental Compliance, available at: https://www.csulb.edu/beach-building-services/environmental-health-safety/environmental-compliance, accessed March 3, 2022.

All improvements developed under the Master Plan Update would occur within the existing boundaries of the CSULB main campus and the Beachside Village property, and would be required to comply with existing federal, state, and local regulations related to the transport, use, and disposal of hazardous materials. Therefore, implementation of the Master Plan Update would not affect nearby schools.

Additionally, the CSULB main campus and Beachside Village property are not included on any hazardous waste site lists including the Department of Toxic Substances Control's EnviroStor database, which includes CORTESE sites and the Environmental Protection Agency's database of regulated facilities, or other lists compiled pursuant to Section 65962.5 of the Government Code.[5,6] Therefore, implementation of the Master Plan Update would have no impact related to a listed hazardous materials site.

The CSULB main campus and Beachside Village property are not located within an airport land use plan, and implementation of the Master Plan Update would not impact Long Beach Airport due to its distance from the campus. Therefore, no impact would occur related to a safety hazard or excessive noise for people residing or working in the project area.

The CSULB Emergency Operations Plan (EOP) details how CSULB manages and coordinates resources and personnel responding to emergency situations, including earthquakes, flooding, tsunami, and windstorms.[7] The university also has an evacuation plan for campus-wide and localized evacuation to ensure that evacuation will be done in a systematic, controlled, and planned manner with the guidance and assistance of the University Police Department and campus Building Marshals.[8] The university would abide by the EOP and evacuation plan during emergency situations throughout implementation of the proposed project, and the proposed project would not impair implementation of the evacuation plan. Therefore, implementation of the Master Plan Update would have a less than significant impact related to interference with an emergency response plan. In addition, no wildlands occur within or near the CSULB main campus or Beachside Village property. As such, no impacts related to risk of wildland fires would occur. Therefore, no impacts related to hazards and hazardous materials would occur, and this resource area is not discussed further in this EIR.

Land Use and Planning

The CSULB main campus is a developed campus that is composed of buildings for academic uses, student housing, commons and dining uses, athletic venues, and performing arts centers; parking facilities; landscaped and open space areas; and an undeveloped section of the northwestern campus that has a restrictive covenant prohibiting development. The Master Plan Update would involve implementing proposed improvements to campus facilities. The Master Plan Update would support and advance the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035, and would not divide any established community.

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5 California Department of Toxic Substances Control, EnviroStor Database, Search by Map Location, available at: http://www.envirostor.dtsc.ca.gov/public/, accessed March 3, 2022.

6 United States Environmental Protection Agency, Envirofacts Database, available at: https://enviro.epa.gov/, accessed March 3, 2022.

7 California State University, Long Beach, Emergency Operations Plan 2020-2021, available at https://www.csulb.edu/university-police/emergency-operations-plan, accessed March 2, 2022.

8 California State University, Long Beach, Evacuation Plans, available at https://www.csulb.edu/university-police/evacuation-plans, accessed March 2, 2022.

CSULB is an entity of the CSU, a state agency, and the campus is state-owned property; therefore, development on the campus is not subject to local land use policies, regulations, or ordinances. Development and operation of proposed projects implemented under the Master Plan Update would be compatible with existing land uses in the areas surrounding the CSULB main campus and the Beachside Village property, including commercial uses, public facilities, and low- and medium-density residential neighborhoods. Therefore, no land use impacts would occur, and this resource area is not discussed further in this EIR.

Mineral Resources

According to the California Department of Conservation CGS Information Warehouse: Mineral Land Classification data mapper, the CSULB main campus is located on lands classified as MRZ-3 and MRZ-4 and Beachside Village property is located on lands classified as MRZ-4, meaning areas of undetermined mineral resource significance and areas of unknown mineral resource potential, respectively.[9] The CSULB main campus and Beachside Village property are not located on lands classified as MR-2, which are areas that contain identified mineral resources. Additionally, the CSULB main campus and Beachside Village property do not contain any oil wells, and no oil extraction occurs within the campus.[10] Historical uses of the CSULB main campus and Beachside Village property have not included mineral extraction, nor does it currently support mineral extraction. In addition, the proposed project does not propose any mineral extraction activities. Therefore, implementation of the Master Plan Update would have no impacts related to mineral resources, and this resources area is not discussed further in this EIR.

Wildfire

According to the California Department of Forestry and Fire Protection's Fire and Resource Assessment Program, the CSULB main campus and Beachside Village property are not located in or near a State Responsibility Area.[11] The CSULB main campus and Beachside Village property do not contain lands designated as Very High Fire Hazard Severity Zones. Therefore, no impact would occur related to wildfire, and this resource area is not discussed further in this EIR.

3.0.2 Definition of Baseline or Existing Conditions

A proposed project's baseline is typically defined as the environmental conditions as of a certain date that are used for purposes of comparison to determine the significance of a proposed project's environmental effects. Per Section 15125(a)(1) of the CEQA Guidelines, the baseline conditions are typically the physical environmental conditions as they exist at the time of the release of the NOP. For some projects, a deviation from this is permitted with substantial evidence, which allows the lead agency to define the appropriate baseline condition that is a time other than the release of the NOP. As discussed further under Section 15125(a)(1) of the CEQA Guidelines, "…a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence." An example of a project where the baseline conditions may not be the time of the release of the NOP is a water infrastructure project in which the average historic water use for an area may be more representative of actual conditions than the water use in the year of the release of the NOP.

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9 California Department of Conservation, 1981, Generalized Aggregate Resource Classification Map, Orange County – Temescal Valley and Adjacent Production – Consumption Regions.

10 California Department of Conservation, Geologic Energy Management Division's (CalGEM) Well Finder, available at: https://maps.conservation.ca.gov/doggr/wellfinder/, accessed March 2, 2022.

11 California Department of Forestry and Fire Protection, Fire and Resource Assessment Program, Fire Hazard Severity Zone Viewer, available at: https://egis.fire.ca.gov/FHSZ/, accessed February 22, 2022.

The original NOP for the Master Plan Update was published on April 21, 2022. Therefore, 2022 is the baseline year for analysis of the physical setting and for development of the campus in this EIR. However, AY 2019-2020 is used in the EIR as the basis for evaluating the net increase in enrollment and campus population with the project as it is the most recent academic year pre-dating the COVID-19 pandemic and the year that the Draft Master Plan process began. Specifically, enrollment in AY 2019-2020 was approximately 28,876 FTES, and total on-campus population was 32,699. Enrollment for subsequent academic years beyond 2019-2020 has been affected by the COVID-19 pandemic and is not representative of historical growth of enrollment and does not account for the anticipated systemwide enrollment growth, as directed by CSU's Office of the Chancellor. For additional discussion of enrollment and campus population, refer to Appendix B.

While AY 2019-2020 forms the basis for the net increase in enrollment and campus population with the project, this Draft EIR uses more recent documentation to reflect existing conditions where appropriate. For example, reports documenting population forecasts (e.g., 2020 Southern California Association of Governments (SCAG) regional growth forecasts), and other reports documenting existing conditions have been released since AY 2019-2020 and are used in the analysis where applicable. The methodology section of each environmental resource area will describe the use of more recent documentation for the baseline condition, as applicable.

3.0.3 Definition of Study Area

The project area consists of the CSULB main campus and the Beachside Village property; however, the extent of the study area varies among the environmental resource areas analyzed in this EIR, depending on the extent of the area in which impacts could occur. For example, the evaluation of population and housing impacts considers the SCAG region, which includes six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura) and 191 cities, as this region is the basis for growth forecasts and various regional plans that relate to population and housing impacts. In contrast, paleontological impacts are assessed only for the project area (e.g., the CSULB main campus, Beachside Village property, and surrounding setting) due to the potential extent of impacts (refer to Chapter 2, Project Description, for further description of the Project Location and Setting). The study area for each environmental resource area is defined in each resource section in this chapter.

3.0.4 California State University Autonomy

CSULB is an entity of the CSU system, which is a constitutionally created state agency and is therefore not subject to local government planning and land use plans, policies, or regulations. Although there is no formal mechanism for joint planning or the exchange of ideas, CSULB may consider, for coordination purposes, aspects of local plans and policies for the communities surrounding the campus when it is appropriate. The proposed project would be subject to state and federal agency planning documents described herein but would not be bound by local or regional planning regulations or documents such as the City of Long Beach's General Plan or municipal code. Nonetheless, if warranted, the City or regional regulations are described for informational purposes only, and not as the basis for the determination of significant impact for purposes of CEQA.

CSULB seeks to maintain an ongoing exchange of ideas and information and to pursue mutually acceptable solutions for issues that confront both the university and its surrounding community. To foster this process, CSULB participates in, and communicates with the City of Long Beach, Los Angeles County, and community organizations and sponsors various meetings and briefings to keep local organizations, associations, and elected representatives apprised of ongoing

planning efforts and considers community input.

3.0.5 Impact Analysis

Each environmental resource area in Section 3.1 through Section 3.13 is discussed in the following manner.

- **Regulatory Setting** identifies the applicable federal, state, regional, and/or local regulations.
- **Environmental Setting** includes a description of the existing physical environmental conditions, or "baseline conditions," at the time the environmental analysis is commenced to compare and establish the type and extent of the potential environmental effects of the proposed project. The baseline conditions are tailored specifically for the resource area discussed in each section.
- **Methodology** describes the sources or methods utilized in the preparation of the impact analysis for each environmental resource area. This section identifies the thresholds of significance, or standards, by which the lead agency measures the significance of an impact. Additionally, thresholds that were scoped out as part of the Initial Study are identified.
- **Environmental Impact Analysis** includes the impact analysis, which presents evidence, based on scientific and factual data, about the cause and effect relationship between the proposed project and potential changes in the environment. The exact magnitude, duration, extent, frequency, range and other parameters of a potential impact are ascertained to the extent possible to provide facts in support of finding the impact significant or less than significant. In determining whether impacts may be significant, all the potential effects, including direct effects and reasonably foreseeable indirect effects, are considered.
- **Mitigation Measures** identify actions that can reduce or avoid a potentially significant impact identified in the analysis. Existing regulations and adopted CSU or university policies or best practices applicable to the proposed project are considered a part of the existing regulatory environment and are not considered or included in mitigation. Mitigation measures are those feasible, project-specific measures which are required, in addition to compliance with existing regulations and requirements, to reduce significant impacts. In addition to measures that the lead agency has sole authority to implement, mitigation can also include measures that are the responsibility and jurisdiction of another public agency (CEQA Guidelines Section 15091[a][2]).
- **Level of Significance after Mitigation** indicates what effects remain after the implementation of mitigation and whether the residual effects are considered significant. When impacts cannot be mitigated to a less than significant level, even with the inclusion of mitigation measures, they are identified as "unavoidable significant impacts." To approve a project with unavoidable significant impacts, the lead agency must adopt a Statement of Overriding Considerations at the time of EIR certification. In adopting such a statement, the lead agency must find that it has reviewed the EIR, balanced the benefits of the project against its significant effects, and concluded that the benefits of the project outweigh the unavoidable adverse environmental effects, and thus, the adverse environmental effects may be considered "acceptable" (CEQA Guidelines Section 15093 [a]).

- **Cumulative Impacts** requires the evaluation of a project's impacts in the context of other projects that may affect the same resources, potentially leading to compounded or increased effects. Specifically, cumulative impact analysis evaluates whether the incremental impacts of a project, when considered together with the impacts of other past, present, and reasonably foreseeable future projects, may compound or increase environmental effects, resulting in a considerable contribution to cumulatively significant effects.

3.0.6 Cumulative Impacts

CEQA requires that in addition to project impacts, an EIR must discuss cumulative impacts. According to Section 15355 of the CEQA Guidelines, cumulative impacts refer to:

> "Two or more individual effects which, when considered together are considerable or which compound or increase other environmental effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of a project when added to other closely related past, present, and reasonably foreseeable probably future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Additionally, Section 15130(a) of the CEQA Guidelines States:

> "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable… When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR… An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant…if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact."

Pursuant to Section 15130(b)(1) of the CEQA Guidelines, an adequate cumulative impact analysis might be completed and may be based on:

- a list of past, present, and probable future projects producing related or cumulative impacts, or
- a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

To evaluate the cumulative impacts of implementation of the proposed project, the analysis in this EIR uses both of the above methods as appropriate for the cumulative topic being evaluated. For example, this EIR uses 2020 SCAG regional growth forecasts for 2035 in Section 3.9, Population and Housing. In contrast, a list of reasonably foreseeable future projects in the vicinity of the campus is used in Section 3.1, Aesthetics. In general, the geographic area that could be impacted by the Master Plan Update improvements related to cumulative impacts are presented in Table 3-1.

Table 3-1: Cumulative Impacts Geographic Setting

Resource Topic	Geographic Area
Aesthetics	Local (surrounding public viewpoints)
Air Quality	Regional (South Coast Air Quality Management District - pollutant emissions that have regional effects) and Local (immediate vicinity – pollutant emissions that are highly localized)
Biological Resources	Regional (County)
Cultural Resources	Local (City of Long Beach)
Geology, Soils, and Paleontological Resources	Local (immediate project vicinity)
Greenhouse Gas Emissions	Global
Hydrology and Water Quality	Regional (watershed and groundwater basin) and Local (immediate project vicinity)
Noise	Local (immediate project vicinity)
Population and Housing	Regional (SCAG area) and Local (City of Long Beach)
Public Services and Recreation	Local (City of Long Beach)
Transportation	Regional (SCAG area) and Local (City of Long Beach)
Tribal Cultural Resources	Local (City of Long Beach)
Utilities and Energy	Regional (energy provider) and Local (utility service areas)

The list of reasonably foreseeable future projects within approximately two miles of the main campus was obtained from the City of Long Beach's 2023 Capital Improvement Plan, the City's development projects map, and the City of Signal Hill's list of current projects.[12, 13, 14] No major projects were identified within a 2-mile radius of main campus in the cities of Seal Beach, Hawaiian Gardens, or Los Alamitos. This list includes projects that have been approved, but not yet constructed, or projects for which an application is pending. Additionally, major projects/plans outside of the 2-mile radius were considered due to their potential for regionwide/countywide impacts; however, upon review, no major projects/plans identified outside of the 2-mile radius have the potential to result in cumulatively considerable environmental impacts associated with implementation of the Master Plan Update. This list is not intended to be an all-inclusive list of projects in the region, but rather an identification of projects constructed, approved, or under review in the vicinity of the campus that have some relation to the environmental impacts associated with implementation of the Master Plan Update. The cumulative projects list is presented in Table 3-2. The locations of these projects are shown in Figure 3-1.

[12] City of Long Beach, Fiscal Year 2023 Adopted Budget Capital Improvement Program, available at: https://www.longbeach.gov/pw/resources/capital-improvement-plan/, accessed May 19, 2023.
[13] City of Long Beach, Development Projects Map, publiCity, available at: https://long-beach-ca-publicity.tolemi.com/, accessed May 19, 2023.
[14] City of Signal Hill, May 16, 2023, Current Projects, Community Development Department Development Status Report: Commercial-Industrial.

Table 3-2: Related Projects

Map ID	Project Name	Project Location	Project Description	Status
1	5150 Pacific Coast Hwy	5150 E Pacific Coast Hwy, Long Beach	Site Plan Review for the Adaptive Reuse of an existing seven-story office building to be converted into student housing that includes 149 suites with supporting assembly and office uses, dining, fitness and administration space	Under review
2	26 Point 2	3590 E Pacific Coast Hwy, Long Beach	Multi-Unit permanent supportive housing project located on a 23,087 square foot site. The residential component of the project, comprising 76 efficiency units and one two-bedroom manager's unit, is supplemented by common amenity and support services for the resident population. The project will include four stories of Type V construction over one level of podium with surface level parking.	Under construction
3	Staybridge Suites	2640 N Lakewood Blvd, Long Beach	5-story, 241 room dual branded hotel (Hampton Inn & Homewood Suites by Hilton). The project will include 143 rooms for Hampton Inn and 98 rooms for Homewood Suites. Amenities for both hotels will be shared and include a fitness center, pool, jacuzzi, game area, putting green, BBQ area, meeting space, board room, and large lodge/lounge area with 221 parking spaces.	Under construction
4	3320 N Los Coyotes Dia	3320 N Los Coyotes Diagonal, Long Beach	Pre-application review for the construction of an 85-unit, 76,500 square foot senior assisted living and memory care facility on a vacant parcel	Entitlements approved
5	Mixed-Use Project	6615 E Pacific Coast Hwy, Long Beach	Site Plan Review for 390 multi-family units in a 6-story wrap style building including: 5,000 square feet of ground floor retail, 647 parking spaces, 12,000 square feet of interior amenity space, 7,000 square feet of rooftop pool deck, and four courtyards	Under review
6	Omni Marina Shores	6500 E Pacific Coast Hwy, Long Beach	Site Plan Review and Local Coastal Development Permit for the development of a mixed-use project consisting of two, 5-story buildings with a total of 535,298 square-feet among 600 residential units and 2,274 square-feet of ground floor retail	Under review
7	Mixed-Use Project	6700 E Pacific Coast Hwy, Long Beach	Six stories with 303 units, 13 of which are affordable units. 3,105 square feet of ground floor retail	Under review
N/A	City of Long Beach Public Facilities Improvements	Various Locations	Improvements to City buildings to minimize structural deficiencies, extend the useful life of facilities, and improve energy efficiency - includes Fire Station 14 improvements	Design and construction on continuous basis

Table 3-2: Related Projects

Map ID	Project Name	Project Location	Project Description	Status
N/A	City of Long Beach Utilities Improvements	Various Locations	Construct water quality and drainage improvements citywide. Installation of connector pipe screens in existing priority catch basins to meet trash requirements mandated by the State Regional Water Quality Control Board and required monitoring, modeling, and implantation actions associated with Total Maximum Daily Loads as mandated by the State and Federal agencies	Design and construction on continuous basis
N/A	City of Long Beach Beaches and Marinas Improvements	Various Locations	New play structures and equipment and/or upgrades to existing play structures and equipment; restroom upgrades; improvements and maintenance to existing beach parking lots; remediation of eroded bluffs through stabilization, addition of retaining walls, and enhanced landscaping; improvements and repairs of aging Marina facilities; construct water quality and drainage improvements in the wetlands and Colorado Lagoon area to meet water quality requirements	Design and construction on continuous basis
N/A	City of Long Beach Mobility Improvements	Various Locations	Improvements along major roadways include transportation facilities that will improve the level of safety for all who traverse the corridors, including Studebaker Safety Improvements and Anaheim Corridor Safety Improvements	Design and construction on continuous basis
8	Industrial Building	1901 Freeman Avenue, Signal Hill	New 7,290 square foot Industrial Building	Preliminary Environmental Assessments

Note:
N/A = Locations are throughout the City of Long Beach and are not shown in Figure 3-1.

Figure 3-1: Related Projects

3.1 AESTHETICS

This section evaluates the potential aesthetic impacts of the proposed Master Plan Update pertaining to light and glare. This section presents the applicable regulatory setting, environmental setting, methodology for determining potential impacts, analysis of the potential aesthetic impacts resulting from implementation of the Master Plan Update, proposed measures to mitigate any significant or potentially significant impacts if such impacts are identified, and an analysis of potential cumulative impacts.

As discussed further in Section 3.1.3, Methodology, the CEQA Guidelines Appendix G checklist questions for aesthetics related to scenic vistas, scenic resources, and scenic quality were found to have no impact or a less than significant impact in the Initial Study prepared for the Master Plan Update, and thus, are not discussed in detail in this EIR.

Public comments related to aesthetics were received during the public scoping period in response to the NOP. These comments address the project's potential impact on scenic vistas, scenic resources, and light and glare. For a complete list of public comments received during the public scoping period, refer to Appendix A.

Light and Glare

The CSULB campus and Beachside Village property are located within the City of Long Beach, which is an urban area. Typical sources of nighttime lighting in urban areas include interior and exterior building and security lighting, streetlights, and vehicle headlights; illumination levels tend to be higher at major intersections. The CSU Outdoor Lighting Design Guide ("Guide")[1] defines light trespass as nuisance glare that is visible from adjacent properties. Uncontrolled light sources, such as floodlights and unshielded lighting, can create light trespass and glare. Glare also occurs when sunlight is reflected off the surfaces of buildings, objects (e.g., vehicle windshields), or by vehicle headlights on adjacent roadways. Facilities containing large expanses of reflective materials, such as glass, metal, or other polished surfaces, can contribute to daytime and nighttime glare. Excessive glare can restrict visibility and increase ambient heat reflectivity in a given area.

Typical terms related to light and glare used throughout this section are defined below.

- Light: For purposes of this analysis, light refers to the degree of brightness generated by a source of light. Light sources can include direct sources, such as a light fixture, or indirect sources, such as reflected light.
- Glare: Focused, intense light that occurs either directly from a light fixture or indirectly from reflective surfaces.
- Light Trespass: Nuisance light or glare that is visible from adjacent properties. Also known as "light spillover".
- Luminance/Illuminance: Intensity of light emanating from a light source.
- Luminaire: The complete electric lighting unit consisting of a light source, such as a lamp or lamps, together with the parts that distribute the light, position and protect the light source, and connect it to the power supply.

[1] The California State University, Office of the Chancellor, December 2018, *Outdoor Lighting Design Guide*.

- Backlight: A light source that comes from behind a subject.
- Uplight: A light source placed or designed to cast light upward.

3.1.1 Regulatory Setting

State

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations, known as the California Building Standards Code, outline building standards and requirements throughout the State. The Green Building Standards Code (CALGreen Code; Title 24, Part 11) Section 5.106.8 provides standards for light pollution reduction for nonresidential outdoor lighting systems. Such systems must be designed and installed to comply with the following:

1. Minimum requirements in the California Energy Code for Lighting Zones 0-4 as defined in Chapter 10, Section 10-114 of the California Administrative Code, which establishes rules for implementing outdoor lighting zones. Lighting zones correspond to exterior lighting allowances and specify the relative ambient illumination level and the statewide default location for each lighting zone;

2. Backlight (B) rating as defined in Illuminating Engineering Society's Technical Manual for Luminaire Classification Systems for Outdoor Luminaires (IES TM-15-11). This manual defines a luminaire[2] classification system and provides information regarding lumen[3] distribution within solid angles of specific interest; it also provides application examples of the classification system.[4] Backlight ratings are used to evaluate luminaire optical performance related to light trespass;

3. Uplight (U) and Glare (G) ratings as defined in California Energy Code Chapter 8, Tables 130.2-A and 130.2-B. Uplight and Glare ratings are used to evaluate luminaire optical performance related to skyglow[5] and high angle brightness control (i.e., offensive light), respectively; and

4. Allowable Backlight, Uplight and Glare (BUG) rating not exceeding those shown in Table 5.106.8 (Maximum Allowable BUG Ratings) of the CALGreen Code, or comply with a local ordinance lawfully enacted pursuant to Section 101.7 of the CALGreen Code, whichever is more stringent.[6]

The California Energy Code (Title 24, Part 6) mandates all permanently installed outdoor lighting to be controlled by a photosensor or astronomical time switch to automatically turn off lighting when daylight is available. In addition, lighting of building facades, parking lots, garages and canopy luminaires mounted below 24 feet must be controlled such that the power usage in watts can be reduced by 40-90 percent.

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2 The term "luminaire" refers to the complete electric lighting unit consisting of a light source, such as a lamp or lamps, together with the parts that distribute the light, position and protect the light source, and connect it to the power supply.

3 The term "lumen" is defined as the measure of brightness from a light source.

4 Illuminating Engineering Society, Lighting Practice, Product Description for Luminaire Classification System for Outdoor Luminaires, available at: https://store.ies.org/product/tm-15-20-technical-memorandum-luminaire-classification-system-for-outdoor-luminaires/, accessed May 26, 2022.

5 The term "skyglow" refers to the brightness of the night sky in an urban area as a result of light pollution.

6 California Code of Regulations, Title 24, Part 11, Section 5.106.8.

Additionally, Chapter 12, Section 1205.7 of the California Building Standards Code requires that parking facilities and primary walkways at CSU campuses follow the lighting standards of the most current edition of the Illuminating Engineering Society lighting handbook. The lighting handbook includes standards for design criteria by application (e.g., residential, educational facilities, etc.); testing and measurement standards for light sources; lighting practice standards, such as design principles for indoor and outdoor environments, descriptions of light sources, lighting maintenance, etc.; lighting science standards, such as visual performance, color appearance, and lighting calculations; and roadway and parking facility lighting standards.[7]

California State University

Outdoor Lighting Design Guide

The CSU Outdoor Lighting Design Guide provides goals and strategies to be implemented on CSU campuses for outdoor lighting, focusing on safety, energy efficiency, and aesthetics. The Guide includes lighting design goals, lighting design strategies to meet design goals, control strategies and methods, lamp types preferred for energy and maintenance savings, and State regulations and requirements. The Guide requires that outdoor lighting on CSU campuses comply with the California Energy Code (California Code of Regulations Title 24, Part 6) Section 140.7 for maximum requirements for outdoor lighting power allowances and mandatory control requirements; California Electrical Code (California Code of Regulations Title 24, Part 3) for electrical requirements; and CALGreen Code for additional requirements.[8]

Special attention is given to reducing or avoiding light pollution and trespass (i.e., nuisance glare that is visible from adjacent properties) and minimizing glare. Design goals and strategies related to light pollution, light trespass, and glare include the following:

- Use fully shielded luminaires for area and roadway lighting with a minimal Uplight rating;
- Where possible, use motion sensors to control lighting only when needed;
- Consider dimming or turning off lighting when not needed and activate with motion sensors or timers when activity occurs to minimize light trespass into building interiors;
- Adhere to local codes and ordinances regarding luminaire selection, BUG requirements, and lamp type or lamp color temperature;
- Do not over-light areas;
- Locate luminaires to avoid any direct light into adjacent building windows, especially dorm rooms;
- Luminaires attached to exterior building facades should be located between, rather than directly above, windows; in the nighttime environment, maintain luminance levels in approximately the same range by illuminating building surfaces and shielding light sources.[9]

[7] Illuminating Engineering Society, Lighting Library Contents, available at: https://store.ies.org/product-category/lighting-library/, accessed May 25, 2022.
[8] The California State University, Office of the Chancellor, December 2018, *Outdoor Lighting Design Guide*.
[9] Ibid.

The CSU Executive Order 0987, Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management

This policy statement is issued under the CSU Executive Order 0987 and sets minimum efficiency standards for CSU buildings and establishes sustainable operating practices. While these standards pertain to energy efficiency, the following policies under Physical Plant Management are applicable to indoor and outdoor lighting usage:

3. Physical Plant Management
    10. All lighting, except what is required for security purposes, will be turned off when buildings and facilities are unoccupied, such as at the end of the workday. Custodial personnel will turn lights back on only for the time actually required for custodial work.
    11. …[L]ighting systems will not be operated any more or longer than what it required under health and safety codes during low load custodial occupancy periods.
    12. Indoor lighting will be reduced in number and/or wattage, wherever possible, to provide for the minimum but adequate lighting levels consistent with the needs of instructional programs and state-mandated standards for the efficient and effective use of the space. Existing incandescent lamps for general-purpose lighting will be phased out and future incandescent lamps will not be allowed unless exempted for very limited and specialized tasks by the campus energy/utility managers. New lighting systems will be in the form of the latest energy saving technology.
    13. Outside lighting on building exteriors and campus grounds will be maintained at levels necessary to provide security and safety to promote confidence within the campus community.
    14. Purely decorative lighting on CSU campuses beyond reasonable display lighting, inside or outside, will not be added. Existing decorative lighting beyond reasonable display lighting will be eliminated on a continuing basis. In general, lighting will not be used for commercial or holiday purposes unless specifically exempted by the campus president.

Local

CSULB is an entity of the CSU, a state agency, and the campus is state-owned property; therefore, development on the campus is not subject to local policies, regulations, or ordinances governing light and glare. Nonetheless, the City's regulation pertinent to light and glare are described for informational purposes only, and not as the basis for the determination of significant impact for purposes of CEQA.

City of Long Beach General Plan Urban Design Element

The Urban Design Element of the City of Long Beach General Plan includes goals and policies guiding the physical character and organization of the relationship between people and the urban environment, such as the form and character of buildings and exterior pedestrian spaces. The policy pertaining to outdoor lighting is as follows:

- Policy UD 14-6: Minimize obtrusive light by limiting outdoor lighting that is misdirected, excessive, or unnecessary.

3.1.2 Environmental Setting

Lighting

CSULB Main Campus and Beachside Village Property

The CSULB main campus is characterized by a moderate to high level of nighttime illumination to allow for nighttime operation of campus facilities and events, on-campus housing, and safety/security purposes. Existing sources of lighting at the CSULB main campus and at the Beachside Village property primarily consist of interior and exterior building lighting; exterior security and safety lighting on and around buildings, parking areas, and pedestrian, bicycle, and vehicular circulation pathways; and illuminated identification and wayfinding signage. Light sources at the campus that can be seen from adjacent properties include those from facilities at the perimeter of the CSULB main campus, while lighting on the interior of the main campus is not easily seen from the surrounding areas, with the exception of the stadium lighting at the athletics fields in the North District area of the main campus.

South District

The South District is bounded by interior campus uses on the north and bounded on the west by the Veteran's Affairs Medical Center complex, which is characterized by hospital and ancillary facilities. The eastern boundary of the district is East Campus Drive, which directly abuts the Bixby Hill residential neighborhood, characterized by single-family homes. The southern boundary of the district is 7th Street/SR-22, a six-lane highway that transitions to a local arterial. Just south of 7th Street are the University Park Estates and Bixby Village residential neighborhoods, which are generally characterized by single-family residences.

Primary light sources in the South District of the CSULB main campus include interior and exterior building and security lighting associated with the academic, administrative, and student services facilities in this portion of the campus, most which are interior to the campus and not visible from off-site locations. The Microbiology Building in the northeastern portion of the district is the tallest building located at the eastern boundary along East Campus Drive and the upper portion of this building may be visible from adjacent residential properties in the Bixby Hill neighborhood on the east. However, the Microbiology Building does not contain any substantial light sources on the east side of the building facing residential properties. Other light sources in the South District include parking lot lighting in surface parking lots located in the northwest, southwest, southeast, and eastern edges of the South District. Street and pedestrian lighting is provided on West Campus Drive, 7th Street, and East Campus Drive. The campus quadrangle, located on the interior of the South District, provides pedestrian lighting along pathways. Digital lighted signage is located at the campus entrance at 7th Street and West Campus Drive.

Sensitive land uses adjacent to the South District include residential neighborhoods on the east and south. Views toward the campus from the residential properties in the Bixby Hill neighborhood on the east are generally blocked by tall, dense landscaping and fencing along the east side of East Campus Drive. Views of the campus from the University Park Estates and Bixby Village residential neighborhoods to the south are generally not available, as these properties are located at a lower elevation than the campus. Additionally, they are physically separated from the campus by a landscaped berm leading up to a wall along the six-lane 7th Street right-of-way, all of which create a visual barrier of the South District from the properties to the south.

Views of existing facilities in the South District are shown in Figure 3.1-1a, views 1 and 2, and Figure 3.1.b, view 3. View 1 shows the campus quadrangle, which contains lighted pedestrian pathways, grass lawn areas, and mature trees. The McIntosh Humanities Building and the Fine

Arts buildings in the southeastern portion of the South District are visible in the background in view 1. View 2 shows Parking Lot G15 and the Microbiology Building on the eastern boundary of the South District along East Campus Drive. View 2 also shows the existing landscape screening present on both the west and east sides of East Campus Drive. Residential properties are located downslope to the east of the landscaping and fencing on the east side of East Campus Drive. View 3 shows the existing lighted signage and landscaping at the campus entrance at the northeast corner of 7th Street and West Campus Drive.

Central District

The Central District is located primarily in the interior of the CSULB main campus with only the southwestern boundary abutting the off-site Veteran's Affairs Medical Center complex, which is not a sensitive land use. Additionally, there is an elevation drop moving north across the CSULB main campus from the South District to the Central District such that the majority of the buildings in the Central District are not easily seen from off-site locations.

Primary light sources in this district include parking lot lighting; street and pedestrian lighting on internal campus roadways and pedestrian pathways; and interior and exterior building lighting from the Family and Consumer Sciences Building, School of Nursing Building, and the Anna W. Ngai Alumni Center along Beach Drive; administrative and academic facilities on the interior of the CSULB main campus; and the Central Plant facility at the intersection of East Campus Drive and State University Drive, which is shielded from off-site locations by landscaping.

The campus facilities in the Central District do not abut sensitive land uses and are not typically visible from off-site locations and, therefore, are not considered major sources of light.

Views of existing facilities in the Central District are shown in Figure 3.1-1b, view 4 and Figure 3.1-1c, view 5. View 4 shows the elevation drop that occurs from south to north in the Central District. In this view, which looks north from West Campus Drive, the Brotman Hall administrative building is shown on the left and the Go Beach Sign is shown on the right. Lighting in this area consists of street, pedestrian, and building lighting. In addition to the elevation change, landscaping and mature trees screen much of the facilities on the interior of the main campus. View 5 shows the newly constructed Anna W. Ngai Alumni Center and School of Nursing Building located at the southern boundary of the Central District. Each of these facilities contain typical building lighting present on the CSULB campus.

East District

The East District is bounded by Long Beach Fire Station 22 and a strip mall with commercial retail uses fronting Atherton Street on the north, Palo Verde Avenue on the east, State University Drive on the south, and interior campus uses on the west. East of Palo Verde Avenue and north of Atherton Street is the Los Altos residential neighborhood, which is characterized by single-family homes with commercial properties along Atherton Street to the north and northeast of the district. Directly south of the East District, south of State University Drive, is CSULB-leased property containing the 49ers Foundation Building, the LDS Institute of Religion, and a three-story multi-family apartment building located at the southwest corner of Palo Verde Avenue and State University Drive. This apartment building is part of the gated Bixby Hill neighborhood to the southeast of the CSULB main campus, which is characterized by two- to three-story multi-family residential buildings north of the Bouton Creek Channel.

The East District is characterized by surface parking lots along the northeastern and southeastern boundary of the campus, which provide increased setbacks for buildings from Palo Verde Avenue. Additionally, landscaping is provided along Palo Verde Avenue at the eastern boundary of the campus, creating a visual barrier and breaking the direct line of sight toward the facilities at the eastern edge of the campus. As such, primary light sources at this location include street and pedestrian lighting and headlights from vehicles traveling on Palo Verde Avenue and State University Drive. Facilities on the interior of the East District are not generally visible from off-site locations with the exception of the Engineering and Computer Science Building, the upper floors of which are visible from residential properties to the east. Other facilities in the East District that are visible from off-site properties are those at the perimeter of the campus boundary. Interior and exterior building and security lighting are provided on the Design Building at the southeast boundary of the main campus; the Engineering and Computer Science on the interior of the district; and the Engineering Technology Building, Beach Building Services facilities, and the Student Recreation and Wellness Center along Palo Verde Avenue. The three-story Palo Verde parking structures are located in the northern portion of this district, which are set back from Palo Verde Drive by surface parking lots and landscaping. The parking facilities include parking and security lighting.

Sensitive land uses adjacent to the East District include the residential neighborhoods on the east and south. Views toward the East District from the residential properties north of Atherton Street are not generally available due to the existing landscaping and the retail and commercial properties and the fire station along Atherton Street, which obscure views of the East District from the north. Views toward the campus from the residential properties in the Los Altos neighborhood on the east are generally blocked by landscaping and a wall along Palo Verde Drive. Views of the campus from the Bixby Hill residential neighborhood to the south are available from the adjacent multi-family apartment building at the southwest corner of Palo Verde Avenue and State University Drive.

Figure 3.1-1c, view 6 shows the typical landscape screening present along Palo Verde Avenue at the eastern boundary of the East District. View 6 looks west from Palo Verde Avenue toward Parking Lot E6 and the Design Building near the northwest corner of Palo Verde Avenue and State University Drive. Lighting at this location includes street, parking, and building lighting.

North District

The northern border of the North District is Atherton Street, which is a five-lane roadway with landscaped medians separating the westbound lanes from the eastbound lanes, as well as landscaped medians between the main Atherton Street right-of-way and the portion of Atherton Street that provides local access to the Los Altos neighborhood on the north. The North District is bounded on the east, south, and west by interior campus uses.

The primary light sources in the North District that are visible from off-site locations include street and pedestrian lighting on the northern boundary of the main campus, and exterior building lighting at the Carpenter Performing Arts Center and the Walter Pyramid, although the Walter Pyramid is set back from Atherton Street by a large grass-covered lawn. Two surface parking lots are located in the northwestern and northeastern portions of this district, which have parking, security, and pedestrian lighting. The remainder of the facilities in the North District are on the interior of the main campus and include most of the campus's athletic fields. Light sources from these facilities are generally not visible from off-site locations, with the exception of the stadium lighting at the George Allen Soccer Field, which could be a source of nighttime skyglow visible from off-site locations.

Sensitive land uses adjacent to the North District include the residential properties in the Los Altos neighborhood on the north side of Atherton Street. Unobstructed views of the North District from the residential properties to the north are generally not available due to the layers of landscaping provided by street trees on the north sidewalk of Atherton Street, the two landscaped medians that contain mature trees, and landscaping south of Atherton Street within the main campus.

Views of existing facilities in the North District are shown in Figure 3.1-1d, views 7 and 8. View 7 shows the Walter Pyramid as seen looking south from Atherton Street. The existing landscaped set back and pedestrian lighting can be seen in view 7. View 8 shows the existing light poles at George Allen Soccer Field in the eastern portion of the North District on the interior of the main campus.

West District

The West District is bounded by Atherton Street and the Los Altos neighborhood on the north and interior campus uses on the east. The Veteran's Affairs Medical Center complex property abuts the district on the south. North of Bouton Creek, the Whaley Park Community Center and baseball field forms the western boundary of the district. South of Bouton Creek, the western boundary of the West District abuts the westernmost portion of the CSULB main campus, which includes the undeveloped parcel with no lighting that contains the National Register-listed Puvunga Indian Villages Site Archaeological District; a surface parking lot with parking lighting; and the Earl Burns Miller Japanese Garden, which includes low-level landscape lighting not visible from off-site locations.

The West District contains the majority of the student residence halls and supporting facilities, such as dining halls and parking facilities. Primary light sources in the West District visible from off-site locations include interior and exterior building and security lighting on the three-story Parkside North student housing building at the northern boundary of the district along Atherton Street. The Child Development Center at the northwestern boundary of the main campus includes lower profile, single-story buildings shielded by a wall. The southern portion of the West District is interior to the campus and includes the Parkside and Hillside student housing facilities, as well as surface parking lots and interior roadways. These facilities are not visible from any off-site locations. The International House at the southwestern border of the district abuts the Veterans Affairs Medical Center complex, which is not a sensitive use.

Sensitive land uses adjacent to the West District include the residential properties in the Los Altos neighborhood on the north side of Atherton Street. Unobstructed views of the Parkside North building are available from residential properties directly to the north. Views of on-site facilities are not available from properties in the Park Estates neighborhood west of Bellflower Boulevard as there is a wall and trees abutting the properties along the west side of Bellflower Boulevard, and trees and the undeveloped parcel in the western portion of the main campus create a visual barrier from off-site locations to facilities in the West District of the campus.

Views of existing facilities in the West District are shown in Figure 3.1-1e, views 9 and 10. View 9 shows the Parkside North student housing building from Determination Drive in the northern portion of the West District. Landscaping and street lighting are present along the west side of Determination Drive. View 10 shows the Hillside Village residence halls on the north side of Beach Drive. This portion of the district contains landscaped lawn areas and mature trees, and typical building lighting is present on the residential buildings.

Beachside Village Property

The Beachside Village property is located approximately 0.6 miles west of the CSULB main campus and is bounded by multi-family residential uses to the west and northwest, commercial uses to the north, east, and southeast, and Pacific Coast Highway to the south and southwest. The Beachside Village property contains surface parking lots and a grass lawn area at the entrance to the property such that the residence halls and the dining hall are set back approximately 250 feet from Pacific Coast Highway.

Primary light sources at the Beachside Village property include interior and exterior building and security lighting on the three-story residence halls and the dining hall building, and parking and pedestrian lighting throughout the property.

Sensitive land uses adjacent to the Beachside Village property include the adjacent residential neighborhoods to the west and northwest, as well as the residential neighborhoods southwest across Pacific Coast Highway. Views toward the Beachside Village property from the adjacent residences to the west and northwest are intermittent and broken up by a wall and landscaping at the property boundary. Unobstructed views of the Beachside Village property are available from second-story windows at the adjacent properties; however, there are no substantial sources of light at the site. Unobstructed views of Beachside Village from the residential neighborhood on the south side of Pacific Coast Highway are not generally available, as the five-lane road right-of-way, landscaping at the property line, and increased setback of the buildings from Pacific Coast Highway create physical barriers that break up the line of sight to Beachside Village from the south. Existing lighting at the Beachside Village property is consistent with that of the surrounding residential and commercial uses.

Views of the Beachside Village property are shown in Figure 3.1-2, views 1 and 2. View 1 shows the main entrance to the Beachside Village property on the north side of Pacific Coast Highway. Landscaping, mature trees, and street lighting are present along Pacific Coast Highway, and the facilities at the Beachside Village property are set back from the property boundary. View 2 shows the portion one of the residence halls at the Beachside Village property that is visible from Clark Avenue. As show in view 2, awnings are provided over all windows and parking lot and security lighting are present at the northern boundary of the property along the fence line.

View 1 (South District): View from the campus quadrangle looking southeast toward the McIntosh Humanities Building and the Fine Arts buildings.

View 2 (South District): View from Parking Lot G15 adjacent to East Campus Drive looking north toward the Microbiology Building. Landscape screening is present on both sides of East Campus Drive.

Figure 3.1-1a: Existing Facilities at the CSULB Main Campus

View 3 (South District): View from 7th Street looking northwest toward the signage and landscaping at the entrance to the CSULB main campus at 7th Street and West Campus Drive.

View 4 (Central District): View from West Campus Drive near the intersection with Beach Drive, looking north toward Brotman Hall and the Go Beach sign; the Walter Pyramid is in the background.

Figure 3.1-1b: Existing Facilities at the CSULB Main Campus

View 5 (Central District): View from Beach Drive looking south toward the newly constructed Anna W. Ngai Alumni Center; the School of Nursing Building is to the west (right).

View 6 (East District): View from Palo Verde Avenue looking west toward Parking Lot E6 and the Design Building near the northwest corner of Palo Verde Avenue and State University Drive. Landscape screening is present along Palo Verde Avenue.

Figure 3.1-1c: Existing Facilities at the CSULB Main Campus

View 7 (North District): View from Atherton Street looking south toward the Walter Pyramid.

View 8 (North District): View from an interior pedestrian walkway looking east at the existing light poles at George Allen Soccer Field.

Figure 3.1-1d: Existing Facilities at the CSULB Main Campus

View 9 (West District): View from Determination Drive looking northwest toward the Parkside North building.

View 10 (West District): View from Beach Drive looking northwest toward the Hillside Village residence halls.

Figure 3.1-1e: Existing Facilities at the CSULB Main Campus

View 1: View from Pacific Coast Highway looking northeast toward the Beachside Village property.

View 2: View from Clark Avenue looking southwest toward the Beachside Village property.

Figure 3.1-2: Existing Facilities at the Beachside Village Property

Surrounding Area

Light sources in the surrounding area consist of street lighting, interior and exterior building lighting, and vehicle headlights on the surrounding roadways. These sources of light are typical of those in a developed area. Existing roadways form the boundaries of the CSULB main campus. As such, primary sources of lighting directly adjacent to the main campus are street and pedestrian lighting and vehicle headlights on Atherton Street on the north, Palo Verde Avenue on the east, 7th Street and Beach Drive on the south, and Bellflower Boulevard on the west. The residential communities to the north, east, southeast, south, and west primarily consist of one- or two-story single-family residences. Taller multi-family residential buildings are located in the Bixby Hill neighborhood southeast of the main campus along Riviera Circle east of East Campus Drive. The surrounding residential neighborhoods are visually separated from the main campus by walls and landscaping that break the line of sight between the adjacent neighborhoods and the main campus, particularly along East Campus Drive, 7th Street, and Bellflower Boulevard. Exterior building and street lighting in these areas are typical of urban residential neighborhoods.

Commercial uses are concentrated at the intersections of Atherton Street and Bellflower Boulevard and Atherton Street and Palo Verde Avenue to the northwest and northeast of the main campus, respectively. The commercial properties consist of interior and exterior building lighting and lighted signage. Additionally, the Whaley Park Community Center directly adjacent to the northwestern boundary of the main campus includes field lighting at the baseball field that is visible from Bellflower Boulevard.

The area adjacent to the southwestern boundary of the main campus, east of Bellflower Boulevard and north of 7th Street, is the 100-acre Veteran's Affairs Medical Center complex. The property contains surface parking lots with parking and security lighting at the northern and southern boundaries. Most buildings at the Veteran's Affairs Medical Center complex are two- to three-story facilities. The tallest building on the property is the approximately ten-story Medical Center tower located at the main entrance off of 7th Street. All buildings include interior and exterior building and security lighting; internal vehicular and pedestrian pathways contain street and pedestrian lighting; and internal gardens and landscaped areas contain landscape lighting. Lighting at the Veteran's Affairs Medical Center complex is consistent with the types and levels of lighting found in urban areas.

The area surrounding the Beachside Village property is developed with residential, commercial, and institutional uses. With its location on Pacific Coast Highway, a major roadway in the area, primary sources of lighting near the Beachside Village property include street and pedestrian lighting, and vehicle headlights. Other light sources include exterior building and security lighting on the residential and commercial properties located to the west, north, and east of the Beachside Village property. Street lighting is provided on both sides of Clark Avenue east of Beachside Village. Lighted signs are present near the entrances to the commercial businesses on Pacific Coast Highway south of Beachside Village. The residential communities to the south and west of the Beachside Village property, south of Pacific Coast Highway, primarily consist of one- and two-story single-family residences, with a few two- and three-story multi-residential buildings on Park Avenue. Lighting in these residential communities consists of exterior building and street lighting typical of urban residential neighborhoods.

The CSULB main campus, Beachside Village property, and surrounding areas experience moderate to high levels of nighttime illumination due to the urban and developed nature of the area.

Glare

CSULB Main Campus and Beachside Village Property

Existing building materials for facilities on the CSULB main campus and the Beachside Village property are predominantly non-reflective, consisting of concrete, stucco, and brick. Figure 3.1-1 shows the existing conditions at facilities at the main campus. Figure 3.1-2 shows existing conditions at the Beachside Village property. Potential sources of glare that could affect sensitive off-site receptors include facilities around the perimeter of the CSULB main campus with large expanses of reflective materials, such as windows or metal panels, which are generally not present. Facilities on the perimeter of the main campus with windows that face off-site properties include the Engineering/Computer Science Building and the Student Recreation and Wellness Center in the East District; the Carpenter Performing Arts Center in the North District; and the Parkside North Building in the West District. Most of the perimeter of the main campus is landscaped and/or lined with street trees, which serve to break the direct line of sight between the campus and the surrounding land uses and help minimize glare from reflective surfaces. Additionally, facilities and buildings within the interior of the main campus are typically not visible from locations off-site, with the exception of existing stadium lighting at the George Allen Soccer Field, which could be a source of nighttime glare for off-site locations.

While the residence halls at the Beachside Village property have glass windows, they are shielded with awnings to reduce glare and reflectivity and are set back from public roadways. No other potential sources of glare that could affect off-site properties are present at the Beachside Village property. Additionally, street trees along Pacific Coast Highway and landscape trees through the Beachside Village property serve to break the direct line of sight between Beachside Village and the surrounding land uses, further minimizing potential glare.

Surrounding Area

The residential and commercial uses in the area surrounding the main campus and the Beachside Village property are constructed of predominantly non-reflective building materials. Tall facilities featuring large expanses of windows or other reflective materials are generally absent from the surrounding area. As previously discussed, the residential communities to the north, east, southeast, south, and west of the main campus and to the south and west of the Beachside Village property primarily consist of one- or two-story single-family residences with some slightly taller multi-family residential buildings as well as some low-rise commercial buildings. Buildings in the area are typically constructed of stucco, brick, and wood. Additionally, the residential neighborhoods directly to the south and east of the CSULB main campus and to the south and west of the Beachside Village property have street trees, landscaping, and walls separating these uses from the campus. The buildings on the Veterans Affairs Medical Center property to the southwest of the CSULB main campus are generally constructed of stucco and concrete and do not contain areas with large expanses of windows or other reflective materials. The tallest building at the Veterans Affairs Medical Center is the approximately ten-story Medical Center tower, which does not have large expanses of windows that could be a source of glare. Noticeable glare from buildings in the surrounding area is considered low.

3.1.3 Methodology

The potential for the Master Plan Update to result in aesthetics impacts is based on a review of the existing sources and types of light and glare from the CSULB main campus and the Beachside Village property, and whether the Master Plan Update would add any new substantial sources of light and glare that could affect sensitive (i.e., residential) off-site properties, considering both the campus-wide improvements and any relevant individual near- and/or mid-term projects. The

potential for development under the Master Plan Update to result in light and glare impacts would be limited to those facilities that would be visible from off-site locations, particularly any facilities located at the perimeter of the CSULB main campus or the Beachside Village property that are adjacent to surrounding sensitive uses. It is assumed that all development under the Master Plan Update would comply with applicable CSU, CSULB, and other state policies, regulations, and procedures governing development on CSULB property related to lighting standards and building materials.

Near- and mid-term development projects with the potential to result in light and glare impacts include those projects that would be visible from off-site locations, particularly projects that would be located on the perimeter of the main campus adjacent to surrounding sensitive residential land uses. Further, projects involving only interior renovations to existing buildings would not have the potential to create new substantial sources of light or glare. Thus, the analysis in this section focuses on the following types of projects that would be located adjacent to sensitive uses: replacement projects, renovation projects involving exterior renovations and/or additions to existing buildings, and projects involving construction of new buildings. The following discussion provides the rationale for the project-level analysis for projects proposed in each district.

South District

Sensitive land uses adjacent to the South District include the residential neighborhoods on the east and south. Two proposed projects near the campus boundaries in this district include the College of the Arts Replacement Building and the New 7th Street Community Outreach Facility. As previously stated, views of the campus from the residential neighborhoods to the south are generally not available due to the elevation difference and the physical separation of the residential properties from the southern boundary of the campus. The proposed New 7th Street Community Outreach Facility would be located near the southwest boundary of the South District and would not be visible from nearby sensitive uses. The proposed College of the Arts Replacement Building would be located near the eastern boundary of the district near sensitive residential properties to the east of East Campus Drive. This project involves construction of a new taller building at the site of the existing Fine Arts 3 building, which may be visible from off-site locations. Potential light and glare impacts resulting from the College of the Arts Replacement Building are analyzed in Section 3.1.4, Impact Analysis, below.

Central District

The facilities in the Central District do not abut sensitive land uses, as such, none of the near- or mid-term projects proposed in the Central District include improvements that would be visible from off-site locations.

East District

Sensitive land uses adjacent to the East District include the residential neighborhoods on the east and south. The proposed Faculty and Staff Housing project would be located at the northwestern corner of State University Drive and Palo Verde Avenue adjacent to existing residential uses. Potential light and glare impacts resulting from the proposed Faculty and Staff Housing project are analyzed in Section 3.1.4, Impact Analysis below.

North District

Sensitive land uses adjacent to the North District include the Los Altos residential neighborhood north of Atherton Street. Proposed near- and mid-term projects in the North District that may be visible from adjacent sensitive uses include the installation of new permanent flood lighting at the Jack Rose Track/Commencement Facilities and the proposed Walter Pyramid Renovation, which includes installation of new roof tiles. Potential light and glare impacts resulting from these proposed projects are analyzed in Section 3.1.4, Impact Analysis, below.

West District

Sensitive land uses adjacent to the West District include the residential properties in the Los Altos neighborhood on the north side of Atherton Street. None of the near- or mid-term projects proposed in the West District would abut sensitive land uses.

Beachside Village Property

Sensitive land uses adjacent to the Beachside Village property include the residential neighborhoods to the west, northwest, and southwest across Pacific Coast Highway. Proposed improvements at the Beachside Village property involve partial exterior renovations, including installation of new windows. Potential light and glare impacts resulting from the proposed improvements are analyzed in Section 3.1.4, Impact Analysis, below.

Thresholds of Significance

The significance threshold used to evaluate the impacts of the Master Plan Update related to aesthetics are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to aesthetics if it would:

- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Issues Not Evaluated Further

The Master Plan Update would not result in significant impacts related to the following CEQA Guidelines Appendix G checklist questions, as determined in the Initial Study (Appendix A), and therefore are not evaluated further in this Draft EIR.

- *Would the project have a substantial adverse effect on a scenic vista?*

  Scenic views or vistas are defined as panoramic public views of various natural features, including the ocean, striking or unusual natural terrain, or unique urban or historic features. Public access to these views may be from park lands, private and publicly owned sites, and public rights-of-way. The City of Long Beach identifies the following open space and natural areas as scenic resources: beaches, wetlands, and coastline.[10,11] No views of beaches, coastline, open space and natural areas are available from public vantage points on or around the CSULB campus. The nearest wetland area to the main campus and the Beachside Village property is Colorado Lagoon, located approximately 1 mile southwest of the main campus. Views of Colorado Lagoon are not available from the CSULB campus or the Beachside Village

[10] City of Long Beach, December 2019, General Plan - Land Use Element.
[11] City of Long Beach, October 2022, General Plan - Open Space and Recreation Element.

property due to their distance from the campus and the topography of the area. No designated scenic vistas from public lands have been identified that include the CSULB campus or the Beachside Village property and none are available from the CSULB campus or the Beachside Village property. Therefore, no impact to scenic vistas would occur.

- *Would the project significantly damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

  There are no designated state scenic highways near the main CSULB campus. Pacific Coast Highway is located nearby and is eligible for inclusion in the state scenic highway system; however, it is not formally designated as of the time of this writing.[12] Views of the main CSULB campus are not accessible from Pacific Coast Highway. The Beachside Village property is situated adjacent to Pacific Coast Highway. However, there are no scenic resources located within this portion of Pacific Coast Highway that would be impacted during implementation of the Master Plan Update. Additionally, Beachside Village is not a historic building and all proposed improvements at this location would be interior building renovations, which would not be visible from Pacific Coast Highway. Therefore, no impact related to scenic resources within a state scenic highway would occur.

- *Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

  The CSULB campus and Beachside Village property are located in the urbanized area of the City of Long Beach, as shown in the existing conditions in Figures 3.1-1 through 3.1-4. Development under the Master Plan Update would be characterized as in-fill development within the boundaries of the CSULB main campus and Beachside Village property. The area surrounding the CSULB main campus and Beachside Village property is also fully built out with urban development, including residential neighborhoods; commercial, retail, and institutional uses; and public open space and recreational areas. Proposed development under the Master Plan Update would be consistent with existing campus facilities that are currently visible from off-site locations, and landscaped areas would be maintained and would provide partial screening in some perimeter areas of the campus. Additionally, proposed improvements at the Beachside Village property involve partial exterior renovations that would be consistent with the existing facilities at that location.

  As a state-owned property, the CSULB campus is not subject to local regulations governing scenic quality. All proposed improvements would be designed to be compatible with existing CSULB buildings to remain. Upon approval of the Master Plan, all proposed improvements would be required to demonstrate consistency with design guidelines prepared as part of the Master Plan, at the time of project implementation. Therefore, impacts related to consistency with regulations governing

[12] California Department of Transportation, California State Scenic Highway System Map, available at: https://www.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa, accessed May 25, 2022.

scenic quality would be less than significant.

3.1.4 Impact Analysis

The impact analysis below is organized by a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of projects developed over a multi-year planning horizon for the CSULB campus. For the project level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below analyzes those projects that would be developed adjacent to sensitive residential uses.

AES-1 Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Program-Level Analysis for Master Plan Update

Construction

As discussed in Section 2.7 in Chapter 2, Project Description, of this EIR, the majority of construction activities are anticipated to occur during daytime hours, generally 7:00 a.m. to 4:00 p.m., Monday through Friday. However, it is anticipated that some nighttime work may be required in order to maintain construction schedules and minimize potential road detours. Construction activities associated with the proposed Master Plan Update improvements would not require substantial nighttime lighting. It is anticipated that low-level lighting would be used to secure equipment or any active construction site. Although not anticipated, spillover lighting may occur with the use of lighting during nighttime construction activities when construction is occurring adjacent to sensitive land uses (i.e., residential). In order to minimize the potential impact of spillover lighting on adjacent residential uses, Mitigation Measure AES-A would be implemented to require all lighting to be shielded and focused on the construction site. Construction materials and vehicles would not introduce any nuisance glare during daytime construction as these are typical of urban environments. Additionally, construction-related sources of nighttime lighting or glare would be temporary and would be removed upon completion of the activities requiring lighting, if any. With implementation of Mitigation Measure AES-A, impacts from light and glare would be less than significant during construction.

Operation

As discussed above, the CSULB main campus is currently characterized by a moderate to high level of nighttime illumination to allow for nighttime operation of campus facilities and events, on-campus-housing, and safety/security purposes. As discussed previously, potential light and glare impacts would be limited to those facilities that would be visible from off-site locations, particularly any facilities located at the perimeter of the main campus or the Beachside Village property adjacent to residential areas. Implementation of the improvements under the proposed Master Plan Update would create new sources of light associated with interior and exterior building lighting from new and relocated facilities. Additionally new security and safety lighting would be installed with mobility and circulation improvements, such as enhanced lighting along pathways used after dark, new pedestrian crossings and pathways, and updated identification and wayfinding signage. These improvements would primarily occur along pathways internal to the CSULB main campus, although some improvements would be located at various locations around the main campus periphery that interface with off-site vehicle, bicycle, and pedestrian facilities. However, proposed development would be sited in proximity to other on-campus development, which already contains numerous existing sources of lighting.

The types of lighting to be incorporated with development under the Master Plan Update would

be similar to those already used and would include replacement lighting that is consistent with the CSU Outdoor Lighting Design Guide. As such, it is not anticipated that development under the Master Plan Update would substantially change the levels of nighttime illumination on the main campus, Beachside Village property, or in the surrounding areas. In accordance with CSU policy, all interior lighting not required for security purposes would be turned off when buildings and facilities are unoccupied, and outside lighting would be maintained at levels necessary for security and safety, reducing the potential for over-lighting. Additionally, all development on the campus would be required to comply with the applicable development standards and regulations for exterior lighting under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. The CALGreen-mandated BUG ratings for exterior lighting would also apply to development per the designated lighting zone unless otherwise exempt, which would reduce light pollution and glare by specifying lighting standards, such as illumination levels and lumen distribution, to minimize light trespass and control high angle brightness (i.e., offensive light). Therefore, development under the Master Plan Update would not create a new source of substantial light that would adversely affect day or nighttime views in the area. The impact would be less than significant during operation.

Consistent with the proposed Master Plan Update, development across the campus would focus on reducing reliance on the need for daytime lighting by increasing the use of windows to enhance natural lighting for interior building spaces. Increased windows could increase the potential for glare from reflected sunlight during daytime hours and from exterior light sources during nighttime hours, which could impact adjacent sensitive residential land uses if development occurs at the perimeter of the main campus boundary. However, compliance with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare would minimize glare that could affect off-site properties. In addition, as previously discussed, most of the perimeter of the main campus is landscaped and/or lined with street trees, which serves as a partial buffer minimizing glare from reflective surfaces. The Master Plan Update also includes landscaping improvements at the campus edges to create a boundary and to act as a buffer between the surrounding streets and land uses. Landscaping at the campus edges currently consists of dense screen plantings, natural vegetation, and maintained planting areas. Development under the Master Plan Update would be consistent with existing facilities at the main campus and the Beachside Village property and landscaped buffers would be maintained and, in some areas, enhanced. Therefore, development under the Master Plan Update would not create a new source of substantial glare that would affect day or nighttime views in the area. The impact would be less than significant during operation.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed individual near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. The majority of construction activities are anticipated to occur during daytime hours, generally 7:00 a.m. to 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday. However, it is anticipated that work outside of these hours may be required in order to maintain construction schedules and minimize potential road detours. Construction activities associated with the proposed individual development projects would not require substantial nighttime lighting. Low-level lighting would be used to secure equipment or any active construction site.

Although not anticipated, spillover lighting may occur with the use of lighting during nighttime construction activities when construction is occurring adjacent to sensitive land uses. In order to minimize the potential impact of spillover lighting on adjacent residential uses, Mitigation Measure AES-A would be implemented and would require all lighting to be shielded and focused on the construction site. Construction materials and vehicles would not introduce any nuisance glare during daytime construction as these are typical of urban environments and would not be noticeable in the context of ambient daytime light levels. Additionally, construction-related sources of nighttime lighting or glare would be temporary and would be removed upon completion of the activities requiring lighting, if any. Therefore, with implementation of Mitigation Measure AES-A, impacts from light and glare would be less than significant during construction.

Operation

As discussed in Section 3.1.3, Methodology, above, the analysis of near- and mid-term development projects is focused on those projects that would be visible from adjacent sensitive residential land uses and that would have the potential to create new substantial sources of light or glare. Such projects are described below.

College of the Arts Replacement Building

In the South District of the main campus, the College of the Arts Replacement Building project would involve construction of a new three- to four-story building at the site of the existing Fine Arts building. Due to its location near the eastern boundary of the South District and the increased height of the proposed building as compared to existing building at the site, this project may be visible from residential properties in the Bixby Hill neighborhood east of East Campus Drive. Operation of the College of the Arts Replacement Building project would create new sources of light and glare from interior and exterior building and security lighting. Lower levels of the proposed replacement building would generally not be visible from off-site locations to the east due to the presence of landscaping and fencing along the east side of East Campus Drive, which serves as screening that breaks the line of sight. Interior and exterior lighting from upper floors of the proposed new building may be visible from adjacent residential properties.

As the proposed College of the Arts Replacement Building would be located on a site with existing similar types of interior and exterior lighting and glare, light and glare visible from off-site locations would not be substantially higher than existing conditions. Additionally, in accordance with the CSU Executive Order 0987, all interior lighting not required for security purposes would be turned off when the building is unoccupied, and outside lighting would be maintained at levels necessary for security and safety, reducing the potential for over-lighting. Furthermore, development of the College of the Arts Replacement Building would be required to comply with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. The CALGreen-mandated BUG ratings would also apply to development per the designated lighting zone unless otherwise exempt, which would reduce light pollution and glare by specifying lighting standards, such as illumination levels and lumen distribution, to minimize light trespass and control high angle brightness (i.e., offensive light). Implementation of these requirements would minimize light trespass from the proposed College of the Arts Replacement Building and would not permit excessive sources of lighting that would be directed upward or contribute to light pollution or glare that could affect off-site properties. Furthermore, building materials used in the College of the Arts Replacement Building would be similar to those used for exterior finishes on existing facilities at the main campus. Therefore, operation of the proposed College of the Arts Replacement Building

would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The impact would be less than significant during operation.

Faculty and Staff Housing

In the East District of the main campus, the proposed Faculty and Staff Housing project would replace the existing one-story Design building near the corner of State University Drive and Palo Verde Avenue with a new, six-story housing building. The new building would be located adjacent to the existing apartment building on the south side of State University Drive. As the proposed new building would be taller than the existing building at the site, it is likely that the upper floors of the building would be visible from more residential properties in the Bixby Hill neighborhood to the south and in the Los Altos neighborhood to the east. Operation of the Faculty and Staff Housing project would create new sources of light and glare from interior and exterior building and security lighting.

As the proposed Faculty and Staff Housing project would be located on a site containing and surrounded by existing similar types of interior and exterior lighting and glare, light and glare visible from off-site locations would not be substantially higher than existing conditions. Additionally, the Faculty and Staff Housing project would be required to comply with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. The CALGreen-mandated BUG ratings would also apply to development per the designated lighting zone unless otherwise exempt, which would reduce light pollution and glare by specifying lighting standards, such as illumination levels and lumen distribution, to minimize light trespass and control high angle brightness (i.e., offensive light). Implementation of these requirements would minimize light trespass from the proposed Faculty and Staff Housing project and would not permit excessive sources of lighting that would be directed upward or contribute to light pollution or glare that could affect off-site properties. Furthermore, building materials used in the Faculty and Staff Housing project would be similar to those used for exterior finishes on existing facilities at the main campus. Therefore, operation of the proposed Faculty and Staff Housing project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The impact would be less than significant during operation.

Jack Rose Track/Commencement Facilities

The proposed Jack Rose Track/Commencement Facilities improvements would introduce new permanent flood lighting. Such lighting would be in operation during evening and nighttime hours only during events taking place at the Jack Rose Track facility. Additionally, this facility is located on the interior near the middle of the main campus in the North District. The new lighting would be required to comply with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. Nonetheless, nighttime use of the new permanent flood lighting may result in additional skyglow that would be visible from off-site areas. As such, Mitigation Measure AES-B, requiring the preparation and implementation of a lighting plan to minimize stadium light impacts through the use of shielding, mounting lighting at specific angles to direct light toward the field, light color, and limiting lumens, would be required to reduce potential light and glare impacts from the proposed new permanent lighting at the Jack Rose Track/Commencement Facilities.

Implementation of Mitigation Measure AES-B and compliance with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare would ensure that operation of the proposed Jack Rose Track/Commencement Facilities improvements would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. The impact would be less than significant with implementation of Mitigation Measure AES-B.

Walter Pyramid Renovation

Proposed exterior improvements at the Walter Pyramid in the North District of the main campus include installation of a new roof. The defining feature of the Walter Pyramid is the blue roof tiles on the 18-story facility. Existing street trees, landscaped medians along Atherton Street, and the landscaped setback between Atherton Street and the Walter Pyramid provide screening such that unobstructed views toward the Walter Pyramid from residential properties to the north are generally not available. Nonetheless, due to its height, partial views of the Walter Pyramid are available from various locations on the north side of Atherton Street. As such, the new roof would continue to be visible from off-site locations. The existing roof tiles are corrugated and painted in a matte finish to minimize reflection and glare. The proposed exterior improvements would replace the roof tiles within in-kind materials and finishes, including color, to ensure that glare levels would remain consistent with existing conditions. In addition, any new exterior security lighting would be required to comply with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. Therefore, the proposed Walter Pyramid Renovation would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The impact would be less than significant during operation.

Beachside Village Property

Proposed improvements at the Beachside Village property involve partial exterior renovations, including the installation of new windows. The exterior renovations would not represent considerable changes to the existing property that could result in substantial increases in light or glare from existing conditions. As previously discussed, existing walls, landscaping, and setbacks create visual barriers toward the site from surrounding residential properties. These conditions would remain unchanged with implementation of the proposed improvements.

Additionally, improvements at the Beachside Village property would be required to comply with the applicable development standards and regulations under the California Building Standards Code and the CSU Outdoor Lighting Design Guide related to light and glare, including requirements for light pollution and trespass reduction, such as the use of shielding. The CALGreen-mandated BUG ratings would also apply to development per the designated lighting zone unless otherwise exempt, which would reduce light pollution and glare by specifying lighting standards, such as illumination levels and lumen distribution, to minimize light trespass and control high angle brightness (i.e., offensive light). Implementation of these requirements would minimize light trespass from the Beachside Village property and would not permit excessive sources of lighting that would be directed upward or contribute to light pollution or glare that could affect adjacent residential properties. Additionally, materials used for exterior renovations would be similar to those used on existing facilities at the Beachside Village property. Therefore, operation of the proposed improvements at the Beachside Village property would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. The impact would be less than significant during operation.

3.1.5 Mitigation Measures

The following mitigation measures would be required to reduce impacts related to light and glare during construction and operation of the development implemented under the Master Plan Update.

AES-A **Nighttime Construction Lighting:** If the use of nighttime lighting is necessary during construction, all lighting shall be shielded and focused on the construction site.

AES-B **New Stadium Lighting:** CSULB shall prepare and implement a lighting plan for proposed new permanent flood lighting at Jack Rose Track/Commencement Facilities. The lighting plan shall be prepared by a qualified engineer who is an active member of the Illuminating Engineering Society of North America. The lighting plan shall address all aspects of the lighting and identify feasible strategies to be implemented to minimize light trespass based on the lighting design, such as use of shielding, mounting lighting at specific angles to direct light toward the field, light color, and limiting lumens to the lowest levels necessary for operation.

3.1.6 Level of Significance After Mitigation

Compliance with existing policies and regulations, and implementation of Mitigation Measure AES-A would reduce impacts related to light and glare during construction to a level of less than significant.

Compliance with existing policies and regulations, and implementation of Mitigation Measure AES-B would reduce impacts related to light and glare during operation to a level of less than significant.

3.1.7 Cumulative Impacts

Cumulative light and glare impacts occur in the form of skyglow from new developments in proximity to each other that introduce new light and glare sources. The CSULB main campus, Beachside Village property, and surrounding areas are located in a fully developed, urban setting that includes lighting from streetlights, vehicle headlights, interior and exterior building and security lighting, and pedestrian lighting. Development under the Master Plan Update would consist of infill development that would include lighting at sites that currently contain similar types of lighting. Additionally, all new lighting would be installed in compliance with the applicable development standards and regulations under the California Building Standards Code, the CSU Outdoor Lighting Design Guide, and CALGreen related to light and glare, which would limit light pollution and trespass. Potential impacts during construction would be minimized with implementation of Mitigation Measure AES-A. Potential impacts from installation of new flood lighting at the Jack Rose Track/Commencement Facilities would be minimized with preparation and implementation of a lighting plan, as required under Mitigation Measure AES-B. Implementation of Mitigation Measures AES-A and AES-B, and compliance with existing light and glare policies and regulations would ensure that development under the Master Plan Update would not contribute to a cumulatively considerable impact. Additionally, any development in the surrounding area would be required to follow all applicable state and local lighting standards. Furthermore, no new development has been identified in the surrounding area that could combine with the proposed development under the Master Plan Update to concentrate light in a specific area such that cumulatively considerable light or glare impacts would occur. Therefore, implementation of the Master Plan Update would result in less than significant cumulative impacts related to light and glare.

3.2 AIR QUALITY

This section presents an analysis of the potential air quality impacts associated with implementation of the Master Plan Update. This section identifies local air quality conditions in the South Coast Air Basin (Basin) region, as well as regulatory requirements pertaining to air quality; estimates the air pollutant emissions generated by implementation of the Master Plan Update; and describes potential direct and indirect impacts from implementation of the Master Plan Update. This section is based, in part, on the Air Quality, Greenhouse Gas Emissions, and Energy Calculations included as Appendix C and trip generation rates and vehicle miles traveled (VMT) for the Master Plan Update further detailed in Section 3.11, Transportation.

As discussed further in Section 3.3.3, Methodology, the CEQA Guidelines Appendix G checklist question for air quality related to other emissions (such as those leading to odors) was found to have a less than significant impact in the Initial Study prepared for the proposed project, and thus, is not discussed in detail in this EIR.

Comments from the South Coast Air Quality Management District (SCAQMD) related to air quality were received during the public scoping period in response to the NOP. These comments provide recommendations for the project's air quality modeling methodology, including for construction and operation. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.2.1 Regulatory Setting

Federal

National Ambient Air Quality Standards

The U.S. Environmental Protection Agency (EPA) is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. Table 3.2-1, National and California Ambient Air Quality Standards, shows the federal and state attainment status for criteria pollutants.

State

California Ambient Air Quality Standards

The California Air Resources Board (CARB) administers the air quality control efforts in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, along with the NAAQS in Table 3.2-1, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The California Clean Air Act (CCAA), which was approved in 1988, requires that each local air district prepare and maintain an Air Quality Management Plan (AQMP) to achieve compliance with CAAQS. These AQMPs also serve as the basis for the preparation of the State Implementation Plan for the state of California.

Like the EPA, CARB also designates areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data show

that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as non-attainment.

Table 3.2-1: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[3,4]	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	**Nonattainment**	N/A	N/A
	8 Hours	0.070 ppm (137 $\mu g/m^3$)	**Nonattainment**	0.070 ppm (137 $\mu g/m^3$)	**Nonattainment**
Particulate Matter (PM_{10})	24 Hours	50 $\mu g/m^3$	**Nonattainment**	150 $\mu g/m^3$	Attainment/ Maintenance
	Annual Arithmetic Mean	20 $\mu g/m^3$	**Nonattainment**	N/A	N/A
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	No Separate State Standard		35 $\mu g/m^3$	**Nonattainment**
	Annual Arithmetic Mean	12 $\mu g/m^3$	**Nonattainment**	12 $\mu g/m^3$	**Nonattainment**
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment/ Maintenance
	8 Hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment/ Maintenance
Nitrogen Dioxide (NO_2)[5]	1 Hour	0.18 ppm (339 $\mu g/m^3$)	Attainment	100 ppb (188 $\mu g/m^3$)	Attainment/ Maintenance
	Annual Arithmetic Mean	0.030 ppm (57 $\mu g/m^3$)	N/A	0.053 ppm (100 $\mu g/m^3$)	Attainment/ Maintenance
Sulfur Dioxide (SO_2)[6]	1 Hour	0.25 ppm (655 $\mu g/m^3$)	Attainment	75 ppb (196 $\mu g/m^3$)	N/A
	3 Hours	N/A	N/A	N/A	N/A
	24 Hours	0.04 ppm (105 $\mu g/m^3$)	Attainment	0.14 ppm (for certain areas)	Unclassified/ Attainment
	Annual Arithmetic Mean	N/A	N/A	0.30 ppm (for certain areas)	Unclassified/ Attainment
Lead (Pb)[7,8]	30 days Average	1.5 $\mu g/m^3$	Attainment	N/A	N/A
	Calendar Quarter	N/A	N/A	1.5 $\mu g/m^3$	**Nonattainment**
	Rolling 3-Month Average	N/A	N/A	0.15 $\mu g/m^3$	**Nonattainment**
Visibility-Reducing Particles[9]	8 Hours	Extinction coefficient = 0.23 km@<70% RH	Unclassified	**No Federal Standards**	
Sulfates	24 Hour	25 $\mu g/m^3$	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Unclassified		
Vinyl	24 Hour	0.01 ppm (26	N/A		

Table 3.2-1: National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[3,4]	Attainment Status
Chloride[7]		μg/m^3)			

μg/m^3 = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable

Notes:
1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health. It should be acknowledged that national secondary standards, which provide welfare-based public protection, were not included in this table as California's adopted standards are generally more stringent than the secondary standards (and in some cases, than the primary standards).
5. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
6. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of ppb. California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
7. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
8. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
9. In 1989, CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
Source: California Air Resources Board and U.S. Environmental Protection Agency, May 4, 2016, *Ambient Air Quality Standards Chart*.

California State University

California State University Sustainability Policy

CSU has identified sustainability as a system-wide priority, as detailed in the CSU Sustainability Policy, which was first adopted in 2014 and updated in March 2022. The CSU Sustainability Policy focuses mainly on energy and greenhouse gas (GHG) emissions, and largely aligns with the state of California's energy and GHG emissions reduction goals. The policy aims to reduce the environmental impact of construction and operation of buildings and services and to integrate sustainability into the academic curriculum across universities. Refer to Section 3.6, Greenhouse Gas Emissions, for more details on the CSU Sustainability Policy.

California State University, Long Beach Standard Construction Controls

CSULB complies with SCAQMD Rule 403 which governs dust control standards that must be followed during construction, and includes controls for water, dust, erosion and sediment, noise, and pollution. The following controls are typical of those required of all construction contractors working on the campus to minimize air quality emissions related to dust and pollution:

- Execute work methods to minimize raising dust from construction operations
- Protect adjoining property and nearby buildings, roads, and other facilities and improvements from dust, dirt, debris, and other nuisances from contractor operations or storing practices
- Prevent airborne dust from dispersing into atmosphere by using water mist, temporary enclosures and other suitable methods to limit the spread of dust and direct. A regular watering program shall be initiated to adequately control the amount of fugitive dust in accordance with applicable AQMD rules. All positive dust control measures shall hold airborne dust to a factor not greater than Step 1 on the Ringlemann Scale (SCAQMD Reg. 403). Exposed soil surfaces shall be sprayed with water at least daily as needed to mitigate dust
- Trucks hauling dirt to and from the site shall be covered in accordance with applicable state and local requirements. Trucks transporting soil, sand, cut or fill materials and/or construction debris to or from the site shall be tarped from the point of origin
- To reduce exhaust emissions, unnecessary idling of construction vehicles and equipment shall be avoided
- Construction contractor shall be responsible for complying with local regulations regarding dust control
- During clearing, grading, earth moving, excavation, or transportation of cut or fill materials, water trucks or sprinkler systems shall be used to prevent dust from leaving the site and to create a crust after each day's activities cease
- During construction, water trucks or sprinkler systems shall be used to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this would include wetting down such areas in the later morning and after work is completed for the day and whenever wind exceeds 15 miles per hour
- After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated immediately by pickup of the soil until the area is paved or otherwise developed so that dust generation shall not occur

- Soil stockpiled for more than two days shall be covered, kept moist or treated with soil binders to prevent dust generation
- Provide methods, means, and facilities to prevent contamination of water and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations
- Construction contractor shall be required to select construction equipment used on site based on low emission factors and high energy efficiency and shall ensure that all construction equipment be tuned and maintained in accordance with the manufacturer's specifications
- Construction contractor shall utilize electric or diesel powered equipment in lieu of gasoline powered engines where feasible

Regional

Southern California Association of Governments

On September 3, 2020, the Regional Council of Southern California Association of Governments (SCAG) formally adopted the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020-2045 RTP/SCS). The SCS portion of the 2020-2045 RTP/SCS highlights strategies for the region to reach the regional target of reducing GHGs from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels). Specifically, these strategies are:

- Focus growth near destinations and mobility options;
- Promote diverse housing choices;
- Leverage technology innovations;
- Support implementation of sustainability policies; and
- Promote a green region.

Furthermore, the 2020-2045 RTP/SCS discusses a variety of land use tools to help achieve the state-mandated reductions in GHG emissions through reduced per capita VMT. Some of these tools include center focused placemaking, focusing on priority growth areas, job centers, transit priority areas, as well as high quality transit areas and green regions.

South Coast Air Quality Management District

2022 Air Quality Management Plan

The SCAQMD is one of 35 air quality management districts that have prepared AQMPs to accomplish a five-percent annual reduction in emissions. SCAQMD adopted the 2022 AQMP on December 2, 2022. The primary purpose of the 2022 AQMP is to identify, develop, and implement strategies and control measures to meet the 2015 eight-hour ozone (O_3) NAAQS – 70 parts per billion (ppb) as expeditiously as practicable, but no later than the statutory attainment deadline of August 3, 2038, for the South Coast Air Basin and August 3, 2033, for the Riverside County portion of the Salton Sea Air Basin. The 2022 AQMP incorporates the recently adopted SCAG's 2020-2045 RTP/SCS and motor vehicle emissions from CARB.

3.2.2 Environmental Setting

South Coast Air Basin

Geography

The project is located within the South Coast Air Basin, a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The Basin includes the non-desert portions of Los Angeles and all of Orange County, Riverside County, and San Bernardino County, in addition to the San Gorgonio Pass area of Riverside County.

The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of air pollutants throughout the Basin.

Climate

The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. The climate consists of a semi-arid environment with mild winters, warm summers, moderate temperatures, and comfortable humidity.

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. The annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically 9 to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall are greater in the coastal areas of the Basin.

The height of the air inversion in an area is important in determining pollutant concentration.[1] When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities. Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal Basin. Usually, inversions are lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of O_3 observed during the summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the CSULB campus is located offers clear skies and sunshine yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles,

[1] An inversion is when air temperature increases with height (i.e., cold air at the bottom and warmer air on top). This can trap pollutants near the ground.

furnaces, and other sources.

Local Ambient Air Quality

Measured Air Quality Levels

The SCAQMD monitors air quality at 37 monitoring stations throughout the Basin. Each monitoring station is located within a Source Receptor Area (SRA). The communities within an SRA are expected to have similar climatology and ambient air pollutant concentrations. The CSULB campus is located in the South Los Angeles County Coastal SRA (SRA 4). The monitoring station representative of the campus is the Long Beach-Signal Hill monitoring station, located approximately 2.7 miles northwest of the CSULB main campus. The air pollutants measured at Long Beach-Signal Hill station include O_3, carbon monoxide (CO), and nitrogen oxide (NO_2). The closest monitoring station with particulate matter (PM_{10}) and fine particulates ($PM_{2.5}$) air quality data is the South Long Beach monitoring station, located approximately 2.9 miles northwest of the CSULB main campus. The air quality data monitored at the Long Beach-Signal Hill and South Long Beach monitoring stations from 2019 to 2021 are presented in Table 3.2-2, Measured Air Quality Levels.

Table 3.2-2: Measured Air Quality Levels

Pollutant	Primary Standard		Year	Maximum Concentration[a]	Pollutant Number of Days State/Federal Exceeded
	California	Federal			
Carbon Monoxide (CO)[2] (1-Hour)	20 ppm for 1 hour	35 ppm for 1 hour	2019 2020 2021	* 2.259 ppm 2.272 ppm	*/* 0/0 0/0
Ozone (O_3)[b] (1-Hour)	0.09 ppm for 1 hour	N/A	2019 2020 2021	* 0.105 ppm 0.086 ppm	*/* 4/0 0/0
Ozone (O_3)[b] (8-Hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2019 2020 2021	* 0.083 ppm 0.065 ppm	*/* 4/4 0/0
Nitrogen Dioxide (NO_X)[b]	0.180 ppm for 1 hour	0.100 ppm for 1 hour	2019 2020 2021	* 0.075 ppm 0.059 ppm	*/* 0/0 0/0
Particulate Matter (PM_{10})[c,d,e]	50 µg/m^3 for 24 hours	150 µg/m[b] for 24 hours	2019 2020 2021	73.8 µg/m^3 68.7 µg/m^3 49.7 µg/m^3	2/0 3/0 0/0
Fine Particulate Matter ($PM_{2.5}$)[c,d]	No Separate State Standard[f]	35 µg/m[b] for 24 hours	2019 2020 2021	31.2 µg/m^3 72.6 µg/m^3 51.3 µg/m^3	*/0 */10 */4

Notes:
ppm = parts per million
µg/m^3 = micrograms per cubic meter
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
* = insufficient data available to determine the value
NA = Not Applicable

a. Maximum concentration is measured over the same period as the California Standard.
b. Measurements taken at the Long Beach-Signal Hill Monitoring Station located at 1710 E 20th St, Signal Hill, California 90755.
c. Measurements taken at the South Long Beach Monitoring Station located at 1305 E Pacific Coast Hwy, Long Beach, California 90806.
d. PM_{10} exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
e. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Sources: California Air Resources Board, May 2016, *Ambient Air Quality Standards*; California Air Resources Board, i*ADAM Air Quality Data Statistics*, http://www.arb.ca.gov/adam/, accessed on November 28, 2022; California Air Resources Board, *AQMIS Air Quality and Meteorological Information's Systems*, https://www.arb.ca.gov/aqmis2/aqdselect.php, accessed on November 28, 2022.

Criteria Air Pollutants

Under the FCCA, the EPA has identified six air pollutants that are environmentally prevalent and produced by human activities to be of concern with respect to health, the environment and welfare of the public. These specific pollutants, known as criteria air pollutants, are pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. These pollutants are common byproducts of human activities and have been documented through scientific research to cause various adverse health effect outcomes. The criteria air pollutants regulated at the federal jurisdiction include CO, O_3, NO_2, PM_{10}, $PM_{2.5}$, SO_2, and lead. The federal and state attainment status of each criteria air pollutant is listed in Table 3.2-1 above.

Carbon Monoxide (CO). CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of the incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions.

CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO.

Ozone (O_3). O_3 occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" O_3) layer extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays. "Bad" O_3 is a photochemical pollutant and needs volatile organic compounds (VOCs), nitrogen oxides (NO_X), and sunlight to form; therefore, VOCs and NO_X are O_3 precursors. To reduce O_3 concentrations, it is necessary to control the emissions of these O_3 precursors. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O_3 in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 (in the troposphere) can adversely affect the human respiratory system and other tissues. O_3 is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung diseases such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O_3. Short-term exposure (lasting for a few hours) to O_3 at elevated levels can result in aggravated respiratory diseases such as emphysema, bronchitis, and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide (NO_2). NO_X is a family of highly reactive gases that are a primary precursor to the formation of ground-level O_3 and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at elevated levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into the lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($PM_{2.5}$). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both state and Federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the EPA announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court, and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a non-attainment area for Federal $PM_{2.5}$ standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current state standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging-. On July 8, 2016, the EPA made a finding that the Basin has attained the 1997 24-hour and annual $PM_{2.5}$ standards based on 2011-2013 data. However, the Basin remains in non-attainment as the EPA has not determined that California has met the FCAA requirements for re-designating the Basin non-attainment area to attainment.

Sulfur Dioxide (SO_2). Sulfur dioxide (SO_2) is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. SO_2 is often used interchangeably with sulfur oxides (SO_X). Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics.

Volatile Organic Compounds (VOC). VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form O_3 to the same extent when exposed to photochemical processes. VOCs often have an odor, and some examples include

gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant. The SCAQMD uses the terms VOC and reactive organic gases (ROG) (see below) interchangeably.

Reactive Organic Gases (ROG). Similar to VOCs, ROGs are also precursors to O_3 and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROGs are a criteria pollutant since they are a precursor to O_3, which is a criteria pollutant.

Non-Criteria Air Pollutants

Toxic Air Contaminants

Toxic air contaminants (TACs) are airborne substances capable of causing short-term (acute) and/or long-term (chronic) or carcinogenic (i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Hazardous air pollutant is a term used in the FCAA and includes a variety of pollutants generated or emitted by industrial production activities. Identified as TACs under the CCAA, ten pollutants have been singled out through ambient air quality data as being the most substantial health risks in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, brain and nervous system damage, and respiratory disorders.

TACs often result from fugitive emissions during fuel storage and transfer activities, and from leaking valves and pipes. For example, the electronics industry, including semiconductor manufacturing, uses highly toxic chlorinated solvents in semiconductor production processes. Automobile exhaust also contains TACs such as benzene and 1,3-butadiene.

TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic “Hot Spots” Information and Assessment Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities subject to the toxic emission inventory requirements of AB 2588 must prepare, submit, and periodically update their toxic emission inventory plans and reports. Since 2001, toxics emissions reporting for the AB 2588 Program was incorporated into the SCAQMD’s Annual Emissions Reporting Program. Facilities required to file an annual emissions report include the following:

- Every facility that has estimated annual emissions of four (4) or more tons of either SO_X, VOCs, NO_X, specific organics, PM, or emissions of 100 tons per year or more of CO.
- Every facility subject to the AB 2588 Program for reporting quadrennial updates to its toxic emissions inventory (per Health and Safety Code Section 44344).
- Every facility subject to CARB's Criteria and Toxics Emission Reporting (CTR) Regulation (CTR requirements are being phased in for various facility types over several years).

The Master Plan Update would not be subject to the Annual Emissions Reporting Program. However, all stationary sources developed under the Master Plan Update would be required to comply with applicable SCAQMD rules and regulations.

Diesel Particulate Matter

Diesel Particulate Matter (DPM) is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources, such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute approximately five percent of total DPM in the state. CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan, the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Online Reporting System (DOORS). PERP and DOORS allow owners or operators of portable engines and certain other types of equipment to register their equipment in order to operate them in the state without having to obtain individual permits from local air districts.

Diesel exhaust and many individual substances contained in it (e.g., arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by the California Office of Environmental Health Hazard Assessment (OEHHA). CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancers in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can also have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and can cause coughing, headaches, lightheadedness, and nausea. Studies have shown that diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. Elderly people and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, diesel exhaust particles have been identified as a carcinogen.

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxins and CO are of particular concern. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The following types of people are most likely to be adversely affected by air pollution, as identified by CARB: children under 14, elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups are called sensitive receptors and include residential areas, hospitals, day-care facilities, elder-care facilities, elementary schools, and parks. Sensitive receptors in the project vicinity include residential and institutional uses.

Specifically, the closest receptors to the following near- and mid-term development projects are shown in Table 3.2-3.

Table 3.2-3: Sensitive Receptors Closest to Near- and Mid-Term Development Projects

Project	Nearest Sensitive Receptors	Land Use	Direction	Distance to Nearest Sensitive Receptors (feet)
Beachside Housing	Multi-family Residence	Residential	Northwest	140
College of the Arts Replacement Building	Single-family Residence	Residential	East	145
Faculty and Staff Housing	Multifamily Residence	Residential	Southeast	170
New 7th Street Community Outreach Facility	Multi-family Residence	Residential	South	225
Walter Pyramid Renovation	Single-family Residence	Residential	North	430
New Parkside Housing Village	Preschool	Institutional	Northwest	670
USU Renovation/Addition and Cafeteria Replacement	Single-family Residence	Residential	Southeast	580
Engineering Replacement Building	Single-family Residence	Residential	East	810
Hillside College Renovations/Addition	Single-family Residence	Residential	West	885
Aquatics Center and Pool Renovation	Single-family Residence	Residential	East	1,200
Jack Rose Track/Commencement Facilities	Single-family Residence	Residential	North	1,270

3.2.3 Methodology

Program- and Project-Level Review

The air quality impact analysis in this section includes a program-level analysis of the proposed Master Plan Update. The program-level analysis generally includes a qualitative discussion of the

types of project activities that would be implemented under the Master Plan Update that would result in air quality emissions. The project-level analysis includes a quantitative analysis of near- and mid-term projects that would be implemented under the proposed Master Plan Update. Of the near- and mid-term projects described in Chapter 2, Project Description, the most impactful projects, in terms of air emissions during construction, were modeled based on their likely construction scenarios, construction duration, construction equipment, existing and/or new building square footage, and demolition requirements.

Both construction and operation of the projects implemented under the Master Plan Update are considered in the impact analysis, where relevant.

Construction Emissions Methodology

Emissions from the construction phase of the most impactful near- and mid-term development projects, in terms of air emissions, were calculated using California Emissions Estimator Model (CalEEMod) Version 2020.4.0.[2] CalEEMod utilizes widely accepted methodologies for estimating emissions combined with default data that can be used when site-specific information is not available. Sources of these methodologies and default data include but are not limited to the EPA AP-42 emission factors, CARB vehicle emission models, and studies commissioned by California agencies such as the California Energy Commission and California Department of Resources Recycling and Recovery. In addition, some local air districts (e.g., SCAQMD) provide customized values for their default data and existing regulation methodologies for use in evaluating projects located in their jurisdictions. Construction modeling parameters, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values and specific construction phasing and vehicle trips information for development projects as provided by program planners in the Design & Construction Services Department at CSULB.

For purposes of estimating construction emissions, the near- and mid-term development projects were modeled separately. Maximum daily emissions for each development project in each construction year were then added up to account for overlapping. Each development project involves construction activities associated with demolition, grading, building construction, paving, and architectural coating applications. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The number of pieces and types of equipment in use are based on CalEEMod program defaults derived from gross square footage to be constructed for each development project, as described in Chapter 2, Project Description. The length of construction period and the number of hauling trips (trips for soils and materials hauling) for each construction phase were estimated and provided by program planners in the Design & Construction Services Department at CSULB. Table 3.2-4, Construction Schedule, shows the estimated start date and duration of each construction phase for each development project, and Table 3.2-5, Construction Hauling Trips, shows the estimated number of hauling trips during each construction phase for each development.

[2] CalEEMod version 2022.1 was officially released on December 21, 2022. Based on correspondence with SCAQMD staff, a grace period would be granted for CEQA projects occurring during this transition phase to utilize either the older (2020) or the latest (2022) version of CalEEMod. In general, the SCAQMD recommends the use of CalEEMod 2022 for projects that have NOPs issued after December 2022. The NOP for the Master Plan Update EIR was published on April 21, 2022; hence CalEEMod version 2020 4.0 was used. Source: Sam Wang, South Coast Air Quality Management District Senior Air Quality Engineer, Email correspondence, January 13, 2023.

Table 3.2-4: Construction Schedule

Individual Development Project	Construction Start Date (Month/Year)	Duration (Months)				
		Demolition	Grading	Building Construction	Paving	Architectural Coating
Engineering Replacement Building	05/26	2	2	16	2	2
New Parkside Housing Village	05/24	2	2	16	2	2
Faculty and Staff Housing	05/25	2	2	16	2	2
USU Renovation/ Addition and Cafeteria Replacement	05/26	2	2	16	2	2
Hillside College Renovations/ Addition	05/24	1.5	1.5	13	1	1
Beachside Housing	05/24	1.5	1.5	13	1	1
Aquatics Center and Pool Renovation	05/24	1	1	8.5	0.75	0.75
College of the Arts Replacement Building	05/27	2	2	16	2	2
New 7th St. Community Outreach Facility	05/29	2	2	16	2	2
Jack Rose Track/ Commencement Facilities	05/27	1	1	8.5	0.75	0.75
Walter Pyramid Renovation	05/27	1.5	1.5	13	1	1

Source: Provided by program planners in the Design & Construction Services Department at CSULB.

Table 3.2-5: Construction Hauling Trips

Individual Development Project	Total Number of Hauling Trips Per Day (Round Trip)			
	Demolition	Grading	Building Construction	Paving
Engineering Replacement Building	8	9	5	5
New Parkside Housing Village	12	14	7	7
Faculty and Staff Housing	27	30	15	15

Table 3.2-5: Construction Hauling Trips

Individual Development Project	Total Number of Hauling Trips Per Day (Round Trip)			
	Demolition	Grading	Building Construction	Paving
USU Renovation/Addition and Cafeteria Replacement	7	8	4	4
Hillside College Renovations/Addition	8	0	4	0
Beachside Housing	6	0	4	0
Aquatics Center and Pool Renovation	4	0	4	2
College of the Arts Replacement Building	15	17	9	9
New 7th St. Community Outreach Facility	18	20	10	10
Jack Rose Track/Commencement Facilities	6	4	4	2
Walter Pyramid Renovation	8	0	4	0

Source: Provided by program planners in the Design & Construction Services Department at CSULB.

Operational Emissions Methodology

Emissions from the operational phase of the Master Plan Update for all proposed development described in Chapter 2, Project Description, were calculated using CalEEMod Version 2020.4.0, based on an operational year 2035, the horizon year for the Master Plan Update. The total campus population in 2035 is 38,165 (refer to Chapter 2, Project Description, Table 2-3), which was used for modeling. Campus population includes total on-campus FTES, FTE employees, auxiliary employees, and faculty/staff household members at the Master Plan Update 2035 horizon year. As such, the input for total campus population in CalEEMod is considered a conservative analysis as CalEEMod assumes the input for the population number only includes the student count, and generates an output for faculty/staff based on the student count.

Operational air quality emissions were estimated for area sources (consumer product use, architectural coatings, and landscape maintenance equipment), energy sources (natural gas), and mobile sources, as further described below.

Emissions associated with the existing operations on the campus were also calculated using CalEEMod to present the net change in criteria air pollutant emissions. Operational year 2019 was used for existing conditions, consistent with the baseline year for the transportation analysis (see Section 3.11, Transportation). The total campus population in 2019 was 32,699 (refer to Chapter 2, Project Description, Table 2-3), which was used for modeling.

To calculate the net increase in operational emissions with implementation of the Master Plan Update, the emissions from the existing operations on the campus were subtracted from the emissions from the operational phase of the Master Plan Update, as the operational phase estimate includes all proposed development and all existing campus development that would not change with implementation of the Master Plan Update.

As indicated in the analysis under Threshold AQ-2 below, the net increase in operational emissions associated with implementation of the Master Plan Update would not exceed the SCAQMD significance thresholds. Therefore, separate operational emissions estimates were not conducted for each of the near- and mid-term development projects, as such estimates were not required to determine the significance of the project-level impacts.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, which include emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage in space heating, water heating, and stoves are calculated in the building energy use module of CalEEMod, as described in the following text.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents, cleaning compounds, polishes, floor finishes, cosmetics, personal care products, home, lawn, and garden products, disinfectants, sanitizers, aerosol paints, and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products. Consumer product VOC (i.e., ROG) emissions are estimated in CalEEMod based on the floor area of the on-site buildings and on the default factor of pounds of VOC per building square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of surface coatings based on the VOC emission factor, the building square footage, the estimated fraction of surface area, and the reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings, and SCAQMD Rule 1113, Architectural Coatings, which restricts the VOC content for interior and exterior coatings. The model default reapplication rate of 10 percent of area per year is used.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions from landscape equipment use are calculated based on CalEEMod default values for emission factors and number of summer days (when landscape maintenance would generally be performed) and winter days.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions, since criteria pollutant emissions occur at the site of the power plant, which is located off-site. However, the emissions from electricity use are quantified for GHG emissions in CalEEMod.

CSULB's electricity is provided by Southern California Edison (SCE) and on-site solar generation. For modeling purposes, only electricity purchased from SCE was considered, as electricity generated from renewable sources (e.g., solar) does not generate criteria air pollutants emissions. The existing and horizon year natural gas and electricity consumptions were obtained from the CSULB Utility Infrastructure Master Plan Update. Based on the Utility Infrastructure Master Plan Update, the natural gas and SCE electricity consumption was 1,377,285 therms (137,695,445 kBtu) and 37,884,271 kWh, respectively, in 2019. Implementation of the Master Plan Update would increase the electricity consumption by 25,291,100 kBtu (7,412,397 kWh). To be

conservative, this analysis assumes that all additional electricity consumed as part of implementation of the Master Plan Update would be purchased from SCE. This assumption is conservative as the new buildings under the Master Plan Update would be required to install photovoltaic panels per 2022 Title 24 standards, which would generate on-site energy.

Additionally, CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB Climate Action and Adaptation Plan, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030; and thus, CSULB would mostly phase out natural gas by 2035. However, to be conservative, this analysis assumes natural gas use for operation in 2035 would remain the same as under existing conditions (1,377,285 therms or 137,695,445 kBtu) to account for the continued use of natural gas at a few buildings on-campus that require natural gas, such as laboratories with Bunsen burners and commercial kitchens. This assumption is conservative as the new buildings under the Master Plan Update would be electrified and would not consume natural gas, and some existing buildings would consume less natural gas as they would be retrofitted under the Master Plan Update to be fully electrified. The Title 24, Non-Title 24, and Lighting energy consumption breakdown for the existing conditions and the Master Plan Update were adjusted in proportion to the CalEEMod defaults because the energy consumption breakdown was not provided in the Utility Infrastructure Master Plan Update.

Mobile Sources

Mobile sources related to implementation of the Master Plan Update would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the campus. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2020.4.0, which is based on CARB's Mobile Source Emissions Inventory model, EMission FACtor, version 2017, was applied.

Trip generation rates and VMT for the Master Plan Update (project) are based on the transportation analysis in Section 3.11, Transportation, prepared for the project. According to the transportation analysis, CSULB would generate approximately 33,237 trips per day in the 2019 baseline year without the project, and 44,113 trips per day in the 2035 horizon year with the project (i.e., Master Plan Update). Based on the modeling conducted for the transportation analysis, this would result in a total site-generated VMT of 390,197 miles per day in the 2019 baseline year without the project and 446,213 miles per day in the 2035 horizon year with the project. Default vehicle trip generation rates included in CalEEMod were adjusted to match the existing and project's trip generation estimates from the transportation analysis. In addition, Saturday and Sunday trip rates for the 2019 baseline year without the project and 2035 horizon year with the project were adjusted in proportion to the CalEEMod weekday trip rates because weekend trip-generation rates are not provided in the transportation analysis. CalEEMod default trip distances were adjusted to match the weekday daily VMT for the 2019 baseline year without the project and 2035 horizon year with the project. Other CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors were conservatively used for the model inputs. Project-related traffic includes a mix of vehicles in accordance with the model defaults. Emission factors representing the vehicle mix and emissions for the 2019 baseline year and 2035 horizon year were used to estimate emissions associated with the existing conditions (i.e., without the project) and with the project, respectively.

Stationary Sources and Other Sources of Emissions

Based on the type of land uses that would be developed under the Master Plan Update, there are additional emission sources that are either not captured in CalEEMod or cannot be accurately accounted for in CalEEMod due to the absence of project-specific data. For example, potential

additional sources of criteria air pollutant and TAC emissions could include various VOC sources such as from art and science laboratories/rooms. Nonetheless, the operational emissions estimate included provides a conservative estimate of the operational emissions as all stationary sources developed under the Master Plan Update would be required to comply with applicable SCAQMD rules and regulations, listed below. Furthermore, implementation of the Master Plan Update would also comply with the California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), which identifies requirements for all installed appliances and fixtures.

SCAQMD Rules And Regulations

The SCAQMD establishes rules and regulations to attain and maintain state and national air quality standards. The project would be subject to the requirements of the following SCAQMD rules and regulations, among others:

- Rule 401 – Visible Emissions: governs discharge into the atmosphere from any single source of emission of air contaminant, from a charbroiler, or from any diesel pile-driving hammer for a period or periods specified by the rule
- Rule 402 – Nuisance: governs the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property
- Rule 403 – Fugitive Dust: reduces the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions
- Rule 1113 – Architectural Coatings: limits the VOC content of architectural coatings used in the SCAQMD
- Rule 1168 – Adhesive And Sealant Applications: reduces emissions of VOCs, TACs, and stratospheric ozone-depleting compounds from the application of adhesives, adhesive primers, sealants, and sealant primers
- Regulation 13 – New Source Review: sets forth pre-construction review requirements for new, modified, or relocated facilities, to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the SCAQMD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors
- Rule 1401 – New Source Review of Toxic Air Contaminants: specifies limits for maximum individual cancer risk, cancer burden, and noncancer acute and chronic hazard index from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants
- Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities: specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to air quality are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; or
- Expose sensitive receptors to substantial pollutant concentrations.

Regional Air Quality

In its *CEQA Air Quality Handbook*, the SCAQMD has established significance thresholds to assess the impact of project-related air pollutant emissions.[3] Table 3.2-6, SCAQMD Regional Pollutant Emission Thresholds of Significance, presents these significance thresholds which consist of separate thresholds for short-term construction and long-term operational emissions. A project with daily emission rates below these thresholds is considered to have a less than significant effect on regional air quality.

Table 3.2-6: SCAQMD Regional Pollutant Emission Thresholds of Significance

Phase	Pollutant (lbs/day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operation	55	55	550	150	150	55

Notes: CO = carbon monoxide; VOC = volatile organic compounds; NO_X = nitrogen oxides; PM_{10} = particulate matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns
Source: South Coast Air Quality Management District, November 1993, *CEQA Air Quality Handbook*.

Localized Significance Thresholds

Localized Significance Thresholds (LSTs) were developed in response to the SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (revised July 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with projects. The SCAQMD provides the LST look-up tables for one-, two-, and five-acre projects emitting CO, NO_X, PM_{10}, and $PM_{2.5}$. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. CSULB is located in SRA 4, South Los Angeles County Coastal.

The SCAQMD guidance on applying CalEEMod to LSTs specifies the amount of acres a particular piece of equipment would likely disturb per day. SCAQMD provides LST thresholds for one, two-, and five-acre site disturbance areas; SCAQMD does not provide an LST threshold over five acres. The localized impacts are not additive, as each development project would potentially impact different sensitive receptors on different scale. It should be noted that no sensitive receptors are located within the same distance from two projects. Therefore, although construction activities of

[3] South Coast Air Quality Management District, November 1993, *CEQA Air Quality Handbook*.

some of the near- and mid-term development projects would overlap, the localized construction impacts were analyzed for each development project individually. The LST thresholds for each individual development project were determined by the respective individual development project's acreage of site disturbance and the distance to the closest off-site sensitive receptors. Table 3.2-7, SCAQMD Localized Significance Thresholds During Construction, includes the applicable LST thresholds for each individual development project that was modeled.

Table 3.2-7: SCAQMD Localized Significance Thresholds During Construction

Development Project	Localized Significance Thresholds During Construction[a] (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Engineering Replacement Building *(1-acre, 200-meter)*	90	2,296	61	26
New Parkside Housing Village *(2-acre, 100-meter)*	87	1,611	37	13
Faculty and Staff Housing *(1-acre, 50-meter)*	58	789	13	5
USU Renovation/Addition and Cafeteria Replacement *(1-acre, 200-meter)*	90	2,296	61	26
Hillside College Renovations/Addition *(1-acre, 200-meter)*	90	2,296	61	26
Beachside Housing *(1-acre, 25-meter)*	57	585	4	3
Aquatics Center and Pool Renovation *(1-acre, 200-meter)*	90	2,296	61	26
College of the Arts Replacement Building *(1-acre, 25-meter)*	57	585	4	3
New 7th St. Community Outreach Facility *(1-acre, 50-meter)*	58	789	13	5
Jack Rose Track/Commencement Facilities *(1-acre, 200-meter)*	90	2,296	61	26
Walter Pyramid Renovation *(1-acre, 100-meter)*	68	1,180	29	10

Notes: NO_X = nitrous oxide; CO = carbon monoxide; PM_{10} = particulate matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns

a. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold uses the area disturbed and the distance to sensitive receptors for each individual development project and SRA 4.

Source: South Coast Air Quality Management District, revised July 2008, *Final Localized Significance Threshold Methodology, Appendix C, Mass Rate Look Up Table*.

Localized CO

In addition, a project would result in a local air quality impact if the project results in increased traffic volumes that would result in an exceedance of the CO ambient air quality standards of 20 parts per million (ppm) for 1-hour CO concentration levels, and 9 ppm for 8-hour CO concentration levels. If the CO concentrations at potentially impacted intersections with the project are lower than the standards, then there is no significant impact. If future CO concentrations with the project are above the standard, then the project would have a significant local air quality impact.

Cumulative Emissions

The SCAQMD's 2022 AQMP was prepared to accommodate growth, meet state and Federal air quality standards, and minimize the fiscal impact that pollution control measures have on the local

economy. According to the SCAQMD *CEQA Air Quality Handbook*, project-related emissions that fall below the established construction and operational thresholds should be considered less than significant unless there is pertinent information to the contrary.

If a project exceeds these emission thresholds, the SCAQMD *CEQA Air Quality Handbook* states that the significance of a project's contribution to cumulative impacts should be determined based on whether the rate of growth in average daily trips exceeds the rate of growth in population.

Issues Not Evaluated Further

The Master Plan Update would not result in a significant impact related to the following CEQA Guidelines Appendix G checklist question, as determined in the Initial Study (Appendix A), and therefore is not evaluated further in this Draft EIR.

- *Would the project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?*

  An odorous emission is typically a mixture of volatile chemicals rather than a single, easily identified compound.[4] In general, odors are comprised of nitrogen-bearing compounds and sulfuric compounds. Nitrogen compounds are typically represented by the marker compound ammonia; sulfur compounds are typically represented by the marker compound hydrogen sulfide. Hydrogen sulfide is a colorless and odorous gas that smells like rotten eggs. Ammonia is an extremely common compound observed through all of airborne surveys, partly due to the high sensitivity and low minimum detection limits of the instrument used, and also because it is emitted by many natural and industrial sources, such as petroleum refining, some of the diesel exhaust control devices, biomass burning, agriculture, animal husbandry, and rendering facilities. Common odorous inorganic gases also include methane. Methane is common throughout the Basin due to the prevalence of oil and gas production and distribution in the region.

  Potential sources that may produce objectionable odors during construction activities include equipment exhaust, application of asphalt and architectural coatings, and other interior and exterior finishes. Although not anticipated, potential odors from these sources would be localized and generally confined to the immediate area surrounding the construction site. The Master Plan Update's projects would be implemented utilizing standard construction techniques, and odors would be typical of most construction sites, would be temporary in nature, and would not persist beyond the termination of construction activities. Additionally, all CSULB development projects are required to implement standard temporary construction controls for odors, including, but not limited to, protecting fresh air intakes to existing buildings from noxious fumes and vapors.[5] Therefore, odor impacts during construction would be less than significant.

  Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical

[4] Irwin "Mel" Suffet and Scott Braithwaite, September 3, 2019, *White Paper: Odor Complaints, Health Impacts and Monitoring Methods*.

[5] The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9235, Construction Document Phase of Project Development, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-83nrq, accessed February 15, 2022.

plants, composting, refineries, landfills, dairy farms, and fiberglass molding.[6] The campus does not currently contain these uses and none of these uses would be developed as part of implementation of the Master Plan Update. Therefore, no impact related to odors would occur during operations.

3.2.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed.

AQ-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

Program-Level Analysis for Master Plan Update

On December 2, 2022, the SCAQMD Governing Board adopted the 2022 AQMP. The 2022 AQMP incorporates the latest scientific and technical information and planning assumptions, including the latest applicable growth assumptions, updated emission inventory methodologies for various source categories. Additionally, the 2022 AQMP utilized information and data from the SCAG and its 2020-2045 RTP/SCS. The SCAQMD considers projects that are consistent with the 2022 AQMP, which is intended to bring the Basin into attainment for all criteria pollutants, to also have less than significant cumulative impacts.

Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's *1993 CEQA Air Quality Handbook*. Criteria for determining consistency with the AQMP are defined by the following indicators:

Criterion 1

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) *Would the project result in an increase in the frequency or severity of existing air quality violations?*

Since the consistency criteria identified under the first criterion pertain to pollutant concentrations rather than to total regional emissions, an analysis of a project's pollutant emissions relative to localized pollutant concentrations associated with the CAAQS and NAAQS is used as the basis for evaluating project consistency. As discussed in Threshold AQ-3 below, the localized concentration of CO, NO_x, PM_{10}, and $PM_{2.5}$ would be less than significant during implementation of the Master Plan Update. Therefore, the implementation of the Master Plan Update would not result in an increase in the frequency or severity of existing air quality violations. As such, implementation of the Master Plan Update would not cause or contribute to localized air quality violations or delay the attainment of air quality standards or interim emissions reductions specified in the AQMP.

[6] South Coast Air Quality Management District, May 2005, *Guidance Document for Addressing Air Quality Issues in General Plans and Local Planning*, Table 2-1, Sources of Odor and Dust Complaints Received by the AQMD.

b) Would the project cause or contribute to new air quality violations?

As discussed below in Thresholds AQ-2 and AQ-3, construction and operation related to implementation of the Master Plan Update would be below the SCAQMD's thresholds for regional and localized emissions. Therefore, the implementation of the Master Plan Update would not have the potential to cause or affect a violation of the ambient air quality standards with mitigation incorporated.

c) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

As discussed below in Thresholds AQ-2 and AQ-3, construction and operation related to implementation of the Master Plan Update would be below the SCAQMD's thresholds for regional and localized emissions. As implementation of the Master Plan Update would result in less than significant impacts regarding localized concentrations during operations, the timely attainment of air quality standards or 2022 AQMP emissions reductions would not be delayed by the proposed project.

Criterion 2

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the Basin focuses on the attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether the project exceeds the assumptions utilized in preparing the forecasts presented in the 2022 AQMP. Determining whether a project exceeds the assumptions reflected in the 2022 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?

A project is consistent with the 2022 AQMP in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the 2022 AQMP. In the case of the 2022 AQMP, three sources of data form the basis for the projections of air pollutant emissions: the CSULB Master Plan Update, SCAG's regional growth forecast, and SCAG's 2020-2045 RTP/SCS. The 2020-2045 RTP/SCS also provides socioeconomic forecast projections of regional population growth.

As discussed in Section 3.9, Population and Housing, implementation of the proposed Master Plan Update would not cause substantial direct and indirect population growth. The Master Plan Update is anticipated to result in a net increase in the on-campus population from 32,699 FTES, FTE employees, auxiliary employees, and faculty/staff household members in Academic Year 2019-2020 to 38,165 in the 2035 Master Plan Update horizon year. However, as an urban commuter campus, it is anticipated that most of the net new on-campus student and employee population would come from within the SCAG region. Additionally, SCAG collects college enrollment estimates and accounts for university students in their population projections.[7] The net increase in the campus population resulting from implementation of the proposed Master Plan

[7] Southern California Association of Governments, Adopted September 2020, *SCAG Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.

Update would represent approximately 0.03 percent of the population in the SCAG region, 0.05 percent of the population in Los Angeles County, and 0.16 percent of the population in Orange County in the horizon year 2035. As SCAG collects college enrollment estimates and accounts for university students in their population projections, the campus population and faculty and staff employment growth is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS. Because SCAG's population projections were used to develop the 2022 AQMP, and the projected campus population is accounted for in the SCAG regional demographic and growth forecasts as it is anticipated that most of the net new on-campus student and employee population would come from within the SCAG region, implementation of the proposed Master Plan Update would be consistent with the population projections included in the 2022 AQMP.

CSULB is an entity of the CSU, and the campus is state-owned property; therefore, campus development is not subject to local land use policies or regulations. Instead, campus development is required to comply with the official adopted master plan map and the design guidelines, development standards, and other development assumptions set forth in the Master Plan, which serves as a guidance document, as well as other official adopted CSU and university policies governing land use. While some proposed improvements, such as enhancements to or new pedestrian crossing, would occur on the periphery of the campus, along Palo Verde Avenue and Rendina Street, Atherton Street and Merriam Way, Bellflower Boulevard and Beach Drive, and 7th Street and West Campus Drive, development of the proposed Master Plan Update projects would not change existing land uses in the areas surrounding the main campus and the Beachside Village property. Additionally, implementation of the Master Plan Update would be consistent with the City of Long Beach's General Plan Land Use Element strategies to "work with students, faculty and alumni from California State University Long Beach and other emerging employment sectors of interest to local students" (LU Policy 5-3), and "work with students, faculty and alumni from California State University, Long Beach and other higher educational institutions to encourage the development of housing to meet student housing needs and housing needs of recent graduates" (LU Policy 12-7).[8] Implementation of the proposed Master Plan Update would not change the site's land use designation.

Thus, implementation of the proposed Master Plan Update would be consistent with the types, intensity, and patterns of land use envisioned for the site vicinity. As the SCAQMD has incorporated these same projections into the 2022 AQMP, implementation of the proposed Master Plan Update would be consistent with the projections.

b) Would the project implement all feasible air quality mitigations?

The demolition of on-site structures and development of the Master Plan Update would be required to comply with all applicable SCAQMD rules and regulations, including Rule 403 that requires excessive fugitive dust emissions are controlled by regular watering or other dust prevention measures and Rule 1113 that regulates the ROG content of paint. Additional SCAQMD rules and regulations that would apply to the project are listed in Section, 3.2.3, Methodology. As such, implementation of the proposed Master Plan Update meets this AQMP consistency criterion.

[8] City of Long Beach, December 2019, *General Plan – Land Use Element*.

c) Would the project be consistent with the land use planning strategies set forth in the AQMP?

Land use planning strategies set forth in the 2022 AQMP are primarily based on the 2020-2045 RTP/SCS. As discussed in Section 3.6, Greenhouse Gas Emissions, implementation of the proposed Master Plan Update would be consistent with land use planning strategies from the 2020-2045 RTP/SCS to: (1) Focus Growth Near Destinations and Mobility Options; (2) Promote Diverse Housing Choices; (3) Leverage Technology Innovations; (4) Support Implementation of Sustainability Policies; (5) Promote a Green Region. The campus is located within an urbanized area that is served by existing transit, sidewalks, and bicycle paths. To support the goal of focusing growth near destinations and mobility options, future developments projects implemented under the Master Plan Update would consist of infill development that would occur within the CSULB campus. The Master Plan Update would also provide improvements to the campus's pedestrian, bicycle, and all-wheel, on-campus transit, and vehicular networks to increase safety for pedestrians and bicyclists and enhance overall circulation and access. To promote diverse housing choices, implementation of the Master Plan Update would increase the number of student beds on campus and would provide new housing for faculty/staff. To leverage technology innovations, CSULB would update their Transportation Demand Management plan, which could include strategies such as on-demand shuttle service or ride-hailing subsidies, mobility hubs that provide a transfer space for different modes that includes car/bike share and electric vehicle rentals. To support implementation of sustainability policies, the Master Plan Update would be required to comply with 2022 Title 24 standards and California Green Building Standards Code, which would help reduce energy consumption and reduce GHG emissions by increasing energy efficiency and using photovoltaic panels on all new buildings. Further, CSULB would seek LEED certification and Net Zero Energy for some of the proposed buildings that would be implemented under the Master Plan Update. Additionally, CSULB is phasing out the use of natural gas, which would be consistent with statewide goals. To promote a green region, the Master Plan proposes improvements to landscaping and open space centered on three key themes, including providing a sense of place within each district; increasing programmable space to provide flexibility to adapt to the evolving needs of the university and the community; and building upon the existing park-like setting to enhance the campus's urban forest, which offers aesthetic, environmental, and wellness benefits. Overall, implementation of the Master Plan Update would be consistent with the five strategies found within the 2020-2045 RTP/SCS. As such, implementation of the proposed Master Plan Update is consistent with the land use planning strategies set forth in the AQMP.

In conclusion, the determination of 2022 AQMP consistency is primarily concerned with a project's long-term influence on the Basin's air quality. Implementation of the proposed Master Plan Update would not result in a long-term impact on the region's ability to meet state and Federal air quality standards and would be consistent with the 2022 AQMP's goals. As discussed above, the Master Plan Update's long-term influence would also be consistent with the SCAQMD and SCAG's goals and policies and is, therefore, considered consistent with the 2022 AQMP. Impacts associated with compliance with the 2022 AQMP would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

The near- and mid-term development projects listed in Section 3.2.3, Methodology, would accommodate the needs of the current student, faculty, and staff campus populations as well as projected student enrollment and campus population growth. This enrollment and campus population growth is identified above under the program-level analysis. As discussed, the net increase in campus population is accounted for in SCAG's regional growth forecast. Therefore,

the near- and mid-term development projects would not result in substantial population growth and would not exceed SCAG growth projections.

As discussed in Threshold AQ-2 below, an air quality modeling analysis was performed to identify the near- and mid-term development projects' impacts on air quality. Construction and operational emissions associated with the near- and mid-term development projects would not exceed the SCAQMD significance thresholds for ROG, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$. As the near- and mid-term development projects are a component of the program-level implementation of the Master Plan Update, these development projects also would not exceed the SCAQMD significance thresholds for ROG, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$. Therefore, the near- and mid-term development projects would not conflict with or obstruct implementation of the 2022 AQMP, and impacts would be less than significant.

AQ-2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Program-Level Analysis for Master Plan Update

Construction

Construction-related activities associated with buildout of the Master Plan Update would result temporarily in emissions of criteria air pollutants and precursors from site preparation (e.g., demolition, excavation, grading, and clearing); exhaust from off-road equipment, material delivery trucks, and worker commute vehicles; vehicle travel on roads; and other construction activities (e.g., building construction, asphalt paving, application of architectural coatings, and trenching for utility installation). The thresholds of significance recommended by the SCAQMD for construction emissions were developed for individual development projects. However, as described in Section 3.2.3, the near- and mid-term development projects were modeled separately and the maximum daily emissions for each development project in each construction year were then added up to account for potential overlapping.

In addition to the most impactful near- and mid-term development projects, implementation of the Master Plan Update would include various renovation projects for academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements through the 2035 horizon year. However, these projects are not included in the modeling for construction emissions as they do not typically result in substantial daily short-term construction emissions as the construction activities would be minor. Additionally, the usage of construction equipment with low emission factors and high energy efficiency per USEPA Tier 4 emissions standards, and ongoing regulatory compliance would minimize construction-related emissions. As discussed above, the most impactful near-term and mid-term projects in terms of air quality emissions (i.e., with the most intensive construction scenarios) were assumed to overlap between the development years of 2024 through 2031 in order to develop a conservative analysis, as shown in Table 3.2-8, Construction-Related Emissions. This table presents the anticipated maximum daily short-term construction emissions based on the most impactful near- and mid-term development projects in each construction year. As shown in Table 3.2-8, the highest levels of construction-related emissions would mostly occur in 2027, when six of the 11 development projects modeled would overlap. As such, the year 2027 would represent the worst-case scenario for program-level construction impacts. As shown in Table 3.2-8, the maximum daily emissions for each criteria pollutant would not exceed the SCAQMD thresholds under the program-level analysis. Additionally, future development projects would be required to comply with all applicable SCAQMD rules, listed in Section 3.2.3, Methodology, as well as

CSULB's standard construction controls, which are typical of those required of all construction contractors working on the campus, to minimize construction emissions.

Table 3.2-8: Construction-Related Emissions for Near- and Mid-Term Projects

Emissions Source	Maximum Daily Emissions (pounds/day)[a]					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction Related Emissions[b]						
2024	7.18	63.39	63.44	0.17	16.92	7.04
2025	10.64	53.63	75.52	0.20	14.30	5.53
2026	33.82	52.98	65.47	0.14	11.75	5.35
2027	60.37	65.91	73.31	0.16	10.87	5.96
2028	17.35	37.62	48.97	0.10	3.01	1.76
2029	14.09	23.63	27.64	0.06	4.28	2.29
2030	1.34	9.72	14.91	0.04	0.79	0.33
2031	10.92	7.20	13.21	0.03	0.59	0.34
Maximum Daily Emissions	**60.37**	**65.91**	**75.52**	**0.20**	**16.92**	**7.04**
SCAQMD Thresholds	*75*	*100*	*550*	*150*	*150*	*55*
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

a. Emissions were calculated using CalEEMod, version 2020.4.0. Winter emissions represent the worst-case scenario.

b. Modeling assumptions include compliance with SCAQMD Rule 403 which requires the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour.

Source: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations for detailed model input/output data.

Fugitive Dust Emissions

Construction activities would produce fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working around a project site. Fugitive dust emissions are associated with demolition, land clearing, ground excavation, cut-and-fill, and truck travel on unpaved roadways. Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation and construction is expected to be short-term and would cease upon project completion. Most of this material is inert silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. $PM_{2.5}$ is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_X and SO_X

combining with ammonia. $PM_{2.5}$ components from material in the Earth's crust, such as dust, are also present, with the amount varying in different locations.

Construction activities would comply with SCAQMD Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures. Adherence to Rule 403 greatly reduces PM_{10} and $PM_{2.5}$ concentrations. As presented in Table 3.2-8, total PM_{10} and $PM_{2.5}$ emissions (16.92 lbs/day and 7.04 lbs/day, respectively) would not exceed the SCAQMD thresholds during construction. Therefore, construction-related air quality impacts from fugitive dust emissions would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies to and from the project site for individual development projects, employee commutes to the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to/from the site. The majority of construction equipment and vehicles would be diesel-powered, which tends to be more efficient than gasoline-powered equipment. Diesel-powered equipment produces lower CO and hydrocarbon emissions than gasoline equipment but produces greater amounts of NO_X, SO_X, and particulates per hour of activity. The transportation of machinery, equipment, and materials to and from the site, as well as construction worker trips, would also generate vehicle emissions during construction. As presented in Table 3.2-8, the overall construction-related emissions, including from construction equipment and worker vehicle exhaust emissions, for all criteria pollutants would not exceed the applicable established SCAQMD thresholds. Therefore, impacts would be less than significant.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving and architectural coating have been quantified with the CalEEMod model. All development projects would be required to comply with SCAQMD Rule 1113 – *Architectural Coating,* which provides specifications on painting practices as well as regulation on the ROG content of paint used during all architectural coating activities for the proposed structures. As shown in Table 3.2-8, the maximum daily ROG emissions (60.37 lbs/day) would not exceed the established SCAQMD thresholds. Therefore, impacts would be less than significant.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by the CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of

releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*, serpentinite and ultramafic rocks are not known to occur within the project area.[9] Therefore, there would be no impacts related to asbestos from serpentinite and ultramafic rocks.

Operation

Long-term air quality impacts would consist of mobile source emissions generated from existing and project-related traffic and emissions from area and energy sources, as further discussed below. Emissions associated with each source are detailed in Table 3.2-9, Baseline and Project-Generated Operational Emissions, and discussed below.

Table 3.2-9: Baseline and Project-Generated Operational Emissions

Emissions Source	Maximum Daily Emissions (lbs/day)[a,b]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Baseline Emissions						
Area Source	126.95	0.03	3.37	0.00	0.01	0.01
Energy Source	4.07	36.99	31.07	0.22	2.81	2.81
Mobile Source	139.90	233.46	1,638.23	3.30	303.16	83.38
Total Baseline Emissions	**270.92**	**270.47**	**1,672.67**	**3.52**	**305.98**	**86.20**
Campus at Buildout Emissions						
Area Source	148.15	0.03	3.87	0.00	0.01	0.01
Energy Source	4.07	36.99	31.07	0.22	2.81	2.81
Mobile Source	108.32	109.28	1,094.86	2.57	343.65	92.51
Total Campus at Buildout Emissions	**260.54**	**146.30**	**1,129.80**	**2.79**	**346.48**	**95.33**
Net Change Per Emission Source						
Net change for Area Source	21.20	0.00	0.50	0.00	0.00	0.00
Net change for Energy Source	0.00	0.00	0.00	0.00	0.00	0.00
Net change for Mobile Source	-31.58	-124.18	-543.37	-0.73	40.50	9.13
Net Change Per Pollutant (Campus at Buildout Minus Baseline Emissions)	***-10.38***	***-124.17***	***-542.87***	***-0.73***	***40.50***	***9.14***
SCAQMD Regional Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

a. Emissions were calculated using CalEEMod, version 2020.4.0. The values shown are the maximum summer or winter (whichever is greater) daily emissions results from CalEEMod.
b. The numbers may not add up precisely due to rounding.

Source: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations, for detailed model input/output data.

[9] Department of Conservation Division of Mines and Geology, August 2000, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report*.

Area Source Emissions

Area source emissions would be generated from consumer products, area architectural coatings, and landscaping equipment associated with the development of the proposed Master Plan Update. As shown in Table 3.2-9, with the exception of ROG and CO, project-generated operational emissions associated with area sources would generally be unchanged for NO_X, SO_X, PM_{10}, and $PM_{2.5}$ compared to the baseline, which can be partially attributed to the constant development of emissions reduction technology and regulatory restrictions for consumer products, area architectural coatings, and landscaping equipment in the future (i.e., 2035 horizon year). Overall, the net change in operational emissions from area sources would not exceed SCAQMD thresholds for each criteria pollutant.

Energy Source Emissions

Criteria air pollutant emissions from electricity use were not quantified since criteria pollutant emissions occur at the site of the power plant, which is off-site. As such, only emissions from natural gas usage were quantified in CalEEMod. As discussed, CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB Climate Action and Adaptation Plan, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030. Instead of natural gas, the university is moving towards 100 percent usage of electricity. However, to be conservative, this analysis assumes natural gas use for operation in 2035 would remain the same as under existing conditions. This assumption is conservative as the new buildings under the Master Plan Update would not consume natural gas, and some existing buildings would consume less natural gas as they would be retrofitted under the Master Plan Update to be fully electrified. As shown in Table 3.2-9, there would be no net change in operational emissions from energy sources, and net operational emissions from energy sources would not exceed SCAQMD thresholds for each criteria pollutant.

Mobile Source Emissions

Mobile source emissions are generated from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 [photochemical smog], and wind currents readily transport SO_X, PM_{10}, and $PM_{2.5}$). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

As described in Operational Emissions Methodology in Section 3.2.3, Methodology, the mobile source emissions were calculated using the trip generation and VMT data provided in the transportation analysis. As shown in Table 3.2-9, with the exception of PM_{10} and $PM_{2.5}$, project-generated operational emissions associated with mobile sources (i.e., vehicle traffic) would result in a net decrease for ROG, NO_X, CO, and SO_X emissions compared to the baseline, due to the reduced mobile source emission factors in the 2035 horizon year. Mobile source emissions calculations used CalEEMod default emission factors, which decrease annually due to State regulations, such as the Low-Emission Vehicle (LEV) Program. These regulations would reduce mobile source emissions regardless of individual behavioral changes or CSULB's actions, as they regulate fuel and vehicle emission standards at the manufacturer level, not the consumer level. As such, although daily trips and VMT would increase as a result of the Master Plan Update, associated mobile source emissions would decrease. Overall, net operational emissions from mobile sources would not exceed SCAQMD thresholds for each criteria pollutant.

Total Operational Emissions

As shown in Table 3.2-9, there would be a net reduction in total operational ROG (-10.38 lbs/day), NO_X (-124.17 lbs/day), CO (-542.87 lbs/day), and SO_X (-0.73 lbs/day) emissions, due to the reduced mobile source emission factors in the 2035 horizon year. Though operational PM_{10} (40.50 lbs/day) and $PM_{2.5}$ (9.14 lbs/day) emissions would increase, the total net increase of operational PM_{10} and $PM_{2.5}$ emissions would not exceed established SCAQMD thresholds. Therefore, impacts from operation of the proposed Master Plan Update would be less than significant.

Air Quality Health Impacts

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, O_3 precursors, VOCs and NO_x, affect air quality on a regional scale. Health effects related to O_3 are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results. Further, as noted in the Brief of Amicus Curiae by the SCAQMD, the SCAQMD acknowledged it would be extremely difficult if not impossible to quantify health impacts of criteria pollutants for various reasons, including modeling limitations as well as where in the atmosphere air pollutants interact and form.[10] Furthermore, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (SJVAPCD), SJVAPCD has acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts.[11]

The SCAQMD acknowledges that health effects quantification from O_3, as an example, is correlated with the increases in ambient level of O_3 in the air (concentration) that an individual person breathes. SCAQMD's Brief of Amicus Curiae states that it would take a large amount of additional emissions to cause a modeled increase in ambient O_3 levels over the entire region. The SCAQMD states that based on their own modeling in the SCAQMD's *2012 Air Quality Management Plan*, a reduction of 432 tons (864,000 pounds) per day of NO_x and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce O_3 levels at the site where the highest O_3 level was recorded by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify O_3-related health impacts caused by NO_x or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. Thus, implementation of the proposed Master Plan Update would not exceed SCAQMD thresholds for operational air emissions (refer to Table 3.2-9). Additionally, implementation of the Master Plan Update would comply with existing SCAQMD regulations. Therefore, air quality health-related impacts would be less than significant.

[10] South Coast Air Quality Management District, 2014, *Application of the South Coast Air Quality Management District for Leave to File Brief of Amicus Curiae in Support of Neither Party and Brief of Amicus Curiae. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*.

[11] San Joaquin Valley Air Pollution Control District, 2014, *Application for Leave to File Brief of Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. In the Supreme Court of California. Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed individual near- and mid-term development projects would result in air quality impacts similar to those described above at the program level for implementation of the Master Plan Update. Emissions from the construction phase of the following near- and mid-term development projects were calculated using CalEEMod: Engineering Replacement Building, New Parkside Housing Village, Faculty and Staff Housing, USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, New 7th St. Community Outreach Facility, Jack Rose Track/Commencement Facilities, and Walter Pyramid Renovation. The evaluation of the potential criteria pollutant emissions related to implementation of the Master Plan Update in the program-level analysis above determined that the impact would be less than significant. For conservative purposes, the program-level analysis of criteria pollutant emissions above accounts for the overlap of the most impactful near- and mid-term development across the CSULB main campus and the Beachside Village property, rather than individual development projects. As discussed above, the highest levels of construction-related emissions would mostly occur in 2027, when six of the 11 development projects modeled are projected to overlap. As such, the near- and mid-term development projects are accounted for in the modeling and would likewise be expected to have a less than significant impact related to criteria pollutant emissions.

Operation

As described in Operational Emissions Methodology in Section 3.2.3, Methodology, project- related operational sources of air pollutant emissions would include natural gas combustion, on-road vehicles, and area sources (i.e., use of consumer products, architectural coatings for repainting, and landscaping equipment). As shown in Table 3.2-9 above for the program-level analysis, the daily operational emissions from implementation of the Master Plan Update would not exceed the SCAQMD significance thresholds for ROG, NO_X, CO, SO_2, PM_{10}, or $PM_{2.5}$. Given that each near- and mid-term development project is captured within the program-level analysis presented in Table 3.2-9, operational emissions of criteria air pollutants for each near- and mid-term development project would be less than the total emissions for ROG, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$, and therefore, would not exceed the SCAQMD significance thresholds. As such, operational impacts of the near- and mid-term development projects would be less than significant.

AQ-3 Would the project expose sensitive receptors to substantial pollutant concentrations?

Program-Level Analysis for Master Plan Update

Construction

Localized Significance Thresholds

LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised October 2009]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts to sensitive receptors associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one-, two-, and five-acre projects emitting CO, NO_X, $PM_{2.5}$, or PM_{10}. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources

traveling over the roadways. The project site is located within SRA 4.

Construction-related activities associated with buildout of the Master Plan Update would result temporarily in emissions of CO, NO_X, $PM_{2.5}$, or PM_{10} from site preparation (e.g., demolition, excavation, grading, and clearing); exhaust from off-road equipment, material delivery trucks, and worker commute vehicles; vehicle travel on roads; and other construction activities (e.g., building construction, asphalt paving, application of architectural coatings, and trenching for utility installation). The thresholds of significance recommended by the SCAQMD for construction emissions were developed for individual development projects. However, as described in Section 3.2.3, the most impactful near- and mid-term development projects were modeled separately and the maximum daily emissions for each development project in each construction year were then added up to account for overlapping. In addition to the most impactful near- and mid-term development projects, implementation of the Master Plan Update would include various renovation projects for academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements through the 2035 horizon year. These projects are not included in the modeling for construction emissions as they do not represent a worst-case scenario for air quality emissions and would not result in substantial daily short-term construction emissions. As shown below in Table 3.2-10, Localized Significance Construction Emissions Summary, the maximum daily emissions for each criteria pollutant would not exceed the SCAQMD's LST thresholds under the program-level analysis. Additionally, future development projects would be required to comply with all applicable SCAQMD rules, listed in Section 3.2.3, Methodology, as well as CSULB's standard construction controls to minimize construction emissions of CO, NO_X, $PM_{2.5}$, or PM_{10}.

Health Effects from Toxic Air Contaminants

Construction-related activities would result in temporary, intermittent emissions of DPM, which is identified as a TAC by CARB, from the exhaust of off-road, heavy-duty diesel equipment used for construction activities, including demolition, clearing, grading, paving, on-road truck travel, and other miscellaneous activities. On-road diesel-powered haul trucks traveling to and from the construction areas to deliver materials and equipment would not stay on site for long periods of time, and as such, would not result in substantial DPM emissions. More than 90 percent of DPM is less than 1 µm in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$.

As described in Section 3.2.2, Environmental Setting, the sensitive receptors located nearest to the CSULB main campus include single-family residences and a preschool, and the sensitive receptors located nearest to the Beachside Village property include multi-family residences. Cancer health risks associated with exposures to diesel exhaust typically are associated with chronic exposure, in which a 30-year exposure period is assumed. However, health impacts to sensitive receptors associated with exposure to DPM from construction of development projects under the Master Plan Update are anticipated to be less than significant, because construction activities of the Master Plan Update are expected to occur well below the 30-year exposure period used in health risk assessments. Additionally, emissions would be short-term and intermittent in nature and would not generate TAC emissions at high enough exposure concentrations to represent a health hazard. As shown in Table 3.2-8, the maximum daily emissions of $PM_{2.5}$ would be 7.04 lbs/day in 2024, which is substantially lower than the SCAQMD threshold (55 lbs/day) for emissions of $PM_{2.5}$. Thus, the associated DPM emissions are not anticipated to be significant. This maximum daily emission level represents multiple, simultaneous construction projects. It is more likely, however, that construction activities would be located at various locations throughout the campus, and due to the dispersive properties of DPM, concentrations from individual

construction sites would be lower. In addition, the use of off-road heavy-duty diesel equipment would be limited to the construction phase of 8 years but with each individual construction activity within this 8-year period being shorter. As construction progresses, activity intensity and duration would vary throughout the campus. As such, no single existing or future sensitive receptor would be exposed to substantial construction-related emissions of DPM for extended periods of time.

Regarding existing off-site receptors, sensitive receptors are located within 140 feet from the nearest development project, with other sensitive receptors up to 1,270 feet away. Studies show that DPM is highly dispersive, and receptors must be close to emissions sources and for long durations to result in exposure to concentrations of concern. Because of the distance between construction sites and their associated sensitive receptors and the intermittent nature of DPM emissions during construction, TAC emissions would not adversely affect sensitive receptors. Given the anticipated low level of daily DPM emissions, construction-related TAC emissions would not be substantial. Additionally, construction of the individual development projects under the Master Plan Update would be required to comply with the California Code Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. Implementation of these regulations would reduce the amount of DPM emissions from the construction of the development projects. Therefore, construction activities associated with the Master Plan Update are not anticipated to result in an elevated cancer risk to nearby sensitive receptors, and the impact would be less than significant.

Operation

Localized Significance Thresholds

According to SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). Implementation of the Master Plan Update may involve developments that could include stationary sources that may introduce VOCs such as art and science laboratories/rooms or attract mobile sources spending extended periods of queuing and idling at site. However, individual development projects within CSULB would occur in incremental phases over time; operational emissions would therefore not occur all at one time to impact any sensitive receptors nearby. Additionally, implementation of the Master Plan Update would result in the continuation of existing academic programs, extra-curricular activities, and similar housing and instructional facilities, and would not fundamentally change the nature of campus operations. Thus, there would be no new sources of substantial pollutant concentrations. Furthermore, as shown in Table 3.2-9, net operational emissions for all criteria pollutants would be below the SCAQMD's significance thresholds. Thus, operational impacts related to exposing sensitive receptors to substantial pollutant concentrations associated with the proposed Master Plan Update would be less than significant.

Health Effects From Toxic Air Contaminants

The Master Plan Update would involve new developments including classrooms, offices, labs, faculty and student housing, sports facilities, and cafeterias that would result in very limited operational activities with potential health risks, including landscaping maintenance operations, labs operations, and boilers for cafeterias. None of these activities are new uses for the campus and would result in the generation of excessive TAC emissions that are more intensive than existing conditions, or associated health risks from project operation. Therefore, operation associated with the Master Plan Update is not anticipated to result in an elevated cancer risk to

nearby sensitive receptors, and the impact would be less than significant.

Health Effects from Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels (e.g., adversely affecting residents, school children, hospital patients, and the elderly).

The Basin is designated as an attainment/maintenance area for the Federal CO standards and an attainment area under state standards. There has been a decline in CO emissions even though VMT on U.S. urban and rural roads have increased. According to the 2022 AQMP, the highest concentrations of CO within California continued to be recorded in the areas of Los Angeles County, where vehicular traffic is most dense, with the maximum 8-hour and 1-hour concentration (3.1 ppm and 4.5 ppm, respectively) recorded in the South Central Los Angeles County area. Three major control programs have contributed to the reduced per-vehicle CO emissions, including exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

According to the SCAQMD *CEQA Air Quality Handbook*, a potential CO hotspot may occur at any location where the background CO concentration already exceeds 9.0 parts per million (ppm), which is the 8-hour California ambient air quality standard. The closest monitoring station to the CSULB campus that monitors CO concentration is the Long Beach-Signal Hill Monitoring Station located approximately 2.7 miles northwest of the main campus. The maximum CO concentration at the Long Beach-Signal Hill was measured at 2.272 ppm in 2021 (refer to Table 3.2-2). Given that the background CO concentration does not currently exceed 9.0 ppm, a CO hotspot would not occur at the CSULB main campus or Beachside Village property. Therefore, CO hotspot impacts associated with implementation of the proposed Master Plan Update would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

The SCAQMD guidance on applying CalEEMod to LSTs specifies the number of acres a particular piece of equipment would likely disturb per day. SCAQMD provides LST thresholds for one, two-, and five-acre site disturbance areas; SCAQMD does not provide a LST threshold over five acres. The localized impacts are not additive, as each development project would impact different sensitive receptors. Therefore, although some of the near- and mid-term development projects would overlap on construction activities, the localized construction impacts were analyzed for each of the most impactful near-term and mid-term development projects individually. The LST thresholds for each individual development project were determined by the respective project's acreage of site disturbance areas and the distance to the closest off-site sensitive receptors. Table 3.2-10, Localized Significance Construction Emissions Summary identified the localized impacts for each individual development project. The localized emissions presented in Table 3.2-10 are less than each development project's maximum daily emissions because localized emissions include only on-site emissions (e.g., from construction equipment and fugitive dust) and do not include off-site emissions (e.g., from hauling activities). As shown in Table 3.2-9, localized on-site construction emissions for each development project would not exceed the SCAQMD LSTs thresholds. Therefore, impacts related to localized emissions during construction of the near- and mid-term development projects would be less than significant.

Table 3.2-10: Localized Significance Construction Emissions Summary

Development Project	Maximum Daily On-Site Emissions (pounds per day)[e]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Engineering Replacement Building[a]	12.91	13.33	3.12	1.73
SCAQMD Localized Threshold (1-acre, 200-meter)[d]	90	2,296	61	26
Threshold Exceeded?	**No**	**No**	**No**	**No**
New Parkside Housing Village[b]	32.38	27.72	4.75	2.58
SCAQMD Localized Threshold (2-acre, 100-meter)[d]	87	1,611	37	13
Threshold Exceeded?	**No**	**No**	**No**	**No**
Faculty and Staff Housing[a]	19.20	19.42	3.25	1.84
SCAQMD Localized Threshold (1-acre, 50-meter)[d]	58	789	13	5
Threshold Exceeded?	**No**	**No**	**No**	**No**
USU Renovation/Addition and Cafeteria Replacement[a]	12.91	13.33	3.12	1.73
SCAQMD Localized Threshold (1-acre, 200-meter)[d]	90	2,296	61	26
Threshold Exceeded?	**No**	**No**	**No**	**No**
Hillside College Renovations/Addition[c]	9.73	7.39	2.37	1.32
SCAQMD Localized Threshold (1-acre, 200-meter)[d]	90	2,296	61	26
Threshold Exceeded?	**No**	**No**	**No**	**No**
Beachside Housing[c]	9.73	7.39	2.37	1.32
SCAQMD Localized Threshold (1-acre, 25-meter)[d]	57	585	4	3
Threshold Exceeded?	**No**	**No**	**No**	**No**
Aquatics Center and Pool Renovation[c]	9.73	7.39	2.37	1.32
SCAQMD Localized Threshold (1-acre, 200-meter)[d]	90	2,296	61	26
Threshold Exceeded?	**No**	**No**	**No**	**No**
College of the Arts Replacement Building[a]	12.91	13.33	3.12	1.73
SCAQMD Localized Threshold (1-acre, 25-meter)[d]	57	585	4	3
Threshold Exceeded?	**No**	**No**	**No**	**No**
New 7th St. Community Outreach Facility[a]	12.91	13.64	3.12	1.73
SCAQMD Localized Threshold (1-acre, 50-meter)[d]	58	789	13	5
Threshold Exceeded?	**No**	**No**	**No**	**No**
Jack Rose Track/Commencement Facilities[c]	8.73	7.36	2.32	1.27
SCAQMD Localized Threshold (1-acre, 200-meter)[d]	90	2,296	61	26
Threshold Exceeded?	**No**	**No**	**No**	**No**
Walter Pyramid Renovation[c]	8.73	7.36	2.32	1.27
SCAQMD Localized Threshold (1-acre, 100-meter)[d]	68	1,180	29	10
Threshold Exceeded?	**No**	**No**	**No**	**No**

Notes: NO_X = nitrous oxide; CO = carbon monoxide; PM_{10} = particulate matter smaller than 10 microns; $PM_{2.5}$ = particulate matter smaller than 2.5 microns

a. The highest on-site NO_X and CO emissions are during the demolition phase, and the highest on-site $PM_{2.5}$, and PM_{10} emissions are during the grading phase.

b. The highest on-site NO_X, CO, $PM_{2.5}$, and PM_{10} emissions are during the grading phase.

c. The highest on-site CO emissions are during the demolition phase, and the highest on-site NO_X, $PM_{2.5}$, and PM_{10} emissions are during the grading phase.

d. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized

Table 3.2-10: Localized Significance Construction Emissions Summary

Significance Threshold uses the area disturbed and the distance to sensitive receptors for each individual development project and SRA 4.

e. The emissions data modeled in CalEEMod is with the implementation of SCAQMD Rule 403 which requires the following: properly maintain mobile and other construction equipment; replace the ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stockpiles with tarps; water all haul roads three times daily; and limit speeds on unpaved roads to 15 miles per hour.

Source: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations for assumptions used in this analysis.

Operation

According to SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a project if the project includes stationary sources or attracts mobile sources that may spend extended periods queuing and idling at the site (e.g., warehouse or transfer facilities). Occasional truck deliveries and trash pickup would occur at the near- and mid-term development projects, similar to existing conditions. These truck delivery/trash pickup activities would be intermittent and would not include extended periods of idling time; therefore, idling emissions from truck deliveries would be minimal. Thus, due to the lack of such emissions, no long-term localized significance threshold analysis is needed. Therefore, operational LST impacts associated with operation and maintenance of the near- and mid-term development projects would be less than significant.

Health Effects from Toxic Air Contaminants

The near- and mid-term development projects under the Master Plan Update would result in very limited operational activities with potential health risks, including landscaping maintenance operations, labs operations, and boilers for cafeterias. As discussed under the program-level analysis, none of these activities are new uses for the campus or would result in the generation of excessive TAC emissions that are more intensive than existing conditions, or associated health risks from project operation. Therefore, operation of near- and mid-term projects associated with the Master Plan Update is not anticipated to result in an elevated cancer risk to nearby sensitive receptors, and the impact would be less than significant.

Health Effects from Carbon Monoxide Hotspots

As discussed under the program-level analysis, the maximum CO concentration of 2.272 ppm in 2021 at Long Beach-Signal Hill, the closest monitoring station to CSULB campus, does not currently exceed the 8-hour California ambient air quality standard (9.0 ppm). As the near- and mid-term development projects would occur within the CSULB main campus and Beachside Village property, CO hotspot impacts associated with implementation of the proposed Master Plan Update would be less than significant.

3.2.5 Mitigation Measures

No mitigation measures are required.

3.2.6 Level of Significance After Mitigation

Development under the Master Plan Update would result in less than significant impacts to air quality.

3.2.7 Cumulative Impacts

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered cumulatively considerable. “Related projects” refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

Consistency with Applicable Air Quality Plan

Future related projects would be required to analyze project-level consistency with applicable air quality plans, including the 2022 AQMP. As analyzed above, operational concentrations of criteria air pollutants from implementation of the Master Plan Update would be lower than SCAQMD thresholds. Therefore, implementation of the Master Plan Update would not result in an increase in the frequency or severity of existing air quality violations. Further, the Master Plan Update would be consistent with the SCAQMD and SCAG’s goals and policies. In addition, the growth anticipated by the Master Plan Update would be consistent with SCAG’s growth forecast as it is anticipated that most of the net new on-campus student and employee population would come from within the SCAG region, and therefore is consistent with the 2022 AQMP. As such, impacts associated with consistency with the applicable air quality plan would not be cumulatively considerable for the implementation of the proposed Master Plan Update. Cumulative impacts would be less than significant.

Construction

The SCAQMD neither recommends quantified analyses of cumulative construction emissions nor does it provide separate methodologies or thresholds of significance to be used to assess cumulative construction impacts. The SCAQMD significance thresholds for construction are intended to meet the objectives of the 2022 AQMP to ensure the NAAQS and CAAQS are not exceeded. As CSULB has no authority over the timing or sequencing of cumulative projects in the project vicinity, any quantitative analysis to ascertain the daily construction emissions that assumes multiple, concurrent construction would be speculative. Future cumulative projects would also be required to analyze construction emission impacts on a project-level under CEQA and implement mitigation as needed.

As indicated in Table 3.2-8, Construction Related Emissions, which presents the anticipated maximum daily short-term construction emissions in each construction year, implementation of the near- and mid-term development projects would not result in short-term air quality impacts as the project-level emissions would not exceed the SCAQMD adopted construction threshold. Therefore, the Master Plan Update would not result in cumulatively considerable impacts related to short-term construction air quality emissions.

Operation

The SCAQMD has set forth a methodological framework as well as significance thresholds for the assessment of a project’s cumulative operational air quality impacts. The SCAQMD’s approach for assessing cumulative impacts is based on the SCAQMD’s 2022 AQMP forecasts of attainment of NAAQS in accordance with the requirements of the FCAA and CCAA. This forecast also takes into account SCAQMD’s 2022 AQMP forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the project is consistent with the growth assumptions upon which the SCAQMD’s 2022 AQMP is based. If the project is consistent with the growth assumptions, then the future development would not impede the attainment of NAAQS, and a significant cumulative air quality impact would not occur.

As discussed above and detailed in Table 3.2-9, Baseline and Project-Generated Operational Emissions, implementation of the proposed Master Plan Update would not result in long-term air quality impacts, as the project's operational emissions would not exceed the SCAQMD adopted operational thresholds. Additionally, as emission reduction technology, strategies, and plans are constantly being developed, emissions and air quality impacts associated with development are generally anticipated to be lower in the future. As a result, implementation of the proposed Master Plan Update would not contribute a cumulatively considerable net increase of any non-attainment criteria pollutant or expose sensitive receptors to potentially significant health risk impacts. Therefore, cumulative operational impacts associated with the Master Plan Update would be less than significant.

3.3 BIOLOGICAL RESOURCES

This section describes the biological resources that occur or have the potential to occur on the CSULB main campus and the Beachside Village property and evaluates the potential impacts that could occur with implementation of the Master Plan Update on those resources. This section identifies common vegetation and habitat types within the CSULB campus, any sensitive plant communities and special-status plant and animal species that may occur, as well as regulatory requirements pertaining to those resources. The analysis describes potential direct and indirect impacts from implementation of the Master Plan Update and identifies mitigation measures for those impacts determined to be significant.

As discussed further in Section 3.3.3, Methodology, the CEQA Guidelines Appendix G checklist questions related to biological resources (i.e., riparian habitat, local policies protecting biological resources, and conflict with an approved habitat conservation plan) were found to have no impact or a less than significant impact in the Initial Study prepared for the Master Plan Update, and thus, are not discussed in detail in this EIR.

Comments from the California Department of Fish and Wildlife (CDFW) related to biological resources were received during the public scoping period in response to the NOP. These comments address the project's potential impacts on jurisdictional waters and sensitive wildlife species, including nesting birds and roosting bats. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.3.1 Regulatory Setting

Federal

Federal Endangered Species Act

Enacted in 1973, the federal Endangered Species Act (FESA)[1] provides for the conservation of threatened and endangered species and their ecosystems. Consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) is required when it is likely that a project could affect species that are federally listed as threatened or endangered. The purpose of the FESA is to conserve the habitats that listed species depend on so that they can recover such that protection under the FESA is no longer needed.

Section 9 of the FESA prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from USFWS through a permit under Section 4(d), 7 or 10(a) of the FESA. "Take" under the FESA is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant impacts to habitat that could result in take. If implementing a project would result in take of a federally listed species, either the project applicant must acquire an incidental take permit under Section 10(a) of the FESA, or if a federal discretionary action is involved, the federal agency must consult with USFWS under Section 7 of the act.

Migratory Bird Treaty Act

Congress passed the Migratory Bird Treaty Act (MBTA)[2] in 1918 to prohibit the kill or transport of

[1] U.S. Code, Title 16, Chapter 35, Sections 1531-1544.
[2] U.S. Code, Title 16, Chapter 7, Subchapter II, Sections 703-712.

native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. Under the MBTA, it is unlawful to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. “Take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities.” Take does not include habitat destruction or alteration, as long as there is not a direct take of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA includes approximately 1,000 bird species native to the United States. No permit is issued under the MBTA for take; measures that would avoid or minimize impacts on protected migratory birds would need to be employed during project implementation to avoid take if such impacts are identified.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (the Eagle Act) amended in 1962, was originally implemented for the protection of bald eagles. In 1962, Congress amended the Eagle Act to also cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. This act makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle or golden eagle or part thereof.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires a project applicant to obtain a permit before engaging in any activity that involves a discharge of dredged or fill material into waters of the United States, including wetlands. Fill material includes any material placed in waters of the United States that replaces any portion of waters of the United States with dry land or changes the bottom elevation of any portion of waters of the United States. Waters of the United States include navigable waters; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; relatively permanent tributaries to any of these waters; and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands typically must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of the CWA, pending verification by U.S. Army Corps of Engineers.

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredge/fill activity is consistent with the state’s water quality standards and criteria. The authority to grant water quality certification is delegated by the State Water Resources Control Board (SWRCB) to the nine regional water quality control boards.

State

California Endangered Species Act

The California Endangered Species Act (Fish and Game Code [CFGC] Sections 2050-2115) regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, and includes the California Endangered Species Act (CESA). Additionally, the CFGC regulates impacts to wetlands and waters of the State and sets forth Lake and Streambed Alteration Agreement regulations in Sections 1600 et seq.

Wildlife “take” is defined by CDFW as “to hunt, pursue, catch, capture, or kill, or attempt to hunt,

pursue, catch, capture, or kill." Protection extends to the animals, dead or alive, and all their body parts. Section 2081 of CESA allows CDFW to issue an incidental take permit for state-listed threatened or endangered species, should the project have the potential to "take" a state-listed species that has been detected within or adjacent to the main campus or Beachside Village property. Certain criteria are required under CESA prior to the issuance of such a permit, including the requirement that impacts of the take are minimized and fully mitigated.

All birds except European starlings, English house sparrows, rock doves (pigeons), and non-migratory game birds such as quail, pheasant, and grouse are protected under the MBTA. However, non-migratory game birds are protected under CFGC Section 3503. Many other bird species are considered by CDFW to be California Species of Special Concern (SSC)[3, 4] and CDFW, and others are on a CDFW Watch List (WL).[5] The CNDDB tracks species within California for which there is conservation concern, including many that are not formally listed, and assigns them a CNDDB Rank. Although CDFW SSC and WL species and species that are tracked by the CNDDB but not formally listed are afforded no official legal status, they may receive special consideration during the environmental review process.

CDFW further classifies some species under the following categories: "Fully Protected", "Protected birds" (CDFW Code §3511), "Protected mammals" (CDFW Code §4700), "Protected amphibian" (CDFW Code §5050 and Chapter 5, §41), "Protected reptile" (CDFW Code §5050 and Chapter 5, §42), and "Protected fish" (CDFW Code §5515). The designation "Protected" indicates that a species may not be taken or possessed except under special permit from CDFW; "Fully Protected" indicates that a species can be taken for scientific purposes by permit only.[6] CDFW Code §3503, 3505, and 3800 prohibit the take, destruction, or possession of any bird, nest, or egg of any bird except English house sparrows and European starlings unless express authorization is obtained from CDFW.

Porter-Cologne Water Quality Control Plan

Under Section 13000 et seq., of the Porter-Cologne Water Quality Control Act (Porter-Cologne), the local Regional Water Quality Control Board is the agency that regulates discharges of waste and fill material within any region that could affect a water of the State (California Water Code Section 13260[a]), (including wetlands and isolated waters) as defined by California Water Code Section 13050(e).

California State University

California State University, Long Beach Standard Temporary Construction Controls

CSULB outlines standard specifications for construction contractors to minimize potential impacts during construction activities at the CSULB campus. Standard temporary construction controls applicable to biological resources include tree and vegetation protection, dust control, and erosion control, which could involve but may not be limited to the following:

- Tree and Vegetation Protection:
    - Protect existing trees and other vegetation indicated to remain in place against the

[3] California Department of Fish and Wildlife, Point Blue Conservation Science, and Western Field Ornithologists, 1978, *Bird Species of Special Concern in California: an Annotated List of Declining or Vulnerable Bird Species*.
[4] California Department of Fish and Wildlife and Williams, D. F., 1986, *Mammalian Species of Special Concern in California*, Wildlife Management Division Administrative Report 86-1, 112 pp.
[5] California Department of Fish and Wildlife, July 2022, *Special Animals List*.
[6] Ibid.

following:

- Storage of parking of automobiles or other vehicles.
- Stockpiling of building materials, refuse, or excavated materials.
- Use of tress as support posts, power posts, sign posts, anchorage for ropes, guy wires, or power lines, or other similar functions.
- Dumping of deleterious materials, such as paint, petroleum products, or other similar materials, on or around plant roots, trunks, branches, or foliage.
- Damage by skinning or bruising of bark on trunks or branches, caused by maneuvering vehicles or stacking material or equipment too close to the plant.
- Compaction of soil within the dripline of plants due to movement of trucks or grading machines, pedestrian or vehicular traffic, storage of equipment or materials.
- Excessive water or heat from equipment or utility line construction under or near vegetation to remain.
- Damage to root systems from flooding, erosion, and excessive wetting and drying resulting from watering and other operations.

- Prior to commencement of construction activities, the construction contractor shall erect and maintain a temporary fenced barricade around the dripline of individual trees, around the perimeter dripline of groups of trees, or around other vegetation to remain
- The construction contractor shall supply water in adequate amounts and rates of application as required to maintain the health of protected plant material throughout the duration of construction activities.
- Where excavation for new construction is required within the dripline of trees, hand clearing shall be used to excavate to minimize damage to root systems. Damage minimization techniques include the use of narrow-tine spading forks, combing soil to expose roots, and cleanly cutting roots as close to the excavated area as possible.
- Protect root system of existing trees and vegetation from damage due to chemically injurious materials in solution caused by runoff or spillage during mixing or placement of construction materials, and drainage of stored materials.

California State University, Long Beach Landscape Master Plan

The CSULB Landscape Master Plan identifies important aspects of the landscaping elements on the CSULB main campus and provides recommendations on how to preserve and enhance the campus environment through landscaping.[7] The existing landscape elements on the main campus comprise over 150 acres. The goal of the CSULB Landscape Master Plan is to bring together all part of the main campus through the following initiatives:

- Add site specific and drought tolerant plants to the campus plant palette;

[7] California State University, Long Beach, September 2012, *Landscape Master Plan*.

- Improve and enhance pedestrian promenades within parking areas to facilitate a safe campus;
- Provide a central campus open space and pedestrian axis;
- Strengthen campus identity within the Long Beach community;
- Improve pedestrian circulation;
- Imrpove bicyle circulation and infrastructure;
- Implemente sustainable approaches to water usage, stormwater filtration, and improving the urban forest;
- Provide for a stronger continuity of open spaces throughout the campus; and
- Improve the overall quality of the campus experience.

3.3.2 Environmental Setting

The CSULB main campus encompasses 322 acres and is primarily surrounded by low-density residential neighborhoods to the north, east, south, and west. Medium-density residential and commercial uses are located near the northwestern, northeastern, and southeastern corners of the main campus, with the Veteran's Administration Medical Center complex located adjacent to the southwestern campus boundary. A restrictive covenant prohibiting development was established in 2021 on a large portion of the undeveloped land near the northwest border of the CSULB main campus, and it is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management (Restricted Parcel), identified as the National Register-listed *Puvunga Indian Villages Sites Archaeological District* on Figure 3.3-1 below. Site elevations on the main campus generally range between approximately 10 and 80 feet above mean sea level.

The Beachside Village property is located approximately 0.6 miles west of the main CSULB campus and is surrounded by multi-family residential uses to the west and northwest, commercial uses to the north, east, and southeast, and California State Route 1 (i.e., Pacific Coast Highway) to the south and southwest. Site elevations within the Beachside Village property generally range between approximately 20 and 30 feet above mean sea level.

Vegetation Communities and Plant Species

No natural vegetation communities occur within the main campus or at the Beachside Village property. Vegetation within the main campus and Beachside Village property consist of non-native ornamental tree, shrub, and ground cover species, with only a handful of native tree species observed. Grassland habitat with a scattering of trees cover the undeveloped land in the far western section of the main campus. Open space areas within the main campus and Beachside Village property that have little or no hardscape features, such as courtyards and large areas of open grass, are landscaped and maintained for formal athletic purposes, or as recreational and student gathering areas.

An inventory of trees that occur on campus has been conducted by CSULB, which identified 183 unique species and nearly 7,500 individual trees on the main campus and the Beachside Village property.[8] Common tree species, mature trees, any large stands of trees, and general observations on vegetation occurring within each main campus district and the Beachside Village

[8] California State University, Long Beach, Benefits of Trees, available at: https://benefits-of-trees-csu-long-beach-csulb.hub.arcgis.com/, accessed June 5, 2022.

property during the field survey are detailed below. The presence and species of mature trees, those generally 50 or more feet in height, was noted to evaluate the potential for such trees occurring within the main campus and Beachside Village property to provide potentially suitable nesting habitat for raptors.

South District

The South District comprises the campus core and is the densest area of buildings, roadways, and sidewalks (refer to Figure 2-6 in Chapter 2, Project Description). Buildings in this district surround a large traditional college quadrangle. Mature trees, generally ranging between 40 and 80 feet in height are common around the quadrangle, including various fig tree species (*Ficus spp.*), Chinese elm (*Ulmus parvifolia*), Canary Island pine (*Pinus canariensis*), Brazilian pepper (*Schinus terebinthifolius*), Peruvian peppertree (*S. molle*), jacaranda (*Jacaranda mimosifolia*), and southern magnolia (*Magnolia grandiflora*). Additional species of mature trees in the South District include lemonscented gum (*Corymbia citriodora*), red ironbark (*Eucalyptus sideroxylon*), white ironbark (*E. leucoxylon*), Holly oak (*Quercus ilex*), King palm (*Archontophoenix cunninghamiana*), and Italian stone pine (*Pinus pinea*). Two native tree species were observed: coast live oak (*Quercus agrifolia*) and California sycamore (*Platanus racemose*).

Smaller trees, generally ranging between 10 and 30 feet in height, occupy landscaped spaces between buildings, line roadways and sidewalks. Commonly observed species include peach (*Prunus persica*), privet (*Ligustrum spp*.), and camphor (*Cinnamomum camphora*), together with other non-native species.

Figs are the most prominent tree species throughout the South District. Mature specimens of Hill's weeping fig (*Ficus macrocarpa hillii*), green Indian laurel fig (*F. macrocarpa nitida*), and rustyleaf fig (*F. rubiginosa*) trees occur in the quadrangle and are found lining walkways throughout this district. Additionally, two dense stands of green Indian laurel fig are located just south of the McIntosh Humanities Building. These stands are each about 0.30-acre in area and consist of rows of figs regularly spaced apart, generally 50 feet in height and forming a dense canopy cover.

Central District

The Central District includes a variety of existing facilities and is the most densely populated part of the campus (refer to Figure 2-7 in Chapter 2, Project Description). This district serves as a link between the core campus in the South District and campus housing, athletics, and recreation in the North District. Fewer trees are present and hardscape (impervious) features such as parking lots, roadways, and sidewalks occupy much of this district. Variously sized Chinese elm trees are the most common tree species, lining parking lots and walkways. In addition to some of the same tree species identified in the South District, mature Aleppo pine (*Pinus halepensis*), spotted gum (*Corymbia maculate*), coral tree (*Erythrina caffra*), and mulberry (*Morus alba*) trees are present in this district.

East District

The East District includes academic programs, campus facilities and maintenance services, and the student recreation and wellness center (refer to Figure 2-8 in Chapter 2, Project Description). Mature trees are less common in this district and Chinese elm trees are most prevalent. Mature tree species in this district include Manna gum (*Eucalyptus viminalis*) and sugar gum (*E. cladocalyx*). Mature red ironbark trees form a dense line along a walkway separating this district and athletic fields in the North District. Smaller trees commonly lining parking lots and adjacent to buildings in this district include fern pine (*Podocarpus gracilior*), blue paloverde (*Parkinsonia florida*), and Chinese flame tree (*Koelreuteria bipinnata*), although a number of other non-native

species were also observed.

North District

The North District includes athletic venues and the performing arts center (refer to Figure 2-9 in Chapter 2, Project Description). A large section of this district is composed of turf athletic fields, with ornamental trees and shrubs concentrated around buildings and parking lots. Peach, sweet gum (*Liquidambar styraciflua*), London plane (*Platanus x acerifolia*), and California pepper (*Schinus molle*) trees are common in this district. Tall mature trees are less common than in other districts; however, specimens of mature red ironbark, lemon-scented gum, red gum eucalyptus (*Eucalyptus camaldulensis*), and Canary island pine were observed.

West District

The West District includes a majority of the student residence halls, dining facilities, and two primary vehicular entrances and student parking facilities (refer to Figure 2-10 in Chapter 2, Project Description). Mature red ironbark, lemon-scented gum, Canary island pine, Aleppo pine (*Pinus halepnsis*), and Indian laurel fig *(Ficus microcarpa nitida*) trees were observed in parking lots and within campus housing and dining areas. Chinese elm, jacaranda, red bottlebrush (*Callistemon citrinus*), and carrotwood (*Cupaniopsis anacardioides*) trees are common.

Beachside Village Property

The Beachside Village property is located approximately 0.6 miles west of the main campus. Most of the approximately 5-acre property is developed with student residential buildings, parking lots, and internal roadways, with a small number of ornamental trees including Mature Mexican fan palm (*Washingtonia robusta*), blue gum eucalyptus (*Eucalyptus globulus*), and shamel ash (*Fraxinus uhdei*).

Wildlife

Bird Species

A field survey was conducted on March 31, 2022, within the nesting bird season, which generally extends from February 15 through September 15, and as early as January 1 for some raptors. Thirty-three (33) bird species were detected during the field survey. Bird species observed included year-round resident species of California as well as migrating species that arrive in southern California during spring migration periods. The species detected are common in the urbanized environments within which the main campus and Beachside Village property are located. Common species detected include Anna's hummingbird (*Calypte anna*), American crow (*Corvus brachyrhynchos*), common yellowthroat (*Geothlypis trichas*), house finch (*Haemorhous mexicanus*), dark-eyed junco (*Junco hyemalis*), bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), yellow-rumped warbler (*Setophaga coronate*), lesser goldfinch (*Spinus psaltria*), house wren (*Troglodytes aedon*), and mourning dove (*Zenaida macroura*). One raptor species, red-tailed hawk (*Buteo jamaicensis*), was observed flying over the main campus during the field survey. Trees and shrubs within the main campus and Beachside Village property provide suitable nesting habitat for bird species. Additionally, mature trees potentially suitable for nesting raptors are common across the main campus, although the most prominent individual or clusters of mature trees that may provide more suitable raptor nesting habitat occur in the South and West Districts. No active or inactive nests, including any large stick nests in mature trees that could indicate the presence of a raptor nest, were observed during the field survey.

Mammal Species

One mammal species, the non-native fox squirrel (*Sciurus niger*) was observed during the field survey. Other mammals such as coyote, racoon, skunk, rabbit, opossum, and ground squirrels could also be expected within the main campus and Beachside Village property. Additionally, buildings and other structures, and trees with cavities, crevices, exfoliating bark, or bark fissures, such as the eucalyptus and palm trees occurring within the main campus and Beachside Village property, may provide potentially suitable roosting habitat for individual and small groups of bat species. However, no indications of the presence of bat roosting were observed during the field survey, such as droppings (guano), urine staining, scratching, or food remnants.

Amphibians, Reptiles, and Fish

No amphibian, reptile, or fish species were observed during the field survey. Reptiles such as western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana* elegans) likely occur within the main campus and Beachside Village property. Habitat suitable to support amphibian and fish species is absent from the main campus and Beachside Village property and such species are not anticipated. Bouton Creek, which transects the main campus, consists of a concrete box channel. It is generally unsuitable for amphibian species and does not convey suitable discharge to support fish species.

No indications of wildlife utilizing the main campus or Beachside Village property as a wildlife nursing site were detected during the literature review and field survey. Additionally, the urban setting surrounding the campus does not support significant wildlife breeding, colonial nesting, or nursing habitat.

Special-Status and Sensitive Biological Resources

The main campus and Beachside Village property are located in the southwest portion of the U.S. Geological Survey's Los Alamitos, California 7.5-minute quadrangle. The study area for special-status plant and wildlife species search includes the Los Alamitos quadrangle and the surrounding seven quadrangles of South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach and Newport Beach.

Special-Status Plant Species

Special-status plant species include those listed as Endangered, Threatened, Rare or those species proposed for listing by the USFWS under the FESA, those listed by CDFW under the CESA, and the California Native Plant Society (CNPS).[9,10,11] The CNPS inventory is sanctioned by the CDFW and serves as the list of candidate plant species for state listing. CNPS's California Rare Plant Ranks (CRPR) 1B and 2 species are considered eligible for state listing as endangered or threatened.

A total of 42 special-status plant species were identified to have historically been recorded in the Los Alamitos and surrounding seven quadrangles based on searches of the California Natural

[9] Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (Title 50 Code of Federal Regulations [CFR] 17.12 [listed plants], Title 50 CFR 17.11 [listed animals] and includes notices in the Federal Register for proposed species).

[10] Species listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (Title 14 California Code of Regulations 670.5).

[11] Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 *et seq*.).

Diversity Database (CNDDB),[12] CNPS on-line inventory,[13] and USFWS online Information for Planning and Consultation (IPaC) (see Appendix D).[14] Six federal and/or State-listed plant species were identified from the database searches to have historical occurrences in the region, including Ventura Marsh milk-vetch (*Astragalus pycnostachyus* var*. lanosissimus*), salt marsh bird's beak (*Chloropyron maritimum* ssp. *maritimum*), San Diego button-celery (*Eryngium aristulatum* var. *parishii),* Gambel's water cress (*Nasturtium gambelii)*, California Orcutt grass (*Orcuttia californica),* and Lyon's pentachaeta (*Pentachaeta lyonii)*.

No records of any federally- or State-listed plant species were determined to coincide with the main campus or Beachside Village property during the literature review. However, three CNDDB records of plant species with a CRPR designation coincide with the main campus, including:

- A record from 1934 of southern tarplant (*Centromadia parryi* ssp. *australis*), a species with a CRPR of 1B.1 ("1B" denotes plants rare, threatened, or endangered in California and elsewhere; ".1" denotes a species *seriously* threatened in California);
- A record from 1896 of Horn's milk-vetch (*Astragalus hornii* var. *hornii*), a species with a CRPR of 1B.1; and
- A record from 1932 of San Bernardino aster (*Symphyotrichum defotiatum*), a species with a CRPR of 1B.2 (".2" denotes a species *fairly* threatened in California)

These occurrences are assumed extirpated due to development of the main campus since these species were recorded, which has resulted in the complete loss of on-site habitat suitable for these species.

No special-status plant species were observed during the field survey and when compared to the habitats that are preferred by regional special-status plants, habitat potentially suitable to support such species is absent from the main campus and Beachside Village property. As a result, special status- plant species are not expected to occur at either location. Additionally, no USFWS-designated critical habitat for any special-status plant species was identified to coincide with the main campus and Beachside Village property during a query of IPaC (USFWS 2022a).

Special-Status Wildlife Species

Special-status wildlife species include those listed by the USFWS under FESA and by CDFW under CESA. USFWS officially lists species as either threatened, endangered, or as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle) and the MBTA, and state protection under CEQA Section 15380(d).

A total of 54 special-status wildlife species was identified to have historically been recorded from the Los Alamitos and surrounding seven quadrangles based on searches of the CNDDB[15] and

[12] California Department of Fish and Wildlife, California Natural Diversity Database, Full report for Los Alamitos, South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach and Newport Beach quadrangles, available at: https://wildlife.ca.gov/Data/CNDDB, generated April 20, 2022.

[13] California Native Plant Society, Inventory of Rare and Endangered Plants, available at: http://www.rareplants.cnps.org/, accessed April 18, 2022.

[14] U.S. Fish and Wildlife Service, Information for Planning and Conservation, available at: https://ecos.fws.gov/ipac/, accessed April 18, 2022.

[15] California Department of Fish and Wildlife, California Natural Diversity Database, Full report for Los Alamitos, South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach and Newport Beach quadrangles, available at: https://wildlife.ca.gov/Data/CNDDB, generated April 20, 2022.

IPaC (see Appendix D).[16] Of the 54 identified species, 19 federally- and/or State-listed wildlife species or candidates for federal or State listing were identified from the database search to have historical occurrences in the region, including:

- San Diego fairy shrimp (*Branchinecta sandiegonensis*)
- monarch-California overwintering population (*Danaus plexippus* pop.1)
- quino checkerspot butterfly (*Euphydryas editha quino*)
- Riverside fairy shrimp (*Streptocephalus woottoni*)
- green turtle (*Chelonia mydas*)
- steelhead-southern California DPS (*Oncorhynchus mykiss irideus pop. 10*)
- tricolored blackbird (*Agelaius tricolor*)
- Swainson's hawk (*Buteo swainsoni*)
- western snowy plover (*Charadrius nivosus nivosus*)
- western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- southwestern willow flycatcher (*Empidonax traillii extimus*)
- California black rail (*Laterallus jamaicensis coturniculus*)
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)
- coastal California gnatcatcher (*Polioptila californica californica*)
- light-footed Ridgway's rail (*Rallus obsoletus levipes*)
- bank swallow (*Riparia riparia*)
- California least tern (*Sternula antillarum browni*)
- least Bell's vireo (*Vireo bellii pusillus*)
- Pacific pocket mouse (*Perognathus longimembris pacificus*)

California brown pelican (*Pelecanus occidentalis californicus*), which has been de-listed from both FESA and CESA but remains Fully Protected under California law, was also identified during the database search.

No records of any federally- or State-listed wildlife species were determined to coincide with the main campus or Beachside Village property during the literature review. However, one CNDDB record of unknown date of western tidal-flat beetle (*Habroscelimorpha gabbii*) (tracked by the CNDDB), which is a non-listed special-status wildlife species, coincides with the main campus. This occurrence is assumed extirpated due to development and ongoing disturbance across the main campus, which have resulted in the complete loss of on-site habitat suitable for this species. Additionally, no USFWS-designated critical habitat for any special-status wildlife species was identified to coincide with the main campus or Beachside Village property during a query of IPaC.[17]

Although foraging and nesting habitats suitable to support the special-status wildlife species

[16] U.S. Fish and Wildlife Service, Information for Planning and Conservation, available at: https://ecos.fws.gov/ipac/, accessed April 18, 2022.
[17] Ibid.

identified during the literature review are absent from the main campus and Beachside Village property, a few of the regional special-status bird species identified, such as western snowy plover, California least tern, California brown pelican, and osprey (*Pandion haliaetus*; CDFW WL species), are known to occur in coastal habitats two miles south of the main campus. Although unlikely, these species could fly over the main campus as migrating transients; however, they are not expected to nest or forage within the main campus or at the Beachside Village property due to a lack of suitable habitat.

Mature trees within the main campus provide potentially suitable nesting habitat for raptor species, including Cooper's hawk (*Accipter cooperii*; CDFW WL species), a species not identified during the database searches, but known to successfully nest throughout southern California urban environments (Cooper et al. 2020). Smaller trees within the Beachside Village property are less suitable for nesting Cooper's hawk and this species is not expected at this location. Special-status raptor species identified during the database searches (Appendix D), including Swainson's hawk, ferruginous hawk (*Buteo regalis*), white-tailed kite (*Elanus leucurus*), and burrowing owl (*Athene cunicularia*) are not expected to occur within the main campus or Beachside Village property due to a lack of suitable habitat for these species.

Special-status bird species have also been observed during previous surveys conducted for other projects in the area. During nesting bird surveys conducted in 2007 and 2009 in support of an Alamitos Bay Marina rehabilitation project, two miles south of the main campus, non-listed special-status bird species that were not identified during the database searches were observed.[18] The double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), black-crowned night-heron (*Nycticorax nycticorax*), long-billed curlew (*Numenius americanus*), Caspian tern (*Hydroprogne caspia*), Foster's tern (*Sterna forsteri*), and elegant tern (*Thalasseus elegans*) were observed foraging in Alamitos Bay. These species are colonial nesters along the coast and in proximity to bodies of water located further inland; however, only great blue heron was observed nesting in Alamitos Bay. Although tall mature eucalyptus, pine, and other tree species within the main campus provide potentially suitable nesting opportunities for colonial nesters, there was no evidence of large stick nests indicating the potential presence of a nesting colony within the main campus during the field survey. Suitable mature trees for colonial nesting are not present at the Beachside Village property. These species generally nest within close proximity to waters that provide suitable forage. However, the main campus occurs two miles from potentially suitable foraging waters in Alamitos Bay, and Bouton Creek is channelized and does not provide suitable foraging habitat. Therefore, these species are not expected to nest within the main campus or the Beachside Village property, and are only expected to occur in these locations as migrating or foraging transients.

Buildings and other structures and trees with cavities, crevices, exfoliating bark, or bark fissures, such as the eucalyptus trees occurring on the main campus, may provide potentially suitable roosting habitat for individual and small groups of bat species. Special-status bat species known from the region are not anticipated to occur within the main campus or Beachside Village property due to a lack of suitable habitat. However, common bat species may occur, which are protected from take and harassment as non-game mammals under CFGC Section 4150 and California Code of Regulations Title 14, Section 251.1.

Sensitive Natural Communities

Sensitive natural communities are those designated as rare in the region by the CNDDB and,

[18] LSA Associates, October 2009, *Draft Environmental Impact Report, Alamitos Bay Marina Rehabilitation Project – Biological Resources*.

more recently, listed as a sensitive natural vegetation community by CDFW;[19] that support special-status plant or wildlife species (protected habitat); or, as described in the following section, that receive regulatory protection (i.e., Section 404 of the CWA and/or Sections 1600 et seq. of the CFGC). Rare communities are given the highest inventory priority.[20, 21]

Natural Vegetation Communities

Five sensitive natural vegetation communities were identified during a search of the Los Alamitos and surrounding seven quadrangles in the CNDDB, including California Walnut Woodland, Southern Coastal Salt Marsh, Southern Cottonwood Willow Riparian Forest, Southern Dune Scrub, and Southern Foredunes (see Appendix D).[22] None of these communities occur within the main campus or Beachside Village property. Vegetation within the main campus and Beachside Village property consists primarily of non-native ornamental trees, shrubs, and groundcover common in urban environments.

Aquatic Communities

An online review of the USFWS's National Wetlands Inventory (NWI) Mapper was conducted to identify the presence of any aquatic communities present at the main campus or the Beachside Village property. The NWI Mapper identified two aquatic features potentially falling under federal and/or state jurisdiction. These include Bouton Creek, which runs northwest to southeast through the main campus, and a freshwater emergent wetland within the undeveloped land (see Figure 3.3-1).[23] Bouton Creek is an open concrete box channel along the northern perimeter of the undeveloped land, with chain-link fencing lining the channel. The concrete channel was constructed in 1960 by the Los Angeles Flood Control District. Remaining sections of Bouton Creek within the main campus are channelized underground through the West and Central Districts. Bouton Creek flows southeast from the main campus and discharges into Los Cerritos Channel, which flows into Alamitos Bay approximately 2 miles from the main campus. Tidal waters in Alamitos Bay are considered Essential Fish Habitat, a sensitive natural community, namely and fall under the jurisdiction of the National Oceanic and Atmospheric Association's NMFS.[24] However, the segment of Bouton Creek that crosses the main campus no longer represents a riverine environment or supports riparian habitat.

19 California Department of Fish and Game, June 2021, California Sensitive Natural Communities.
20 California Department of Fish and Game and Holland, R., 1986, *Preliminary Descriptions of the Terrestrial Natural Communities of California*, 156 pp.
21 California Department of Fish and Game, September 2010, *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base*.
22 California Department of Fish and Wildlife, California Natural Diversity Database, Full report for Los Alamitos, South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach and Newport Beach quadrangles, available at: https://wildlife.ca.gov/Data/CNDDB, generated April 20, 2022.
23 U.S. Fish and Wildlife Service, National Wetlands Inventory, available at: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, generated March 22, 2022.
24 National Oceanic and Atmospheric Association, Essential Fish Habitat Mapper, available at: https://www.habitat.noaa.gov/apps/efhmapper/, generated March 22, 2022.

Figure 3.3-1: NWI-Mapped Aquatic Features

No indications of the presence of a freshwater emergent wetland within the undeveloped land were observed during the field survey. Vegetation at this location is similar to the surrounding area in the undeveloped land area, consisting of non-native grasses and other non-native herbaceous vegetation that cover soil piles. Hydrophytic plant species are absent from the location and no indication that standing water is present at any time of the year was observed during the field survey. No other aquatic features were identified within the main campus and Beachside Village property during the field survey.

A review of historical aerial imagery and technical documents was conducted to determine the potential for a wetland to have existed in the undeveloped land at the location indicated in the NWI. Historical imagery provided by Environmental Data Resources[25] was reviewed and indicates:

- From 1928 to 1952, the area where the NWI-mapped wetland is indicated appears primarily as row crop agriculture, with no indication of a wetland present.
- By 1963, no indications of row cropping are visible. The area appears unused and other vegetation has overgrown the agricultural field.
- During the 1970s, the area continues to appear unused, as the CSULB campus starts to be developed towards the undeveloped land from the east. There is no distinct pattern of vegetation and the area generally appears disturbed, potentially being used as informal staging areas for campus construction.
- In 1981, ponds for the Japanese Garden are excavated and work on the garden appears in progress. The area coinciding with the NWI-mapped wetland appears partially disturbed by work at the Japanese Garden.
- By 1989, the Japanese Garden appears finished and the area appears to remain disturbed by work at the Japanese Garden during previous years.
- In 1994, a distinct vegetation/apparently elevated terrain pattern largely coinciding with the NWI-mapped wetland is visible and it is clear that maintenance mowing is conducted immediately around but not across the area.

A review of other sources (noted below) confirms that the entire area has undergone disturbance since roughly the 1940s from informal staging of equipment and materials and disposal of construction materials and spoils during construction activities in the vicinity of the undeveloped land. This includes:

- Use by the Navy for construction equipment storage and refuse disposal along the eastern perimeter of the undeveloped land and near the present-day Japanese Garden during construction of the Veteran's Administration property to the south in the early 1940s, prior to CSULB acquisition of the campus, during World War II.[26]
- Use of the northern portion of the undeveloped land as an active dump in 1978.[27]

[25] Environmental Data Resources, EDR Aerial Photo Decade Package for California State University, Long Beach 22-Acre Site, Includes aerials dated 1928, 1938, 1947, 1952, 1963, 1972, 1977, 1989, 1994, 2002, 2005, 2009, 2012, and 2016, prepared May 8, 2020.

[26] Scientific Resource Surveys, Inc., December 1980, *Archaeological Test Report on the Japanese Garden Arboretum/Museum Site Located on the Campus of the California State University, Long Beach (LA-00263)*, 45 pp.

[27] Scientific Resource Surveys, Inc., Novembr 1978, *Archaeological/Paleontological Survey Report on the Proposed Arboretum Japanese Garden Project Located at California State University, Long Beach*, 13 pp.

- Use of the undeveloped land by CSULB over the years for informal staging, construction spoils disposal, and green waste disposal, including (likely) during construction of the Pyramid, and the on-site parking lot (G2), located south of the Japanese Garden.[28]

Although a history of site disturbance is evident from this review of historical aerials and archaeological reports prepared for the Japanese Garden, other historical sources do note the presence of saturated areas associated with Bouton Creek in the northern portion of the undeveloped land.[29] Bryant Ranch, which occupied the northern portion of the site until it was sold to CSULB, was reportedly plagued by flooding that affected farming activities on-site.[30] During seasons of high rainfall, the area around the creek was reportedly a swamp that attracted a prolific population of ducks that were regularly hunted until the 1940s.[31]

If a wetland previously existed where indicated by the NWI-mapped, review of historic aerials and archival research indicates that it has not been a wetland for many decades. Site disturbance over time from agricultural land uses in the early decades of the 1900s, channelization of Bouton Creek, informal use of the undeveloped land by the Navy and then CSULB for staging, and construction of the Japanese Garden have obliterated any indication of wetlands on-site, if they ever existed.

The NWI indicates that wetlands in the Long Beach area were mapped in the mid-1970s by photo-interpretation, although it is not confirmed that this particular wetland was mapped and included in the NWI at that time. It seems likely that this feature was mapped and included in the NWI on the basis of the distinct spoils-related vegetation/terrain pattern visible in aerial photography in recent decades, which was avoided during regular mowing because of the uneven topography. It is apparent from the field survey, literature search, and university-provided information that spoils have long been placed in the area and avoided by mowing. The spoils may have been interpreted at the time of NWI mapping as a depression, when, in fact, they represent elevated spoils piles. Notwithstanding the NWI map and designation, no wetlands occur within the main campus and Beachside Village property.

Wildlife Movement Corridors

A wildlife movement corridor can be defined as a linear landscape feature of sufficient width and buffer to allow wildlife movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resource that encourages population growth and diversity. Habitat fragments are isolated patches of habitat separated by otherwise inhospitable areas, such as urban/suburban tracts, agricultural lands, or highways. Habitat fragments can isolate species populations by limiting movement, foraging, and breeding opportunities.

Two types of wildlife movement corridors seen in urban settings are regional corridors, defined as those linking two or more large areas of natural open space; and local corridors, defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development. Wildlife movement corridors are

[28] California State University, Long Beach, Grounds Department Staff, personal communication, March 30, 2021.
[29] Environmental Data Resources, EDR Aerial Photo Decade Package for California State University, Long Beach, 22-Acre Site, Includes aerials dated 1928, 1938, 1947, 1952, 1963, 1972, 1977, 1989, 1994, 2002, 2005, 2009, 2012, and 2016, Prepared May 8, 2020.
[30] Environmental Data Resources, EDR Aerial Photo Decade Package for California State University, Long Beach, 22-Acre Site, Includes aerials dated 1928, 1938, 1947, 1952, 1963, 1972, 1977, 1989, 1994, 2002, 2005, 2009, 2012, and 2016, Prepared May 8, 2020.
[31] Scientific Resource Surveys, Inc., December 1980, *Archaeological Test Report on the Japanese Garden Arboretum/Museum Site Located on the Campus of the California State University, Long Beach (LA-00263)*, 45 pp.

essential in geographically diverse settings, and especially in urban settings, for the sustainability of healthy and diverse animal communities. At a minimum, corridors promote colonization of habitat and genetic variability by connecting fragments of like habitat and help sustain individual species distributed in and among habitat fragments. They are also important features for dispersal, seasonal migration, foraging, and breeding.

The main campus and Beachside Village property are surrounded by developed residential and commercial properties and established roadways. These areas have limited value or benefit to wildlife movement in the region. Natural vegetation communities located in the Rancho Palos Verdes Natural Community Conservation Plan/Habitat Conservation Plan area approximately 12 miles west of the main campus serve as the nearest habitat that may provide opportunities for significant terrestrial wildlife movement. Golf courses approximately 0.5 miles southwest and 1.5 miles northeast of the main campus provide significant open space areas with mature trees. However, there are no vegetated corridors, perennial surface waters, drainages, or other corridors within or adjacent to the main campus or Beachside Village property that would facilitate wildlife movement to and from these green/open space areas, or other areas that may provide additional opportunities for wildlife cover, resting, foraging, and nesting. Although Bouton Creek transects the main campus, it is a concrete box channel, conveys only periodic discharges, and is flanked by chain link fencing, all of which reduce the potential for the channel to serve as a wildlife movement corridor. Ornamental trees and shrubs within the main campus and Beachside Village property and in the surrounding areas provide opportunities for cover, resting, foraging, and nesting for localized bird populations; however, they do not function as significant wildlife movement corridors.

3.3.3 Methodology

Prior to conducting the field survey, a preliminary review and records search was conducted to determine which special-status biological resources have the potential to occur on or within the general vicinity of the main campus and Beachside Village property. A general field survey was conducted to document existing biological conditions and determine the potential for special status- plant and wildlife species and sensitive habitats to occur within the main campus and Beachside Village property.

Literature Review

Literature reviews and records searches were conducted for special-status biological resources potentially occurring on or within the vicinity of the main campus and Beachside Village property. The main campus and Beachside Village property are located in the southwest portion of the U.S. Geological Survey's Los Alamitos, California 7.5-minute quadrangle. A search of this quadrangle and the surrounding seven quadrangles was conducted in the CDFW CNDDB[32] and the CNPS on-line Inventory of Rare and Endangered Plants of California.[33] Surrounding quadrangles queried include South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach, and Newport Beach. The USFWS IPaC[34] environmental review program and National Wetlands Inventory Mapper[35] were also queried for special-status species, sensitive natural communities, and

[32] California Department of Fish and Wildlife, California Natural Diversity Database, Full report for Los Alamitos, South Gate, Whittier, La Habra, Long Beach, Anaheim, Seal Beach and Newport Beach quadrangles, available at: https://wildlife.ca.gov/Data/CNDDB, generated April 20, 2022.

[33] California Native Plant Society, Inventory of Rare and Endangered Plants, available at: http://www.rareplants.cnps.org/, accessed April 18, 2022.

[34] U.S. Fish and Wildlife Service, Information for Planning and Conservation, available at https://ecos.fws.gov/ipac/, accessed April 18, 2022.

[35] U.S. Fish and Wildlife Service, National Wetlands Inventory, available at: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, generated March 22, 2022.

protected areas known in the vicinity of the campus. Results of the CNDDB, CNPS, and IPaC reviews are included as Appendix D.

Field Survey

A field survey was conducted on March 31, 2022, to document the extent and conditions of the biological resources occurring on campus and to assess the potential for special-status species and sensitive communities to occur within the main campus and Beachside Village property. During a review of aerial photography prior to the field survey, it was apparent no natural vegetation communities occur within the main campus and Beachside Village property and habitat potentially suitable for special-status plant and wildlife species is generally absent. As a result, during the field survey, biologists walked meandering transects through all the main campus districts and the Beachside Village property and focused on recording existing vegetation and wildlife and verifying no natural vegetation communities are present. Biologists also remained alert for the presence of any active or old bird nests and suitable bat roosting habitat to evaluate the potential for vegetation within the main campus and Beachside Village property to support bird nesting, bat roosting, or provide breeding or nursing habitat for any other wildlife species.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to biological resources are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Issues Not Evaluated Further

The Master Plan Update would not result in significant impacts related to the following CEQA Guidelines Appendix G checklist questions, as determined in the Initial Study (Appendix A), and therefore are not evaluated further in this Draft EIR.

- *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?*

  No riparian or sensitive natural community occurs within the boundaries of the CSULB campus.[36] Therefore, no impact to riparian or sensitive natural communities would occur with implementation of the proposed Master Plan Update.

[36] U.S. Fish and Wildlife Service, National Wetlands Inventory, available at: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, generated March 22, 2022.

- *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

  Since CSULB is an entity of the CSU, a state agency, and the main campus and Beachside Village are state-owned property, development on the main campus or the Beachside Village property are not subject to local policies or ordinances. Additionally, all development projects on the main campus and the Beachside Village property are required to implement standard temporary construction controls for natural resources protection, including, but not limited to, the protection of existing trees and other vegetation indicated to remain in place near construction activities and would comply with all applicable state and federal regulations governing biological resources, as discussed in Section 3.3.1, Regulatory Setting.[37] Therefore, no impact related to local policies or ordinances protecting biological resources would occur with implementation of the proposed Master Plan Update.

- *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

  No adopted Habitat Conservation or Natural Community Conservation Plans coincide with the boundaries of the main campus or the Beachside Village property.[38] Therefore, no impact related to such plans would occur with implementation of the proposed Master Plan Update.

3.3.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below is organized to separately address renovation projects, which involve renovation of existing facilities and additions to existing facilities; replacement projects, which involve demolition and replacement of existing facilities in the same physical location; and new projects, which involve construction of new facilities with a new use.

BIO-1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Program-Level Analysis for Master Plan Update

Construction

Special-Status Plant Species

Forty-two special-status plant species were identified in the study area during the literature review (Appendix D). Individual special-status plants typically could be damaged or destroyed from crushing or trampling during project activities, if present. No federal or State-listed plant species have been identified within the main campus or Beachside Village property and historical records

[37] The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9235, Construction Document Phase of Project Development, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-83nrq, accessed June 1, 2022.

[38] California Department of Fish and Wildlife, April 2019, Natural Community Conservation Plans.

of non-listed special-status plants (those with a CRPR designation) previously known from the main campus are assumed extirpated due to regular disturbances across the main campus since these species were recorded over ninety years ago. As a result, special-status plant species are not expected to occur on the main campus or Beachside Village property or surrounding areas. Thus, construction activities associated with the development of renovation, replacement, and new projects under the Master Plan Update would not have the potential to directly affect special status- plant species. No direct impacts on special-status plants would occur with implementation of the proposed Master Plan Update.

Suitable habitat for special-status plants is not present in the urban environment surrounding either the main campus or Beachside Village property and is not anticipated to occur. As a result, construction activities associated with the development of renovation, replacement, and new projects under the Master Plan Update would not have the potential to result in indirect impacts to special-status plants are not anticipated. Additionally, with implementation of CSULB temporary construction controls related to fugitive dust and erosion control, and further discussed in Sections 3.2, Air Quality, and 3.7, Hydrology and Water Quality, the potential for indirect impacts would be minimized. As such, no indirect impacts to special-status plants would occur during construction associated with the development of renovation, replacement, and new projects under the Master Plan Update.

Special-Status Wildlife Species

If present, individual special-status wildlife species could be crushed or trampled during construction activities such as vegetation removal and earth disturbances. Additionally, fugitive dust, noise, and vibration during construction activities could cause wildlife to move away or temporarily avoid the construction area.

Fifty-four special-status wildlife species were identified in the study area during the literature review (Appendix D). No federal or State-listed wildlife species have been identified within the main campus or Beachside Village property and potentially suitable habitat for such species is absent from the main campus and Beachside Village property and surrounding areas. Based on the literature search, a number of regional special-status bird species are known to occur in the study area and have been recorded in and around Alamitos Bay, two miles south of the main campus. Due to the previously disturbed nature of the main campus and Beachside Village property and isolation from natural vegetation communities and shoreline habitats that could provide suitable habitat for special-status wildlife species, it is unlikely that any of the special status- wildlife species identified during the literature review would occur within the main campus or Beachside Village property.

However, tall mature trees within the CSULB main campus provide potentially suitable nesting habitat for Cooper’s hawk (CDFW WL species) and other special-status bird species could incidentally occur across the main campus as migrating transients or while traveling between shoreline habitats to the south and west of the main campus. Mature trees potentially suitable for nesting by Cooper’s hawk may need to be removed during construction activities associated with the development of replacement and new projects under the Master Plan Update. In addition, mobility, circulation, and open space projects as well as renovation projects involving the construction of additions to existing buildings could require the removal of vegetation. Removal of mature trees during construction activities could result in significant impacts to special-status bird species. Implementation of the BMPs included in the CSULB Nesting Bird Guidance Document (see Appendix D) related to pre-construction surveys, avoidance buffers around active nests, and construction monitoring as needed, would be required for development under the Master Plan

Update, as outlined in Mitigation Measure BIO-A. With implementation of Mitigation Measure BIO-A, potential direct and indirect impacts to special status- bird species, such as Cooper's hawk, would be less than significant. Interior renovation projects would involve construction activities only in the interior of existing structures and would not include vegetation removal or demolition of structures; therefore, no impacts associated with interior renovation projects would occur.

Vegetation and structures suitable for nesting by common bird species protected under the MBTA and CFGC occur throughout the CSULB main campus and at the Beachside Village property, some of which would be removed or demolished during construction activities associated with the development of replacement and new projects under the Master Plan Update. Mobility, circulation, and open space projects and renovation projects involving the construction of additions to existing buildings could require the removal of vegetation. Removal of vegetation and structures during construction activities could result in significant impacts to bird species protected under the MBTA and CFGC. Mitigation Measure BIO-A would be required for development of mobility, circulation, and open space renovation projects, renovation projects involving building additions, replacement projects, and new projects developed under the Master Plan Update to reduce impacts to bird species. Mitigation Measure BIO-A would adopt the CSULB Nesting Bird Guidance Document, which defines governing regulations and recommended best practices to comply with state and federal regulations protecting nesting birds during construction and development projects on campus. Mitigation Measure BIO-A includes BMPs related to pre-construction surveys, avoidance buffers around active nests, and construction monitoring as needed. With implementation of Mitigation Measure BIO-A, potential direct and indirect impacts to species protected under the MBTA and CFGC would be less than significant. Interior renovation projects would not include vegetation removal or demolition of structures; therefore, no impacts to species protected under the MBTA and CFGC associated with interior renovation projects would occur.

As presented above, bat species are considered non-game mammals and are afforded protection from take and/or harassment under the CFGC and California Code of Regulations. Eucalyptus and palm trees and structures within the main campus and Beachside Village property provide suitable roosting habitat for individual or small groups of common bat species. No indication of bat roosting was detected, and special-status bat species are not anticipated to occur on the CSULB main campus or Beachside Village property. However, the removal of these tree species and structures during construction activities associated with renovation projects involving building additions, replacement projects, and new projects under the Master Plan Update could result in direct impacts to common bat species in the form of take of individual bats and their habitat. Indirect impacts to bat species could also occur primarily as a result of noise and increased human presence, both of which would occur with construction of renovation, replacement, and new projects developed under the Master Plan Update, resulting in disruptions to roosting bats, if present. As a result, direct or indirect impacts to bat species would be considered significant during construction of renovation, replacement, and new projects developed to that implement the Master Plan Update. With implementation of Mitigation Measure BIO-B, which requires pre-construction bat surveys, direct and indirect impacts to roosting bats would be reduced to less than significant. Interior renovation projects would not include vegetation removal or demolition of structures; therefore, no impacts to common bat species associated with interior renovation projects would occur.

Sensitive Natural Vegetation Communities

Sensitive natural vegetation communities include those that provide potentially suitable habitat for special-status plant and wildlife species. No natural communities preferred by such species

occur within the main campus or Beachside Village property. Existing vegetation includes primarily non-native ornamental species; the removal of such vegetation during construction activities would not affect sensitive natural communities. Therefore, no impact to sensitive natural vegetation communities would occur during construction of development projects associated with the Master Plan Update.

Operation

Following the completion of construction activities for individual renovation, replacement, and new projects developed under the Master Plan Update, CSULB would landscape temporarily disturbed areas in accordance with project landscape plans in compliance with the CSULB Landscape Master Plan. These plans would incorporate xeric landscaping practices utilizing native plant species to conserve water and reduce maintenance. New landscaping is not anticipated to provide or create suitable habitat for special status- species, but may provide more natural landscapes suitable to support common wildlife. Additionally, operations under the Master Plan Update and routine maintenance activities, such as removing or trimming trees or other vegetation to maintain ornamental landscapes, would occur within previously disturbed areas where special-status species are not anticipated to occur and that lack suitable habitats preferred by such species. Therefore, no direct or indirect impacts to special status- plant and wildlife species would occur during operation and routine maintenance under the Master Plan Update.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. Special-status plant species are not expected to occur on the CSULB main campus, Beachside Village property, or the surrounding areas. Thus, construction activities associated with the near- and mid-term development projects would not have the potential to directly or indirectly affect special status plant species. Additionally, implementation of CSULB temporary construction controls related to fugitive dust and erosion control, as discussed in Sections 3.2, Air Quality, and 3.7, Hydrology and Water Quality, would further minimize the potential for indirect impacts. Therefore, no impact to special-status plant species would occur during construction of the near- and mid-term projects under the Master Plan Update.

As previously discussed, tall mature trees within the CSULB main campus provide potentially suitable nesting habitat for Cooper's hawk and other special-status bird species. Additionally, eucalyptus and palm trees and structures within the main campus and Beachside Village property provide suitable roosting habitat for individual or small groups of common bat species. Construction activities associated with several of the near- and mid-term development projects would include vegetation trimming and removal, and demolition and replacement of some existing structures. The projects that would involve such activities include replacement projects (Engineering Replacement Building and New Parkside Housing Village), new projects (Faculty and Staff Housing, New 7th St. Community Outreach Facility), and renovation projects that include additions and/or renovations to the exterior of existing facilities (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Liberal Arts 5 Renovation, Student Health Services Addition, Corporation Yard Renovations, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, University Music Center Renovation/Addition, and Redefining the Campus Quad). Removal of

vegetation and structures during construction activities for these projects could result in significant impacts to special status bird species such as Cooper's hawk, bird species protected under the MBTA and CFGC, and/or roosting bats. With implementation of Mitigation Measures BIO-A and BIO-B, impacts to special-status bird species and roosting bats would be less than significant during construction of near- and mid-term renovation projects.

The following near- and mid-term projects would require only interior renovations: Lecture Hall 150-151 Renovation, Fine Arts 1/2 Renovation, Fine Arts 4 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Nursing Building Renovation, and Engineering Tech Renovation. These projects would not require vegetation removal or demolition of structures. Additionally, the Baseball Field Conversion to Multi-Use Field, Central Plant Decarbonization, and Relocated Archery Field would not require any vegetation trimming and removal or demolition of structures. Therefore, no impacts to Cooper's hawk, bird species protected under the MBTA and CFGC, or roosting bats would occur with construction of these near- and mid-term projects.

No natural vegetation communities occur within the CSULB main campus or the Beachside Village property. Therefore, no impact to sensitive natural communities would occur during construction of the proposed near- and mid-term development projects.

Operation

Following completion of construction activities for the near- and mid-term development projects, CSULB would landscape temporarily disturbed areas in accordance with landscape plans. These plans would incorporate xeric landscaping practices utilizing native plant species to conserve water and reduce maintenance. New landscaping is not anticipated to provide or create suitable habitat for special-status species, but may provide natural landscapes suitable to support common wildlife. Similar to the activities described under the program level analysis above, operation and routine maintenance of the near- and mid-term development projects would occur within previously disturbed areas where special-status species are not anticipated to occur and that lack suitable habitats preferred by such species. Therefore, no direct or indirect impacts to special-status plant and wildlife species would occur during operation and routine maintenance of the near- and mid-term development projects.

BIO-2 Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Program-Level Analysis for Master Plan Update

Construction

As stated in Section 3.3.2, Sensitive Natural Communities – Aquatic Communities, no aquatic features were identified within the Beachside Village property during the literature search or field survey. two aquatic features potentially falling under federal and/or state jurisdiction were mapped within the main campus per the USFWS NWI Mapper. These include channelized Bouton Creek, which runs northwest to southeast through the main campus, and a freshwater emergent wetland mapped within the undeveloped land. No field indicators reflecting the presence of a freshwater emergent wetland were identified during the field survey of the undeveloped land. Vegetation at this location is similar to that in the surrounding area in the undeveloped land area, consisting of non-native grasses and other non-native herbaceous vegetation that cover soil piles. Hydrophytic plant species are absent from the location and no indication that standing water is present at any time of the year was observed during the field survey. Based on a review of historical aerial

imagery and technical documents, the entire area has undergone disturbance since roughly the 1940s. If a wetland previously existed in the vicinity of the NWI-mapped wetland, the review of historic aerials and archival research indicates that it has not been a wetland for many decades. Site disturbances over time from agricultural land uses in the early decades of the 1900s, channelization of Bouton Creek, informal use of the undeveloped land by the Navy and then CSULB for staging, and construction of the Japanese Garden have obliterated any indication of wetlands on-site, if they ever existed. Moreover, a large portion of the undeveloped land has a restrictive covenant prohibiting development (Restricted Parcel) and is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management, including where the freshwater emergent wetland is mapped, thus avoiding impacts to any potential state or federally protected wetlands. Therefore, no impact would occur to the National Wetlands Inventory Mapper mapped freshwater emergent wetland with construction activities associated with projects developed under the Master Plan Update.

Potential impacts to Bouton Creek are analyzed in the Project-Level Analysis for Near- and Mid-Term Development Projects section below.

Operation

Operation of projects under the Master Plan Update and routine landscape maintenance activities and other maintenance and operational activities, such as mowing, above-ground tree trimming and tree maintenance, aerating turf fields, setting up bleachers on athletic fields, repairing existing irrigation lines, and pest and rodent control activities, would occur within previously disturbed areas where jurisdictional aquatic features are absent. Therefore, no impacts to state or federally protected wetlands would occur during operation and routine maintenance of renovation, replacement, and new projects developed under the Master Plan Update.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

As previously discussed, two aquatic features potentially falling under federal and/or state jurisdiction were identified within the main campus per the USFWS NWI Mapper, including channelized Bouton Creek, which runs northwest to southeast through the main campus, and a freshwater emergent wetland within the undeveloped land. Except for the proposed Pedestrian/Bike Lane Improvements, none of the other near- or mid-term projects would involve construction activities along or within the Bouton Creek channel. Additionally, as discussed in Chapter 2, Project Description, a restrictive covenant prohibits development on a significant portion of the undeveloped land, including where the freshwater emergent wetland is mapped.

The proposed Pedestrian/Bike Lane Improvements would be implemented to improve pedestrian, bicycle, and vehicular circulation on the main campus, including path widening along and enhanced crossings over Bouton Creek, and a path on the northside of Bouton Creek or a pre-fabricated bridge to help enhance connections between the bicycle facility and the Parkside Housing Village. In conjunction with this project, CSULB would coordinate with the City of Long Beach to clarify design and engineering constraints and other requirements. Activities near and/or over the Bouton Creek channel may result in potentially significant impacts to Bouton Creek and would require regulatory permits. In order to avoid/minimize direct impacts to Bouton Creek, Mitigation Measure BIO-C would be implemented, which would require a qualified regulatory specialist to review and evaluate project plans of proposed improvements over and adjacent to Bouton Creek. If the plans have the potential to result in impacts to the channel requiring permitting pursuant to the CWA, Porter-Cologne, and/or CFGC, CSULB in coordination with the City of Long Beach would consult with the U.S. Army Corps of Engineers, Los Angeles Regional

Water Quality Control Board, and CDFW regarding applicable permits for the improvements. Additionally, Bouton Creek eventually discharges into Alamitos Bay, approximately 2 miles from the CSULB main campus. Tidal waters occurring in Alamitos Bay are considered a sensitive natural community, in the form of Essential Fish Habitat, and fall under the jurisdiction of the National Oceanic and Atmospheric Association's NMFS. Depending on the extent of impacts to the Bouton Creek channel, consultation with NMFS regarding potential impacts to downstream coastal resources may be required simultaneously with coordination with other regulatory agencies. In addition, implementation of CSULB temporary construction controls related to fugitive dust and erosion control, as discussed in Sections 3.2, Air Quality, and 3.7, Hydrology and Water Quality, would minimize the potential for indirect impacts to Bouton Creek. With implementation of Mitigation Measure BIO-C and adherence to any required permit conditions, direct and indirect impacts to Bouton Creek and downstream coastal resources resulting from construction of the proposed Pedestrian/Bike Lane Improvements would be less than significant.

Operation

Similar to the activities described above at the program level analysis for the Master Plan Update, operation and routine maintenance, including landscaping and infrastructure maintenance activities, of the proposed near- and mid-term projects would occur within previously disturbed areas where jurisdictional aquatic features are absent. Therefore, no direct or indirect impacts to state or federally protected wetlands would occur during operation and routine maintenance of the proposed near- and mid-term projects.

Following completion of construction activities for the proposed Pedestrian/Bike Lane Improvements project, operation of the proposed improvements and routine street/trail maintenance would occur within areas that have either been covered under the regulatory permits obtained for the project, if required, or where it has been determined that no regulatory permits are required. No activities would occur in previously undisturbed portions of Bouton Creek. Additionally, operation and routine maintenance of the other proposed near- and mid-term projects would occur within previously disturbed areas where jurisdictional aquatic features are absent. Therefore, no impacts to state or federally protected wetlands would occur during operation and routine maintenance for projects implemented under the Master Plan Update.

BIO-3 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Program-Level Analysis for Master Plan Update

Construction

As discussed in Section 3.3.2, Environmental Setting, there are no vegetated corridors, perennial surface waters, drainages, or other corridors within the CSULB main campus or Beachside Village property that would facilitate wildlife movement to and from surrounding green/open space areas, or other areas that may provide opportunities for wildlife cover, resting, foraging, and nesting. Additionally, as a concrete box channel that is flanked by chain link fencing, Bouton Creek does not function as a wildlife movement corridor. Thus, construction activities associated with development of projects under the Master Plan Update would not interfere with a migratory wildlife corridor, movement by native or migratory wildlife species, or a native wildlife nursery site, and no impact would occur.

Operation

Operation of projects developed under the Master Plan Update and routine maintenance activities would occur within previously disturbed areas that are not part of a wildlife movement corridor or a wildlife nursery. As a result, no impacts to a migratory wildlife corridor, movement by native or migrating wildlife, or a native wildlife nursery would occur during operation and routine maintenance of projects developed under the Master Plan Update.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the near- and mid-term development projects would result in similar impacts to those described above at the program level analysis for the Master Plan Update above. As previously discussed, no wildlife movement corridors are present on the CSULB main campus or the Beachside Village property or in the surrounding area. Therefore, construction of the near- and mid-term development projects would not interfere with a migratory wildlife corridor, movement by native or migratory wildlife species, or a native wildlife nursery site, and no impact would occur.

Operation

Similar to the activities described above at the program level for the Master Plan Update above, operation and routine maintenance of the near- and mid-term development projects would occur within previously disturbed areas that are not considered a wildlife movement corridor. Therefore, no direct or indirect impacts to a migratory wildlife corridor, movement by native or migrating wildlife, or a native wildlife nursery would occur during operation and routine maintenance of the near- and mid-term development projects.

3.3.5 Mitigation Measures

The following mitigation measures would be required to reduce impacts to special-status bird species and roosting bats during construction of the development implemented under the Master Plan Update.

BIO-A Construction activities shall adhere to all applicable BMPs and recommendations outlined in the CSULB Nesting Bird Guidance Document[39] (refer to Appendix D of this EIR), which outlines measures to avoid take of bird species protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC) during construction activities and maintenance activities conducted by CSULB where tree removal or trimming is proposed. The guidance document provides information on the bird species that may nest in the area, protection under the MBTA and CFGC, and stipulates the following measures to avoiding impacts to nesting birds during the nesting season, generally January 15 through September 15 (as early as January 1 for some raptors):

1. A pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 days (72 hours) prior to the start of construction activities and/or tree removal to determine whether active nests are present within or directly adjacent to the construction zone.

    a) Following completion of the survey, a brief memo report shall be prepared to

[39] AECOM, August 5, 2020, *Nesting Bird Guidance Document for CSULB Projects*.

document the location of all nests found (if any), their status (i.e., eggs or hatchlings present), existing biological conditions of the project area, and the bird species detected during the survey. If an active nest is found, recommendations to avoid and minimize impacts to the nest, such as those presented below, shall be included as appropriate.

b) Surveys shall be conducted by a qualified biologist, defined as a biologist who has at least one year of professional experience conducting nest surveys under a supervising biologist or has formal education in the identification of regional bird species, and is familiar with the life history of regional bird species.

2. A minimum 150-foot no-work buffer shall be established around any active passerine bird nest and a minimum 300-foot no-work buffer shall be established around any active raptor nest. The qualified biologist shall monitor the nest on a weekly basis, and project activities within 150 feet of an active nest of any passerine bird or within 300 feet of an active nest of any raptor shall be postponed until the biologist determines that the nest is no longer active. However, these no-disturbance buffers may be adjusted (including increases or reductions to the buffer) by the qualified biologist on a case-by-case basis taking into consideration the location, type, duration and timing, and severity of work, distance of nest from project activities, surrounding vegetation and line-of-sight between the nest and work areas, and the species' site-specific level of habituation to the disturbance. If the qualified biologist determines nesting activities may fail as a result of project activities, the biologist shall immediately inform the construction manager and all project activities shall cease within the recommended no-disturbance buffer until the biologist determines the adults and young are no longer reliant on the nest site.

3. Avoidance buffers around active nests shall be delineated on-site with bright flagging for easy identification by project staff. The on-site construction supervisor and operator staff shall be notified of the nest and the buffer limits to ensure it is maintained.

4. When recommended nest avoidance buffers are not feasible and construction must occur near or within an established buffer, nests shall receive initial full-time monitoring to ensure that construction activities are not disturbing any nesting activities or active nests. If the biologist determines that the buffer is appropriate, work can continue with regular spot-checks to document the progress of the nest until it is determined that young are no longer dependent on the nest, the nest has been predated, or is deemed no longer active. With the exception of some raptor nests, inactive nests may be dismantled or otherwise destroyed to discourage future nesting in the same location.

BIO-B A pre-construction survey shall be conducted by a qualified bat biologist who has experience with bats/bat surveys to identify trees and/or structures that could provide day and/or night-roosting or maternity roosting sites for bats within 14 days of the start of construction for projects that include tree removal or building demolition.

1. If day-time roosting bats or sign of such bats are detected: a qualified bat biologist should be present to monitor any tree removal and/or building demolition activities and develop project-specific measures to minimize impacts to day-roosting bats. This should include the designation of no-disturbance buffers around day-roosting bats based upon the particular bat species found and/or the phased removal of

buildings and trees to allow day-roosting bats to relocate on their own volition.

2. If an active maternity roost is identified, no work activities should occur within 100 feet of or directly under or adjacent to the maternity roost during the breeding season when young are present but are not yet ready to fly (generally April through August).

BIO-C For projects occurring within or adjacent to Bouton Creek, such as the Pedestrian/Bike Lane Improvements project, CSULB shall engage a qualified regulatory specialist to review and evaluate project plans of proposed road improvements over and adjacent to Bouton Creek. If the plans have the potential to result in impacts to the channel requiring permitting pursuant to the Clean Water Act, Porter-Cologne, and/or CFGC, CSULB in coordination with the City of Long Beach shall consult with the U.S. Army Corps of Engineers, Los Angeles Regional Water Quality Control Board, and California Department of Fish and Wildlife regarding applicable permits for the improvements. Depending on the extent of impacts that may occur to the Bouton Creek channel, consultation with the National Marine Fisheries Service regarding potential impacts to downstream coastal resources may be required and should occur simultaneously in coordination with other regulatory agencies. Any required permit conditions shall be implemented to avoid or minimize impacts to Bouton Creek.

3.3.6 Level of Significance After Mitigation

Implementation of Mitigation Measures BIO-A and BIO-B would ensure that impacts to special status bird species and roosting bats would be less than significant during construction activities. Implementation of Mitigation Measure BIO-C would ensure that impacts to Bouton Creek during construction activities would be less than significant.

3.3.7 Cumulative Impacts

Significant impacts to biological resources resulting from the implementation of the Master Plan Update are not anticipated. Impacts to special-status plant and wildlife species, sensitive vegetation communities, and wildlife movement corridors would not occur, and potential significant impacts to special-status bird species protected under the MBTA and CFGC and bat species protected under the CFGC and California Code of Regulations would be minimized through the implementation of Mitigation Measures BIO-A and BIO-B. Potential significant impacts to Bouton Creek related to proposed pedestrian/bike lane improvements would be minimized through implementation of Mitigation Measure BIO-C, if required, resulting in less than significant impacts to state or federally protected wetlands. As a result, implementation of the Master Plan Update, taking into account related projects, would not contribute to cumulatively significant impacts.

3.4 CULTURAL RESOURCES

This section evaluates the potential impacts related to cultural resources, including built historical resources and archaeological resources, that would result from implementation of the Master Plan Update. Specifically, this section contains a summary of the federal, state, and local regulations related to cultural resources; a description of the existing setting as it pertains to built historical resources and archaeological resources on campus; and an analysis of the potential impacts related to cultural resources associated with implementation of the Master Plan Update as well as identification of mitigation measures for those impacts determined to be significant. The analysis in this section is based, in part, on the information contained in the Historical Resources Technical Report and the Confidential Archaeological Resources Technical Report included as Appendix E and Confidential Appendix F, respectively.

No comments related to cultural resources were received in response to the NOP. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.4.1 Regulatory Setting

Cultural resources in California are protected by a number of federal, state, and local regulations, statutes, and ordinances. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. State and federal laws use different terms for cultural resources. California state law discusses significant cultural resources as "historical resources," whereas federal law uses the terms "historic properties" and "historic resources." In all instances where the term "resource" or "resources" is used, it is intended to convey the sense of both state and federal law.

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) of 1966 established the National Register of Historic Places (National Register) as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2).[1] The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered "historic property" under Section 106 of the NHPA.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

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

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

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a

[1] Code of Federal Regulations, Title 36, Part 60.2.

significant and distinguishable entity whose components may lack individual distinction; or

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

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is best described as a resource's "authenticity" as expressed through its physical features and extant characteristics. Generally, if a resource is recognizable as such in its present state, it is said to retain integrity, but if it has been extensively altered then it does not. Whether a resource retains sufficient integrity for listing is determined by evaluating the seven aspects of integrity defined by the National Park Service:

- Location (the place where the historic property was constructed or the place where the historic event occurred);
- Setting (the physical environment of a historic property);
- Design (the combination of elements that create the form, plan, space, structure, and style of a property);
- Materials (the physical elements that were combined or deposited during a particular period of time and in a particular manner or configuration to form a historic property);
- Workmanship (the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory);
- Feeling (a property's expression of the aesthetic or historic sense of a particular period of time);
- Association (the direct link between an important historic event/person and a historic property).

Integrity is evaluated by weighing all seven of these aspects together and is ultimately a "yes or no" determination – that is, a resource either retains sufficient integrity, or it does not.[2] Some aspects of integrity may be weighed more heavily than others depending on the type of resource being evaluated and the reason(s) for the resource's significance. Since integrity depends on a resource's placement within a historic context, integrity can be assessed only after it has been concluded that the resource is in fact significant.

State

California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5

Section 21084.1 of the California Public Resources Code (PRC) states that for purposes of CEQA, "a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment."[3]

This necessitates a two-part inquiry: first, it must be determined whether a given project involves a historical resource, and if it does, a determination must be made as to whether the project may result in a "substantial adverse change in the significance" of that historical resource.

To answer these questions, guidance relating to historical resources has been formally codified as Section 15064.5 of the CEQA Guidelines, which define a "historical resource" as any one of

[2] National Park Service, Revised 1995, *National Register Bulletin 15, Section VIII: How to Evaluate the Integrity of a Property.*

[3] California Code of Regulations, Title 14, Chapter 3, Section 15064.5.

the following, for purposes of CEQA compliance:[4]

- A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR.
- A resource included in a local register of historical resources, or identified as significant in a qualified historical resource survey, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrate that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR.

Once it has been determined that a historical resource is present, it must then be determined whether the project may result in a "substantial adverse change" to that resource. Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource will be materially impaired."[5] The significance of a historical resource is materially impaired when a project:

a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resources that convey its historical significance and that justify its inclusion in, or eligibility for, the CRHR; or

b. 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 of 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 established by a preponderance of evidence that the resource is not historically or culturally significant; or

c. 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 CRHR as determined by a lead agency for the purposes of CEQA.

CEQA requires a lead agency to identify measures to mitigate significant adverse impacts to historical resources. The CEQA Guidelines state that "the lead agency shall ensure that any adopted measures to mitigate or avoid significant adverse changes are fully enforceable through permit conditions, agreements, or other measures" deemed prudent and feasible."[6]

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California

4 California Code of Regulations, Title 14, Chapter 3, Section 15064.5.
5 Ibid.
6 Ibid.

Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

1. To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:
2. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
3. Is associated with the lives of persons important in our past;
4. 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
5. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097

California Health and Safety Code Section 7050.5, and PRC Sections 5097.94 and 5097.98 outline procedures to be followed in the event human remains are discovered during the course

of California projects. If human remains are encountered, all work must stop at that location and the County Coroner must be immediately notified and advised of the finding. The County Coroner would investigate "the manner and cause of any death" and make recommendations concerning treatment of the human remains. The County Coroner must make their determination within two working days of being notified. If the human remains are determined to be Native American, the County Coroner shall contact the California Native American Heritage Commission. The Commission would in turn "…immediately notify those persons it believes to be most likely descended from the deceased Native American." The descendants would then inspect the site and make recommendations for the disposition of the discovered human remains. This recommendation from the most likely descendants may include the scientific analysis of the remains and associated items.

California Public Resources Code Sections 5097.5 and 5097.7

California PRC Section 5097.5 as amended, and PRC Section 5097.7, strengthens existing State law regarding criminal penalties and restitution for crimes of archaeological site vandalism, theft of archaeological materials or artifacts in curation facilities, and damages to historic buildings and other cultural properties on State and local government lands. The amendment and new section closely follow federal law, specifically the Archaeological Resources Protection Act of 1979.

California State University, Settlement Agreement, Declaration of Restrictive Covenant, and Conservation Easement – Puvungna[7]

On September 16, 2021, the CSU Board of Trustees entered into a Settlement Agreement to resolve litigation filed by the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes, a Tribal Nation ("Tribe"), and California Cultural Resources Preservation Alliance, Inc. ("CCRPA"). The Settlement Agreement required the CSU to record a Declaration of Restrictive Covenant ("Declaration") over the northwestern portion of the CSULB campus, of which a portion is the tribal and historic site commonly known as "Puvungna" (Restricted Parcel). The Declaration prohibits certain uses on the Restricted Parcel, including the construction or installation of new structures or improvements, to protect tribal and historic resources. The Declaration also permits certain uses on the Restricted Parcel, including passive use by California Native American tribes and affiliated groups, maintenance, and emergency actions. The Declaration may be terminated if and when the CSU establishes a Conservation Easement over the Restricted Parcel.

The Settlement Agreement further requires the CSU to make a good faith effort to establish a perpetual Conservation Easement over the Restricted Parcel within two years. The Conservation Easement will be granted to a qualified grantee and may be managed by a qualified easement manager. The Conservation Easement will be subject to a long-term maintenance and management plan to be prepared in the future. The prohibited and permitted uses will be the same as under the Declaration.

3.4.2 Environmental Setting

The CSULB main campus and Beachside Village property are located in coastal Los Angeles County in the City of Long Beach, north of the Port of Long Beach. The CSULB main campus encompasses 322 acres and Beachside Village is a CSU-owned student housing complex that encompasses approximately 5 acres. The majority of the university's uses occur on the CSULB main campus, which comprises 84 buildings housing eight colleges and totaling approximately

[7] Variants of the name include Pubuna, Pubugna, Puvu, Puvungna, Puvunga, Puvu-ngna, and Povuu'ngna. The ethnographic village is referred to as "Puvungna" while the archaeological district NRHP-listing is referred to as "Puvunga."

5.8 million gross square feet of buildings. The CSULB main campus hosts an assemblage of mid-century modern architecture and site and landscape features.

Built Historical Resources

Summary of University History and Development

CSULB originated within a context of steady institutional expansion in California. In 1950, college officials settled on a 320-acre swath of land in the eastern section of Long Beach, and in October 1950, noted Long Beach architect Hugh Gibbs was selected to develop the institution's first-ever master plan. The Gibbs master plan, approved in 1953, laid the groundwork for the physical form of the CSULB campus as it exists today. Construction of the campus's first permanent buildings began shortly thereafter, with several completed in 1955; others were subsequently added as resources permitted.

In 1962 the noted local architectural firm of Killingsworth-Brady-Smith and Associates was selected to serve as consulting campus architect – a role that the firm, and specifically Killingsworth, continuously filled until he eventually retired in 2001. Killingsworth's lengthy tenure provided the Long Beach campus with a cohesive aesthetic that is not found at many other campuses within the CSU system. A new master plan developed by Killingsworth was adopted in January 1963. The symbiotic relationship between buildings, landscapes, and site features was a resonant theme in Killingsworth's master plan. Additionally, Killingworth's master plan addressed student housing, and specifically called for the construction of a new dormitory complex to the northwest of the academic core, next to two existing dormitory buildings (Los Cerritos and Los Alamitos halls, both constructed 1959) and where Hillside College is located today. This lent impetus to the eventual development of two residential colleges on campus: Hillside College (1969) and Parkside College (1985), as well as the International House (1987). By the 1970s, the campus continued to witness additional growth and development during declining enrollment and economic recession, but at a somewhat slower place and in a less cohesive manner than before. The campus continued to expand in the 1980s and 1990s, and it was during this time that several of its iconic buildings and sites were completed, including the Earl Burns Miller Japanese Garden and Walter Pyramid. In the 2000s and 2010s, CSULB experienced steady increases in student enrollment. With this growth came the construction of several new signature buildings for the campus.

Most of the buildings at CSULB ascribe to a common institutional derivative of the Mid-Century Modern style, which was applied to new buildings across the campus during its formative years. "Mid-Century Modern" is a broad term that is used to describe the various derivatives of Modern architecture that flourished in the post-World War II period. Southern California was a locus of innovation with respect to Modernism. The style was favored by large-scale institutional properties like colleges and universities, which were tasked with developing large, dense, multimodal campuses to accommodate the droves of incoming students seeking higher education in the postwar period. Mid-Century Modernism's emphasis on rational, economic buildings that could be produced *en masse* was well suited to these institutions, which needed to expand quickly and within the confines of public funding sources and finite capital construction budgets. Generally, the Mid-Century Modern style, expressed in the context of public institutional architecture, exhibits the following character-defining features:

- Simple, geometric building forms
- Concrete, steel, and glass construction (larger buildings); wood construction (smaller buildings)
- Direct expression of the structural system

- Flat roofs, with or without eaves
- Flush-mounted metal frame windows (often expressed as curtain walls in larger buildings)
- Metal window screens (*brise soleil*), often comprising geometric patterns or motifs
- Minimal surface ornament and decorative details
- Integrated landscapes, often in the form of courtyards or plazas

By the late 1960s, some architects designed buildings that were still firmly rooted in the Mid-Century Modern movement but also exhibited a derivative of Mid-Century Modern architecture is known as the New Formalist style. Character-defining features of New Formalism include the following:

- Strict symmetry and formality
- Buildings are often monumental in size and appearance
- Flat roof, often with a heavy, projecting overhang, emulating a simplified cornice
- Smooth wall surfaces
- Colonnades comprising full-height columnar supports
- Incorporation of arches and rounded openings
- Minimal surface ornament and decorative details
- Integrated landscapes, often in the form of interior courtyards or plazas

Refer to Historical Resources Technical Report (Appendix E) for the detailed overview of the university's history and development.

Archaeological Resources

The following discussion is prepared based on archaeological reconstructions and published ethnographic and historical research; no original ethnographic research or oral historic research was conducted.

Cultural Setting

As represented in the archaeological record, California, like the rest of North America, was occupied by the terminal Pleistocene and earliest Holocene. Key indicators of early material cultures, known as Paleoindian cultures, are fluted points, which have been reported at a number of locations in Southern California. By the Millingstone Period or Millingstone Cultural Horizon, permanent settlements were established in Southern California. These settlements were established along the coast and near estuaries, lagoons, rivers, and marshes, which provided rich natural resources including numerous varieties of seeds, shellfish, fish, birds, and small mammals. The Millingstone Period takes its name from the millingstones (metates) and hand stones (manos) which were used to process plant materials and which first appear during this time.

The way of life characterized by the Millingstone artifact assemblages persisted for millennia. But by 3,500 B.P., increased population size led to intensified exploitation of the natural environment and greater social complexity. The period during which these changes are observed in the archaeological record is known as the Intermediate Horizon. Technological innovations first seen in the Intermediate Horizon include the dart and atlatl (spear-thrower), the mortar and pestle to process acorns, and use of the circular shell fishhook on the coast. After about 5,000 B.P., mortars and pestles to exploit acorns appear in the archaeological record. The earliest radiocarbon dates and diagnostic artifacts so far recorded at the CSULB main campus date to the Intermediate

Horizon.

The majority of the archaeological sites documented at the CSULB main campus date to what is generally called the Late Prehistoric Period, which spans from approximately 1,500 years B.P. until the Spanish mission period. The Late Prehistoric Period is notable for the florescence of the Native American groups encountered by the Spanish.

Historic Overview

The following discussion provides a brief overview of the history of the City of Long Beach and the development of CSULB and the vicinity. Refer to the Confidential Archaeological Resources Technical Report (Confidential Appendix F) for the detailed historic overview of the development of southern California.

The City of Long Beach emerged out of the 1880s land boom after the Southern Pacific Railroad connecting San Francisco to Los Angeles was completed. The first subdivision within what became Long Beach was conducted in 1882, and the American Colony was founded. In 1887, the Long Beach Land and Water Company was organized, and the official map of Long Beach was filed on July 30, 1887. Over the course of the last quarter of the nineteenth century and into the twentieth century, the City of Long Beach followed much the same course of rapid development as the rest of Los Angeles County.

In 1919, the United States Navy divided its forces into Atlantic and Pacific Fleets. Long Beach was made home port of the Pacific Fleet, and over the next few decades infrastructure was constructed to support the Navy's mission. In 1940, as war raged in Asia, the Navy began major infrastructure improvements in Long Beach that continued after the United States entered World War II in December 1941. In 1943, with the war at its height, the Navy constructed a large new Long Beach Naval Hospital immediately west and south of today's CSULB main campus. By 1949, the Long Beach Naval Hospital consisted of 88 buildings and could house 1,791 patients. In 1950, the Navy vacated the hospital which was transferred to the Veterans Affairs, which continued to renovate, build, and expand upon the premises, which is today the Veterans Affairs Long Beach Healthcare System. Initial construction, management, and subsequent improvements to the hospital (including building demolitions and replacements) required massive amounts of earth-moving, and some soil from that activity is believed to have been transported and used as fill on what is today the CSULB main campus.

In 1949, Governor Earl Warren signed Assembly Bill 8 establishing Los Angeles-Orange County State College, and today the college has attained university status and is known as California State University, Long Beach. During the 1950s through the 1970s, most of the remaining undeveloped land on and surrounding the campus was developed. Mostly in the 1960s, housing tracts were established on privately held land adjacent to CSULB. Both the Veterans Affairs Long Beach Healthcare System and CSULB developed their land holdings and have active building programs.

Ethnographic Overview

The CSULB main campus is located in a region traditionally important to multiple Native American groups. In particular, these include the Gabrielino (including the Tongva and Kizh), the Juaneño--Acjachemen, and the Luiseño. The terms Tongva, Kizh, and Acjachemen are preferred by many descendant groups over the Spanish words that have historically been used to describe them, while the Luiseño are typically identified by their band (including La Jolla, Pala, Pauma, Pechanga, Rincon, Soboba, and San Luis Rey). Refer to Section 3.12, Tribal Cultural Resources,

for a detailed overview of tribal cultural resources.

The following description is a brief summary of the ethnographic information regarding the CSULB main campus. The Long Beach area was heavily settled by the Gabrielino due to its estuaries and protected bays and inlets and as evidenced by ethnography about the area, mission registers and archaeological sites. There were a number of villages and hamlets settled in the Long Beach area.

Puvungna was a Gabrielino Rancheria located near Alamitos Bay, and ethnographic accounts and baptism records from the San Gabriel Mission indicated that at the time of Spanish contact it was a large and thriving community. During the rancho era, the village of Puvungna was located on Rancho Los Alamitos, originally part of a much larger land grant by Manuel Nieto that encompassed the former village. Nieto established the land, which was over 200,000 acres, as Rancho Los Nieto and began building adobes on Bixby Hill in approximately 1804. In 1833, Rancho Los Alamitos was established at 28,612 acres, and encompassed the western half of Long Beach, southern half of Signal Hill, Los Alamitos, Seal Beach, Cypress, Garden Grove, Stanton, and Westminster.

Native American informants pointed out a shell midden beside the spring near the old Rancho Los Alamitos ranch house and local historians also regarded this as the site of Puvungna. The site was later recorded as P-19-000306 (also known as CA-LAN-306), and until the 1970s, this was generally regarded as the site of Puvungna, even appearing labeled as such in historical maps. Archaeologists in the 1970s began to suggest that other sites in the Signal Hill region could be associated with Puvungna.

The CSULB main campus is located on what was Rancho Los Nietos, the largest and one of the earliest Spanish land grants in California. In 1804, the rancho was divided into five separate ranchos. The land within the CSULB main campus became a part of Rancho Los Alamitos. In about 1806, an adobe house was built on a hilltop near a spring approximately 0.9 miles southeast of the CSULB main campus. This house, enlarged several times, still stands.

Over the course of the 1970s, CSULB and the surrounding community developed most of the remaining undeveloped land on and surrounding the campus. The Rancho Los Alamitos Adobe was eventually completely surrounded by a gated community. While visitors can still visit site P-19-00306 next to the adobe, they can only do so during specific times and under conditions set by Rancho Los Alamitos and the surrounding gated community.

In 1974, the Keeper of the National Register found that three sites (P-19-000234, -235, and -306) qualified for the Register as contributors to the Puvunga Indian Village Sites Archaeological District as three undeveloped archaeological sites in Long Beach that are representative of the ancient village of Puvungna. The village of Puvungna and its sphere of influence, which would have included resource procurement areas and likely also dependent hamlets and even dependent villages, is generally considered to have occupied the region surrounding the historic Rancho Los Alamitos Ranch House and the CSULB main campus. Site P-19-00035, encompassing approximately 22.4 acres within the northwest portion of the CSULB main campus, west of Determination Drive, is considered by some tribes as the only part of Puvungna that remains undeveloped. On May 22, 1982, the NRHP listed an increased boundary for P-19-000235.

A restrictive covenant prohibiting development was established in 2021 on a large portion of the undeveloped land near the northwest border of the CSULB main campus, and it is held in reserve

for the future establishment of a permanent conservation easement for its perpetual protection and management.

3.4.3 Methodology

As discussed above under 3.1.2 Regulatory Setting, California PRC Section 21084.1 and CEQA Guidelines Section 15064.5 serve as the basis for this analysis, which necessitates a two-part inquiry: first, it must be determined whether a given project involves a historical resource, and if it does, a determination must be made as to whether the project may result in a "substantial adverse change in the significance" of that historical resource.

Built Historical Resources

The Historical Resources Technical Report (Appendix E) prepared for the Master Plan Update included research, documentation, and field visits. Site visits to CSULB main campus were conducted in August 2019, March 2020, and August 2022, to document and photograph buildings and other site features. Previous studies and existing documentation were reviewed related to historical resources on the CSULB campus, including the 2019 Historic Resource Survey. Additionally, historical resource data included in the State of California's Built Environment Resource Directory (BERD)[8] was reviewed. Supplemental research was conducted on the history and development of the CSULB campus.

Research conducted as part of this report was informed by various primary and secondary source materials obtained from the following sources: the CSULB Library, including its Special Collections and University Archives; the Long Beach Public Library; the Los Angeles Public Library; the archives of the *Press-Telegram*, the *Los Angeles Times*, and other periodicals; archival building records and construction documents provided by the CSULB Beach Building Services Department; technical assistance bulletins and materials published by the National Park Service and the California Office of Historic Preservation; various online repositories; and ARG's in-house collection of architectural books and reference materials.

Based on the Historical Resources Technical Report, no built historical resources on the CSULB campus are listed in the National Register or California Register, or on a local historic resource register. A Historic Resource Survey conducted in 2019 identified and inventoried built historical resources on the CSULB campus that were constructed through 1980, which identified four individual buildings and two historic districts. Resources that were identified in the survey as appearing eligible for federal (NRHP) and/or state (CRHR) listing are treated as "historical resources" as per Section 15064.5 of the CEQA Guidelines.

Table 3.4-1 shows the four buildings identified as individually eligible for listing in the National Register and California Register including the McIntosh Humanities Building, the Psychology Building, the Theatre Arts Building, and the University Student Union (USU). The four buildings were found to be individually eligible for listing in the National Register and California Register under Criterion C/3, in the area of Architecture and Design. For a description of the character-defining features of the buildings, refer to the Historical Resources Technical Report (Appendix E).

[8] The Built Environment Resources Directory (BERD) database provides information about non-archaeological resources in the California Office of Historic Preservation's inventory.

Table 3.4-1: Individually Eligible Resources Documented on the CSULB Main Campus

Resource Name	Year Built	Architect	Eligible for NHRP	Eligible for CRHR
McIntosh Humanities Building	1967	California State Division of Architecture	X	X
Psychology Building	1970	Gibbs and Gibbs	X	X
Theatre Arts Building	1972	Frank Homolka and Associates	X	X
University Student Union	1972	Killingsworth-Brady and Associates	X	X

Two historic districts were identified as eligible for listing in the National Register and California Register: the Hillside College Historic District and the Upper Campus Historic District. However, as of 2020, the Hillside College Historic District is no longer an eligible resource and is no longer considered to be a historical resource for purposes of CEQA because of diminished integrity of the district resulting from development of the Housing Expansion Phase 1 - Housing Administration and Commons Building Project.

One eligible historic district, the Upper Campus Historic District, remains on campus. The Upper Campus Historic District currently comprises 27 buildings including 24 contributors (89 percent the district) and three non-contributors (11 percent of the district), as well as various site and landscape features. Tables 3.4-2 and 3.4-3 show a summary of the district and its contributing/non-contributing buildings. The Upper Campus Historic District was found to be eligible for listing in the National Register and California Register under Criteria A/1 and C/3 in the areas of Institutional Development, Campus Planning, and Architecture and Design. For a statement of significance for the Upper Campus Historic District, refer to the Historical Resources Technical Report (Appendix E).

Table 3.4-2: Historic District Documented Within the CSULB Main Campus

District Name	Period of Significance	No. of Contributing Resources	Eligible for NHRP	Eligible for CRHR
Upper Campus Historic District	1953-1972	27 buildings (24 contributors); site and landscape features	X	X

Table 3.4-3: Contributors and Non-Contributors to the Upper Campus Historic District Within the CSULB Main Campus

Building Name	Year Built	Architect	Status
Academic Services (AS)	1955	Hugh Gibbs	Contributor
Bookstore (BKS)	1955	Hugh Gibbs	Contributor
College of Liberal Arts Administration (CLA)	1954	Hugh Gibbs	Contributor
Education 2 (ED2)	1961	California State Division of Architecture	Contributor
Ellis Education Building (EED)	1957	California State Division of Architecture	Contributor

Table 3.4-3: Contributors and Non-Contributors to the Upper Campus Historic District Within the CSULB Main Campus

Building Name	Year Built	Architect	Status
Faculty Office 2 (FO2)	1957	California State Division of Architecture	Contributor
Faculty Office 3 (FO3)	1959	California State Division of Architecture	Contributor
Fine Arts 1 (FA1)	1954	Hugh Gibbs	Contributor
Fine Arts 2 (FA2)	1954	Hugh Gibbs	Contributor
Fine Arts 3 (FA3)	1958	California State Division of Architecture	Contributor
Fine Arts 4 (FA4)	1962	California State Division of Architecture	Contributor
Language Arts Building (LAB)	1967	California State Division of Architecture	Contributor
Lecture Hall 150-151 (LH)	1955	California State Division of Architecture	Contributor
Liberal Arts 1 (LA1)	1962	California State Division of Architecture	Contributor
Liberal Arts 2 (LA2)	1954	Hugh Gibbs	Non-contributor
Liberal Arts 3 (LA3)	1954	Hugh Gibbs	Non-contributor
Liberal Arts 4 (LA4)	1955	Hugh Gibbs	Non-contributor
Liberal Arts 5 (LA5)	1962	California State Division of Architecture	Contributor
Library (LIB)	1971	Joint Venture Architects	Contributor
*McIntosh Humanities Building (MHB)	1967	California State Division of Architecture	Contributor
Multi-Media Center (MMC)	1971	Joint Venture Architects	Contributor
*Psychology Building (PSY)	1970	Gibbs and Gibbs	Contributor
*Theatre Arts (TA)	1972	Frank Homolka and Associates	Contributor
University Dining Plaza (UDP)	1957	California State Division of Architecture	Contributor
*University Student Union (USU)	1972	Killingsworth-Brady and Associates	Contributor
University Telecommunications Center (UTC)	1958	California State Division of Architecture	Contributor
University Theatre (UT)	1955	Hugh Gibbs	Contributor

Archaeological Resources

The Confidential Archaeological Resources Technical Report (Confidential Appendix F) prepared for the Master Plan Update included archival research, and review of monitoring reports, published reports, books, and articles. The archaeological resources records search of the CSULB main campus and Beachside Village property was conducted at the South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton on March 18, 2022. Results of the records search indicated that 72 previous cultural resource studies have been conducted within the CSULB main campus or a 0.5-mile of the CSULB main campus between 1972 and 2017 and are on file at the SCCIC. Of these 72 studies, 39 are located entirely or partially within the boundary of the CSULB main campus. The records search did not identify any studies within the Beachside Village property or a 0.5 mile of the Beachside Village property.

The archival research was supplemented with research of monitoring reports archived on campus, as well as published reports, books, and articles.

A total of 28 resources have been documented on the CSULB main campus. Of those 28 resources, 16 have been analyzed and found not to be potentially significant resources and three have been subsumed within other large archaeological sites. The remaining nine resources are considered historical resources for the purposes of CEQA. Table 3.4-4 shows the listed and potentially eligible archaeological resources documented within the CSULB main campus.

Table 3.4-4: Listed and Potentially Eligible Archaeological Resources Documented Within the CSULB Main Campus

Primary Number (P-19-)	Permanent Trinomial (CA-LAN-)	District	CRHR Eligibility Determination / Recommendation
001000	001000	Central East North	Potentially eligible
002616	002616	Central East	Potentially eligible
120042	None	Central	Potentially eligible
120041	None	East	Potentially eligible as part of P-19-002616
002630	002630	North	Potentially eligible
120044	Part of P-19-002630	North	Potentially eligible as part of P-19-002630
120052	Part of P-19-002630	North	Potentially eligible as part of P-19-002630
000234	000234	West	Contributor to a district listed in the NRHP by the Keeper; listed in the CRHR
000235	000235	West	Contributor to a district listed in the NRHP by the Keeper; listed in the CRHR
000705	000705	West	Potentially eligible
002629	002629	West	Potentially eligible
120043	None	West	Potentially eligible

As shown in Table 3.4-4, two resources located on the CSULB main campus, P-19-000234 and P-19-000235, are listed on the NRHP as contributing resources to the Puvunga Indian Village Sites Archaeological District. A restrictive covenant prohibiting development has been established on a large portion of this site and it is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management. Resources that are listed in the NRHP are automatically listed in the CRHR and are historical resources for the purposes of CEQA.

Archaeological sites are assumed to be eligible for inclusion in the CRHR until they are formally evaluated under the four criteria for designation and determined by the lead agency not to be significant. Therefore, the remaining seven archaeological resources are treated as historical resources for the purposes of CEQA. Of the seven resources that are treated as eligible, five resources located on the CSULB main campus have yielded significant information regarding the prehistory of California and appear to be eligible for inclusion in the CRHR. They are: P-19-000705, P-19-001000, P-19-002616, P-19-002629, and P-19-002630. The resources have not been formally evaluated but are potentially eligible for inclusion in the CRHR under Criterion 4. For a statement of eligibility, refer to the Confidential Archaeological Resources Technical Report (Confidential Appendix F).

Finally, two resources, P-19-120042 and P-19-120043, located on the CSULB main campus were documented as midden traces but have not been investigated to determine their potential eligibility for inclusion in the CRHR. The resources have not been formally evaluated but are potentially eligible for inclusion in the CRHR under Criterion 4. They are treated as potentially eligible for inclusion in the CRHR for purposes of this analysis. For a statement of eligibility, refer to the Confidential Archaeological Resources Technical Report (Confidential Appendix F).

As shown in Table 3.4-4, two resources, P-19-1000 and P-19-002616, overlap multiple districts; one resource, P-19-120042, is located in the Central District; one resource, P-19-120041, is located in the East District but subsumed by P-19-002616; one resource, P-19-002630, is located in the North District while the other two resources, P-19-120044 and P-19-120052, in the North District have been subsumed by P-19-2630; and five resources (P-19-000234, P-19-000234, P-19-000705, P-19-002629, and P-19-120043) are located in the West District. The South District contains no documented historical resources for the purposes of CEQA.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to cultural resources are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5; or
- Disturb any human remains, including those interred outside of dedicated cemeteries.

3.4.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed.

CUL-1 Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Program-Level Analysis for Master Plan Update

Construction

Implementation of the Master Plan Update would include renovation of existing buildings (renovation), demolition and replacement of existing buildings in the same physical locations (replacement), construction of new buildings (new construction), and leaving buildings in their existing location and configuration (building to remain). Renovation, replacement, or new construction projects impacting affecting individually eligible historic resources, or the historic district, including its contributors, have the potential to impact the historical significance of these resources.

Renovation projects implemented under the Master Plan Update that have the potential to impact individually eligible resources and/or the historic district may include, but are not necessarily

limited to, the following: retrofitting teaching and research spaces to meet contemporary standards; infrastructure systems upgrades; Americans With Disabilities Act-related improvements; energy efficiency improvements (including window replacements); change in use of space (e.g., classroom converted to group learning area); repurposing of an existing building to accommodate a new use; additions to an existing building; removal of additions or modifications that occurred outside of the building's period of significance; structural or seismic retrofitting; and improvements to landscape or hardscape features that are considered to be character-defining features of an eligible or designated historical building.

Renovation projects have the potential to impact historical resources by altering or removing character-defining features and spaces that characterize a resource may be altered or removed; through extensive alterations to a resource may be needed to accommodate a change of use; or through new additions to a resource may be incompatible with its bulk, scale, massing, height, or style. If the extent of alterations is such that a historical resource is no longer eligible for inclusion in the National Register and/or California Register, then the project would "materially impair" the historical resource and impacts would be significant.

Implementation of Mitigation Measures HR-A and HR-F and Mitigation Measures HR-C and HR-D, as applicable, would be required to reduce impacts to individually eligible resources. Mitigation Measure HR-A would require review of the project by a qualified architectural historian meeting the Secretary of the Interior's Professional Qualification Standards and compliance with the Secretary of the Interior's Standards for Rehabilitation (the Standards) to conduct an assessment of whether the proposed treatment of the historical resource complies with the Standards. If a project meets the applicable Standards, then Mitigation Measure HR-F, which requires additional project review for individually eligible historical resources during design development and construction. If the project does not meet the Standards, then the university, in consultation with the architectural historian, shall explore if impacts can be lessened by redesigning the project to eliminate its "objectionable or damaging aspects" (e.g., retaining instead of removing a character-defining feature, or reducing the size/massing of a proposed addition). If the architectural historian concludes that compliance with the Standards is not feasible and the proposed scope of work does not meet the Standards, then Mitigation Measures HR-C and HR-D would apply for documentation of the historical resource and interpretation which would implement an interpretive program for the historical resource. Mitigation Measures HR-A, HR-B and potentially Mitigation Measures HR-C and HR-D would be required to reduce impacts to the historic district. Mitigation Measures HR-A, HR-C, and HR-D are the same as for individually eligible resources; Mitigation Measure HR-B would require the university to develop an Adaptive Mitigation Management Program for the historic district. With implementation of the mitigation measures, impacts to individually eligible resources and the historic district related to renovation would be less than significant.

Replacement projects implemented under the Master Plan Update that have the potential to impact individually eligible resources and/or the historic district may include, but are not necessarily limited to, the following: demolition or removal of a district contributor or non-contributor; demolition or removal of an associated site or landscape feature – such as a designed landscape, hardscape element, or public art installation – within the historic district; construction of a new building within the historic district or in the vicinity of a historical resource. Replacement projects have the potential to impact historical resources by removing one or more district contributors, which compromise the integrity of the district and its ability to remain eligible for listing in the National Register and/or California Register. New construction implemented under the Master Plan Update that have the potential to impact individually eligible resources and/or the historic district may include, but are not necessarily limited to, the following: new construction in

the vicinity of an individually eligible resource may be incompatible with the historical resource in terms of bulk, scale, massing, height, and/or style; and new construction within a historic district may be incompatible with the district's prevailing scale, shape, form, material composition, and general aesthetic qualities, which may interrupt the district's important spatial relationships, dwarf district contributors, compromise important viewsheds, or detract from the district's characteristic aesthetic and spatial qualities. If the extent of demolition or new construction is such that a historical resource is no longer eligible for inclusion in the National Register and/or California Register, then the project would "materially impair" the historical resource, and impacts would be significant.

No individually eligible resources are identified as sites for demolition in the Master Plan Update. However, if a replacement or new construction project is proposed for a site in the vicinity of an individually eligible historical resource, Mitigation Measure HR-A, Secretary Standards Compliance, would be required. Similar to the analysis of renovation projects, if the project would meet the Standards, then Mitigation Measure HR-F would apply to individually eligible historical resources requiring additional project review during design and construction. However, if the project does not meet the Standards, then the university, in consultation with the architectural historian, shall explore if impacts can be lessened by redesigning the project to eliminate its "objectionable or damaging aspects" (e.g., retaining instead of removing a character-defining feature, or reducing the size/massing of a proposed addition). With implementation of the mitigation measures, impacts to individually eligible resources related to replacement and new construction would be less than significant.

To reduce impacts to the historical district from replacement or new construction projects, Mitigation Measure HR-B, requiring the university to develop an Adaptive Mitigation Management Program for the historic district, would be implemented. With implementation of the mitigation measures, impacts to the historic district related to replacement or new construction projects would be less than significant.

Operation

Operation of the improvements associated with the Master Plan Update would include routine maintenance and landscaping that would not require renovation, replacement, or new construction that have the potential to impact built historical resources. Therefore, no impacts associated with operation of the Master Plan Update would occur.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, two renovation projects have the potential to impact individually eligible resources: the Theatre Arts Renovation and the USU Renovation/Addition and Cafeteria Replacement. Renovations to the Theatre Arts building and the USU building could result in alterations to these resources through the removal or modification of either interior or exterior character-defining features to the extent that one or both of these resources are no longer eligible for listing in the National Register and/or California Register, constituting a significant impact. Moreover, additions to the USU building could compromise the integrity of this resource by introducing new massing and materials that are incompatible with historic fabric, thereby compromising the integrity of the USU building to the extent that it is no longer eligible for listing in the National Register and/or California Register.

Implementation of Mitigation Measures HR-A and HR-F and HR-C, HR-D, as applicable, would

be required to reduce potential impacts to the Theatre Arts building and USU building. Mitigation Measure HR-A would require review of the project by a qualified architectural historian meeting the Secretary of the Interior's Professional Qualification Standards and compliance with the Secretary of the Interior's Standards for Rehabilitation (the Standards). If the project would meet the Standards, then Mitigation Measure HR-F would apply to individually eligible historical resources requiring additional project review during design and construction. If the project would not meet the Standards, then the university, in consultation with the architectural historian, shall explore if impacts can be lessened by redesigning the individual development project to eliminate its "objectionable or damaging aspects" (e.g., retaining instead of removing a character-defining feature, or reducing the size/massing of a proposed addition). If the architectural historian concludes that compliance with the Standards is not feasible and the proposed scope of work does not meet the Standards, then Mitigation Measures HR-C and HR-D would apply for documentation of the historical resource and interpretation which would implement an interpretive program for the historical resource. With implementation of the mitigation measures, impacts to individually eligible resources related to renovation would be less than significant.

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, one new construction project has the potential to impact individually eligible resources: the 7th Street Community Outreach Facility. The construction of the 7th Street Community Outreach Facility would occupy a site adjacent to an individually eligible resource, the McIntosh Humanities Building, which could introduce architectural or other design features that are visually incompatible with the historical resource. Similar to the renovation projects discussed above, implementation of Mitigation Measures HR-A and HR-F and Mitigation Measures HR-C and HR-D, as applicable, would be required to reduce potential impacts to the McIntosh Humanities Building. With implementation of the mitigation measures, impacts to individually eligible resources related to replacement and new construction would be less than significant.

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, the following renovation projects have the potential to impact contributors to the historic district: Fine Arts 1 / 2 Renovation; Fine Arts 4 Renovation; Lecture Hall 150-151 (LH) Renovation; Liberal Arts 5 Renovation; Theatre Arts Renovation; USU Renovation / Addition and Cafeteria Replacement; and University Theatre Renovation. Most of these renovation projects are limited to interior spaces and would not affect building exteriors. Interior renovation projects would not alter or remove character-defining features of the district, which are generally limited to building exteriors, site and landscape features, circulation patterns, and spatial relationships among the district's contributing elements. Specifically, interior renovations to the Fine Arts 1 / 2, Fine Arts 4, Lecture Hall 150-151, Theatre Arts, and University Theatre buildings would not result in impacts to the district, provided that the scope of work is limited to building interiors and would not modify the form or appearance of exterior façades. No impacts to the district are anticipated with these projects.

However, exterior renovations are proposed for two district contributions: Liberal Arts 5 and USU. Exterior renovations to district contributors could result in the removal or modification of character-defining features of the district, depending on the scopes of work and the importance of the building(s) in conveying the significance of the district. Moreover, the construction of an addition to the USU building could result in the removal or alteration of character-defining features that are important to the district, and could also result in changes to the bulk, massing, form, and spatial relationships that define these buildings and their relationship to the district. Additionally, the proposed addition to the USU building would require the demolition of the University Dining Plaza, which is a contributor to the district. The demolition of the University Dining Plaza could potentially result in material impairment of the district by compromising the visual continuity that

currently exists between the USU, which anchors the north end of the district, and the rest of the district, most of which is located to the south of the University Dining Plaza.

Implementation of Mitigation Measures HR-B and HR-F and Mitigation Measures HR-C, HR-D, and HR-E, as applicable, would be required to reduce impacts to the historic district. Mitigation Measures HR-B, HR-C, HR-D, and HR-F are the same as described for the program-level analysis. Mitigation Measure HR-E would be implemented if the University Dining Plaza is demolished to accommodate the addition to the USU, and would require salvage of character-defining features and materials from the historical resource for educational and interpretive purposes on campus, or for reuse in new construction on campus. With implementation of the mitigation measures, impacts to the historic district related to renovation would be less than significant.

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, two replacement and new construction projects have the potential to impact contributors to the historic district: 7th Street Community Outreach Facility and College of the Arts Replacement Building. The construction of these individual development projects would require the demolition of three district contributors: Education 2, Ellis Education Building, and Fine Arts 3. Demolition of a historical resource is typically considered to be a significant and unavoidable impact that cannot be mitigated to a level of less than significant. However, when applied to a historic district, this principle is applied to the district in its entirety, rather to an individual building or specific feature within its boundaries. It is possible for limited demolition to occur within a district without adversely affecting the overall integrity of the district, provided that the district's character and significance remain unimpaired.

There is no prescribed threshold of contributing elements needed to constitute a historic district; eligibility is a holistic assessment based on whether a district retains enough of its historic character and integrity to convey its significance. One measure of impact is to calculate the percentage of contributors to a district following implementation of a project. In accordance with best professional practices, a district should retain, at minimum, 60 percent of its contributors to be eligible for the California Register. As noted, there are 27 buildings within the district, of which 24 (89 percent) are contributors. If all three of the above-listed district contributors (Education 2, Ellis Education Building, and Fine Arts 3) are demolished, and the two replacement buildings are constructed in their place, then the district would have a total of 26 buildings and 21 contributors, or 80 percent contributing buildings. This exceeds the professional standard of 60 percent. When this metric is applied to the district, the demolition of all five contributors would not, and in of itself, result in a significant impact to the district.

Nonetheless, potential significant impacts to the historic district would occur with implementation of the replacement and new construction projects. Implementation of Mitigation Measures HR-B, and HR-F and Mitigation Measures HR-C, HR-D, and HR-E, as applicable, would be required to reduce impacts to the historic district. The mitigation measures are the same as described above. With implementation of the mitigation measures, impacts to the historic district related to replacement and new construction would be less than significant.

Operation

Operation of the improvements associated with the Master Plan Update would include routine maintenance and landscaping that would not require renovation, replacement, or new construction that have the potential to impact built historical resources. Therefore, no impacts associated with operation of the Master Plan Update would occur.

CUL-2 Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Program-Level Analysis for Master Plan Update

Construction

Implementation of the Master Plan Update would include renovation of existing buildings (renovation), demolition and replacement of existing buildings in the same physical locations (replacement), construction of new buildings (new construction), and leaving buildings in their existing location and configuration (building to remain). Any renovation, replacement, or new construction project that would require ground-disturbing activities within the boundary of a known or unknown archaeological resource could result in a potentially significant impact to the resource. Examples of such "ground-disturbing activities" are defined for the purposes of this analysis to include the following: equipment and materials staging, stockpiling, storage, placement of temporary structures including construction trailers, gravelling, geotechnical boring, clearing and grubbing including vegetation or tree removal, grading, project-specific exploratory ground-disturbance, compaction, boring, excavating including hydrovac, digging, trenching, rig anchor installation, drilling, tunneling, auguring, blasting, topsoil stripping, land leveling, driving a ground rod, and installing fence posts. Impacts to archaeological resources would be reduced to a less than significant level with the implementation of Mitigation Measures AR-A through AR-K, which are summarized below.

Mitigation Measure AR-A would apply to any campus project, including at Beachside Village, that would require ground-disturbing activities, and requires the retention of a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738) for an initial project review. The qualified archaeologist would review the Confidential Archaeological Resources Technical Report (Confidential Appendix F), subsequent archaeological studies, location-specific archaeological studies covering the project area, available geotechnical studies or boring logs, and the mapped locations of archaeological sites, prior to the start of construction to determine whether ground-disturbing activities have the potential to impact archaeological resources. Additionally, the qualified archaeologist would review the designated staging and stockpiling areas identified for an individual development project, as required by Mitigation Measure AR-B.

If the qualified archaeologist determines that a project has the potential to impact unknown and/or ineligible archaeological resources, then at their discretion, the qualified archaeologist may require Mitigation Measure AR-C for a Worker Environmental Awareness Program (WEAP) prior to the start of construction, or a combination of Mitigation Measures AR-C and AR-G for archaeological monitoring during construction. If a resource is found during ground-disturbing activities, then work would stop, and the resource would be evaluated in accordance with Mitigation Measure AR-H, as further described below. Mitigation Measures AR-C and AR-G would minimize the potential to impact unknown and/or ineligible archaeological resources to less than significant.

If the qualified archaeologist determines that a project has the potential to impact a known listed or potentially eligible archaeological resource, or the project site is within a 25-foot radius of a known archaeological site boundary, but its three-dimensional limits (i.e., areal extent and depth) are unknown, then Mitigation Measure AR-E would apply and an Extended Phase I (XPI) may be implemented in order to identify the presence or absence of the site within project boundaries. The qualified archaeologist retains the discretion to reduce the 25-foot radius on a case-by-case basis based on their expert judgment. Additionally, if the qualified archaeologist determines that

the project has the potential to impact known significant archaeological resources, then avoidance and preservation-in-place are the preferred treatments. The qualified archaeologist would work with the Engineer of Record to identify means of avoidance wherever avoidance is feasible. If avoidance is not feasible, or if the project has the potential to impact unknown resources, then Mitigation Measure AR-F would require an archaeological resources monitoring and discovery plan (ARMDP) to be prepared.

If an unanticipated archaeological resource is unearthed during ground-disturbing activities, Mitigation Measure AR-H would be implemented. Mitigation Measure AR-H requires that work be halted immediately, and the discovery be evaluated by a qualified archaeologist. As required by Mitigation Measure AR-H, depending on the nature of the find, the determination of significance may require additional excavation, potentially including the preparation and execution of a Phase II Archaeological Testing Plan. The results of testing would be presented in an appropriate memorandum or report and communicated to the SCCIC. If the resource is determined to be significant and avoidance is not feasible, then Mitigation Measure AR-I would apply and requires a resource-specific Archaeological Resources Treatment Plan to be prepared and executed prior to recommencing ground-disturbing activities that may impact the resource.

If a significant resource is identified within a project site, an archaeological resources treatment plan would be developed that will govern the treatment of the resource, as required by Mitigation Measure AR-I. Mitigation Measure AR-I would also require a Phase III investigation (Data Recovery) if disturbance to the resource cannot be avoided. The Phase III investigation would generally consist of a limited scale program of archaeological excavation, radiocarbon 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 would be properly curated, as appropriate.

Additionally, in the event of an unanticipated find of human remains, Mitigation Measure AR-D would be required to suspend work and notify the Los Angeles County Coroner's Office.

Mitigation would be considered complete upon implementation of Mitigation Measure AR-J, which would require documentation of findings and filing of the documentation with the SCCIC, as described in Section 8, Recommendations, below. All archaeological material collected during ground-disturbing activities for the project would be processed and curated according to current professional repository standards, as required by Mitigation Measure AR-K.

Implementation of Mitigation Measures AR-A through AR-K would reduce impacts to archaeological resources to a less than significant level.

Operation

There are nine archaeological sites on campus that meet, or potentially meet, the criteria for inclusion in the CRHR. Operation of the improvements associated with the Master Plan Update would include routine landscape maintenance and other maintenance and operational activities (i.e., mowing; above-ground tree trimming and tree maintenance; aerating turf fields; setting up bleachers on the athletic fields; repairing existing irrigation lines; parking, staging, and stockpiling on paved surfaces; and pest and rodent control activities) that would not require ground-disturbing activities that have the potential to impact buried archaeological resources. Therefore, no impacts associated with operation of the Master Plan Update would occur.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, eight projects overlap significant or potentially significant archaeological resources. The individual development projects that overlap significant or potentially significant archaeological resources are listed below in Table 3.4-5.

Table 3.4-5: Individual Development Projects that Overlap with Known Potentially Significant Archaeological Resources

Project Name	Type of Project	Overlapping Potentially Significant Resources	Phase
East			
Engineering Replacement Building	Replacement	P-19-002616	Near
Faculty and Staff Housing	New	P-19-002616	Near
North			
Aquatics Center and Pool Renovation	Replacement	P-19-001000	Near
Jack Rose Track/Commencement Facilities	Renovation	P-19-002630	Mid
Baseball Field Conversion to Multi-Use Field	Renovation	P-19-002630	Mid
West			
Hillside College Renovations/Addition	Renovation	P-19-120043; P-19-002629; P-19-000234/235	Near
Improved Campus Entrance and Gateway	Renovation	P-19-000234/235	Near
Central/West/South			
Pedestrian/Bike Lane Improvements	Renovation	P-19-000234/235	Mid

As shown in Table 3.4-5, no impacts to resources P-19-000705 and P-19-120042 would occur as the Master Plan Update does not include individual development projects requiring ground-disturbing activities in these locations.

As shown in Table 3.4-5, the Hillside College Renovations/Addition, Improved Campus Entrance and Gateway, and Pedestrian/Bike Lane Improvements would occur within the boundaries of the NRHP-listed Puvunga Indian Village Sites Archaeological District. However, a large portion of the site has a restrictive covenant prohibiting development (Restricted Parcel) and it is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management. The Hillside College Renovations/Addition, Improved Campus Entrance and Gateway, and Pedestrian/Bike Lane Improvements would occur outside the boundaries of the Restricted Parcel, and would be limited to interior renovations outside the boundaries of the archaeological district for the Hillside College Renovations/Addition project; replacement of existing pavement, changing out the letters on the existing entrance sign, and landscaping for the

Improved Campus Entrance and Gateway; and replacement of existing pavement for the Pedestrian and Bike Lane Improvements project. To minimize and/or avoid impacts to the Puvunga Indian Village Sites Archaeological District (Resources P-19-000234 and P-19-000235), Mitigation Measures AR-A through AR-K would be required. With implementation of these mitigation measures, impacts to Resources P-19-000234 and P-19-000235 would be less than significant.

Additionally, the remaining individual development projects listed in Table 3.4-5 have the potential to include ground-disturbing activities. Any ground-disturbing activities that impact previously undisturbed sediments at these individual project site locations have the potential to impact buried significant archaeological resources, reduce the data potential of these resources, and reduce the resource's eligibility for inclusion in the CRHR. Therefore, the impact of the individual development projects requiring ground-disturbing activities within known potentially significant archaeological resources would result in a significant impact. Mitigation Measures AR-A through AR-K would be required. With implementation of these mitigation measures, impacts to potentially significant archaeological resources would be less than significant.

For individual development projects requiring ground-disturbing activities that would occur outside of the boundaries of known archaeological resources, Mitigation Measures AR-A, AR-B, and AR-C would apply. Mitigation Measure AR-G, requiring archaeological monitoring, would apply at the discretion of the qualified archaeologist. Mitigation Measures AR-D, AR-H, AR-I, AR-J, AR-J, and AR-K would apply if resources are found. With implementation of these mitigation measures, impacts to potentially significant archaeological resources would be less than significant.

As concluded in the program-level analysis, impacts to known significant archaeological resources resulting from the near-term and mid-term projects would be reduced to a less than significant level with the implementation of Mitigation Measures AR-A through AR-K.

Operation

Similar to under the program-level analysis, operation of individual development projects would not require any additional ground-disturbing activities beyond routine landscape maintenance and other maintenance and operational activities (i.e., mowing; above-ground tree trimming and tree maintenance; aerating turf fields; setting up bleachers on the athletic fields; repairing existing irrigation lines; parking, staging, and stockpiling on paved surfaces; and pest and rodent control activities) that could impact known or unknown archaeological resources on the CSULB main campus. Therefore, no impact to archaeological resources would occur as the result of project operation.

CUL-3 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Program-Level Analysis for Master Plan Update

Construction

The CSULB main campus includes one formal cemetery, two prehistoric burials, and an archaeological site where a single deciduous tooth and other fragmentary human remains were recovered. The formal cemetery and burial location would not be impacted by improvements associated with the proposed Master Plan Update. The deciduous tooth and other fragmentary remains have already been removed from their original location. None of these known human remains would be disturbed by implementation of the Master Plan Update. Additionally, no formal cemeteries are located on the Beachside Village property.

Although not anticipated, ground-disturbing activities may have the potential to disturb human remains, especially within the known significant archaeological sites. Implementation of Mitigation Measure AR-D, which would halt work and require notification to the Los Angeles County Coroner's Office if human remains are found, and compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097, would reduce this impact to less than significant.

Operation

As documented above, the CSULB main campus includes one formal cemetery, two prehistoric burials, and an archaeological site where a single deciduous tooth and other fragmentary human remains were recovered. Improvements associated with the Master Plan Update would not increase activity in the locations of the formal cemeteries or burials, nor would it impede access to these locations by Native American descendant communities. Operations would not require ground-disturbing activities that have the potential to impact unknown, buried human remains outside of dedicated cemeteries. As such, no impacts associated with operation of the Master Plan Update would occur related to known or unknown human remains, including those interred outside of dedicated cemeteries.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

No known human remains would be impacted by the individual development projects associated with the Master Plan Update. As discussed, the CSULB main campus includes one formal cemetery, two prehistoric burials, and the location where a single deciduous tooth and other fragmentary human remains were recovered. The formal cemetery and burial locations, which are all within the boundaries of the Puvunga Indian Village Sites Archaeological District, would not be impacted by any of the individual development projects, including the Hillside College Renovations/Addition, Improved Campus Entrance and Gateway, and Pedestrian/Bike Lane Improvements. The deciduous tooth and fragmentary human remains have already been removed from their original locations as the result of controlled archaeological excavations.

Although not anticipated, ground-disturbing activities associated with individual development projects may have the potential to disturb human remains, especially within the known significant archaeological sites identified above. This would be a significant impact. Compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097 and implementation of Mitigation Measure AR-D, which would require work to be halted and notification provided to the Los Angeles County Coroner's Office if human remains are found, would reduce this impact to less than significant.

Operation

As under the program-level analysis, operations of the facilities to be constructed under the Master Plan Update would not require any ground-disturbing activities, and thus, do not have the potential to impact human remains that could impact unknown, buried human remains outside of dedicated cemeteries. No impact would occur.

3.4.5 Mitigation Measures

Historic Resources

HR-A For all instances in which a project involves an individually eligible resource, the University shall engage the services of a qualified architectural historian meeting the

Secretary of the Interior's Professional Qualification Standards to conduct an assessment of whether the proposed treatment of the historical resource complies with the Secretary of the Interior's Standards for Rehabilitation ("the Standards"). If the proposed project is found to not be in compliance with the Standards, then the architectural historian shall provide recommendations for how to modify the project design so as to bring it into compliance. The professional shall prepare a memorandum or equivalent level of documentation conveying the findings of the assessment.

HR-B To ensure that historic buildings and other contributing features within the Upper Campus Historic District are appropriately renovated and maintained, and that the impact of new construction within the district is mitigated to a less-than-significant level, the University shall develop an Adaptive Mitigation Management Program for the historic district. This Adaptive Mitigation Management Program shall be produced following adoption of the Master Plan Update. This will act as a rehabilitation and maintenance plan for the district, and will ensure that projects undertaken within the district are compatible with its historic character. The plan shall include:

- Historic overview and context of the district
- Identification of contributing buildings and their character-defining features
- In-depth assessment of the designed landscape within the district, including identification of character-defining site features, hardscape, and softscape
- Definitions of applicable historic preservation terms
- Guidelines for building rehabilitation and maintenance
- Guidelines for compatible new construction
- Guidelines for landscape preservation and maintenance

HR-C The University shall have Historic American Buildings Survey (HABS) Level II documentation or the equivalent completed for the historical resource and its setting. This documentation shall include drawings, photographs, and a historical narrative. Documentation shall be undertaken prior to the commencement of construction. To ensure public access, the University shall submit copies of the documentation to the Special Collections and University Archives at the CSULB Library, and other interested parties to be identified.

- Drawings: Existing historic drawings of the historical resource, if available, shall be photographed with large-format negatives or photographically reproduced on Mylar. In the absence of existing drawings, full-measured existing conditions drawings of the building's floorplans and exterior elevations should be prepared.
- Photographs: Photo-documentation of the historical resource shall be prepared to HABS standards (or the equivalent) for archival photography. HABS standards require large-format black-and-white photography, with the original negatives having a minimum size of 4"x5". Digital photography, roll film, film packs, and electronic manipulation of images are not acceptable. All film prints, a minimum of 4"x5", must be hand-processed according to the manufacturer's specifications and printed on fiber base single weight paper and dried to a full gloss finish. A minimum of twelve photographs must be taken. Photographs must be identified and labeled using HABS standards.

- Historical Narrative: A professional meeting the Secretary of the Interior's Professional Qualification Standards in Architectural History or History shall compile historical background information relevant to the historical resource and prepare a narrative.

HR-D The University shall prepare and implement an interpretative program for the historical resource. The interpretive program shall focus on the resource's architectural and historical significance and shall incorporate all of the following materials/media.

- On-site display of historic documentation, which may include historic photographs, historic architectural plans and drawings, and other applicable materials that convey the significance of the historical resource. These materials shall be displayed in a visible and accessible location.
- Online display of historic documentation, including historic photographs, historic architectural plans and drawings, and other applicable materials that convey the significance of the historical resource. These materials shall be published on the CSULB website and available to the public.
- Incorporation of commemorative materials and historical information into on-campus orientation and tours for educational purposes.

HR-E Under the guidance of a historic architect or architectural historian meeting the Secretary of the Interior's Professional Qualification Standards, and through careful methods of deconstruction to avoid damage and loss, the University shall salvage character-defining features and materials from a historical resource for educational and interpretive purposes on campus, or for reuse in new construction on campus.

HR-F For all instances in which a project involves an individually eligible resource, the University shall engage the services of a qualified architectural historian or historic architect meeting the Secretary of the Interior's Professional Qualification Standards to review milestone drawing sets and generally be available to the design team during design and construction. The architectural historian/historic architect shall review Design Development (DD) and Construction Documentation (CD) drawing sets at 50% and 100% completion and provide a brief memo regarding ongoing project compliance with the Standards. Project review during construction shall occur once a month and reporting in memo format. Memos shall be submitted to CSULB Design and Construction Services.

Archaeological Resources

The following mitigation measures would reduce impacts to known and unknown archaeological resources and apply to projects on campus that would require ground-disturbing activities. Examples of such ground-disturbing activities include the following:

- Equipment and materials staging
- Stockpiling
- Storage
- Placement of temporary structures including construction trailers
- Gravelling
- Geotechnical boring
- Clearing and grubbing, including vegetation or tree removal
- Grading
- Project-specific exploratory ground-disturbance
- Compaction
- Boring
- Excavating, including hydrovac
- Digging
- Trenching
- Rig anchor installation
- Drilling
- Tunneling
- Auguring
- Blasting
- Topsoil stripping
- Land leveling
- Driving a ground rod
- Installing fence post

The following mitigation measures would not be applicable to routine landscape maintenance and other maintenance and operational activities. Examples of excluded maintenance and operational activities include the following:

- Mowing
- Above-ground tree trimming and tree maintenance
- Aerating turf fields
- Setting up bleachers on the athletic fields
- Repairing existing irrigation lines
- Parking, staging, and stockpiling on paved surfaces
- Pest and rodent control activities

For projects on-campus with ground-disturbing activities, the following mitigation measures would apply (AR-A, AR-B, AR-C, and AR-D).

AR-A Initial Project Review

This mitigation measure shall apply to projects on-campus with ground-disturbing activities. Prior to the commencement of ground-disturbing activities, CSULB shall consult with a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738). The qualified archaeologist shall determine to what degree ground-disturbing activities have the potential to impact archaeological resources through the review of plans against the data and the analysis in the Archaeological Resources Technical Report prepared for the CSULB Master Plan Update Environmental Impact Report, any subsequent archaeological studies, location-specific archaeological studies covering the project area, designated equipment and materials staging/stockpile areas, available

geotechnical studies or boring logs, and the mapped locations of archaeological sites.

If the qualified archaeologist determines the project has the potential to impact unknown and/or ineligible archaeological resources:

- At their discretion, the qualified archaeologist may require Mitigation Measure AR-C (WEAP) or a combination of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring).

If the qualified archaeologist determines the project has the potential to impact known listed/potentially eligible archaeological resources:

- The qualified archaeologist shall determine whether an Extended Phase I (XPI) should be implemented in order to identify the presence or absence of a known site within project boundaries in accordance with Mitigation Measure AR-E.
- Avoidance and preservation-in-place are the preferred treatments for significant archaeological resources. If the project has the potential to impact known archaeological resources, then the qualified archaeologist shall work with the Engineer of Record to identify means of avoidance wherever avoidance is feasible. If avoidance is not feasible, or if the project has the potential to impact unknown archaeological resources, then an archaeological resources Treatment Plan shall be prepared in accordance with Mitigation Measure AR-I.
- The qualified archaeologist retains the discretion to reduce the 25-foot radius on a case-by-case basis based on their expert judgment.

AR-B Designated Staging and Stockpiling Areas

This mitigation measure shall apply to projects on-campus with ground-disturbing activities. Prior to the commencement of projects involving ground-disturbing activities, CSULB shall clearly identify a construction staging and soils stockpiling area for the project. CSULB shall prohibit the placement of earthwork spoils, construction materials, and equipment anywhere other than the specified construction staging and soils stockpile area(s) for that project unless on paved surfaces.

No staging areas or stockpiles shall be established on unpaved surfaces within a 25-foot radius of the boundaries of known potentially eligible archaeological sites without compliance with Mitigation Measure AR-A (Initial Project Review) and potential additional mitigation.

AR-C Worker Environmental Awareness Program for Archaeological Resources

Due to the potential to encounter unanticipated resources, prior to the beginning of ground-disturbing activities by the construction crew, the construction crew associated with ground-disturbing activities shall be informed of the archaeological resource's value involved and of the regulatory protections afforded those resources. The crew shall also be informed of procedures relating to the discovery of unanticipated archaeological resources. The crew shall be cautioned not to collect artifacts, and directed to inform a construction supervisor and the onsite archaeological monitor in the event that archaeological remains are discovered during the course of construction.

The initial training shall be conducted by the on-site archaeological monitor and can be

incorporated into the project's construction safety training. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities prior to their commencement of ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording.

AR-D Treatment of Unanticipated Finds of Human Remains

If human skeletal remains are found at any project site during ground-disturbing activities, work shall be suspended and the Los Angeles County Coroner's Office shall be notified. Standard guidelines set by California law provide 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). If the remains are found to be archaeological, then after the coroner releases the site, the qualified professional archaeologist, in consultation with the most likely descendant, shall prepare an archaeological resources Treatment Plan in accordance with Mitigation Measure AR-I that also incorporates the guidance 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. The plan shall follow the Native American Graves Protection and Repatriation Act/CalNAGPRA rules, and include the terms of any reburial or final disposition and any necessary CSULB assistance required for the reburial or associated ceremonies. Human remains recovered and awaiting repatriation shall be held in a secure location unless otherwise determined by the CSU in consultation with the Most Likely Descendent.

At the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A, the following mitigation measures may apply.

AR-E Extended Phase I Investigations

This mitigation measure shall apply to projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary. If determined to be required as the result of implementation of Mitigation Measure AR-A (Initial Project Review), an Extended Phase I (XPI) Plan shall be devised and implemented at the advice of the qualified archaeologist and at the discretion of CSULB, if not enough information is available to identify the three-dimensional limits of intact archaeological resources within a known archaeological site. The purpose of the XPI is to identify the three-dimensional spatial boundaries of undisturbed archaeological resources within or in proximity to the proposed project site.

The XPI Plan shall include, at a minimum:

- An introduction;
- Site context and stratigraphy;
- Decision thresholds;
- Scope of work;
- Timetable;
- Curation plan;

- References cited; and
- Appropriate maps.

The XPI shall be completed, and results documented in a memo summarizing the XPI methods and findings prepared by the qualified archaeologist, prior to the beginning of ground-disturbing activities associated with the project so that the results may be used in project planning. The memo reporting either positive or negative results shall also be communicated to the South Central Coastal Information Center (SCCIC).

If no subsurface or potentially significant archaeological resources are identified during the XPI:

- An Archaeological Resources Monitoring and Discovery Plan (ARMDP) shall be prepared in accordance with Mitigation Measure AR-F.
- Upon the start of ground-disturbing activities, Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring) shall apply.
- Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting).

If potentially significant subsurface archaeological resources are identified during the XPI:

- If feasible, the identified subsurface site location shall be avoided by planned construction. If avoidance is not feasible, then a Treatment Plan and Phase III data recovery in accordance with Mitigation Measures AR-I shall be implemented. Following implementation of AR-I, ground-disturbing activities may commence with implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring).
- Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measures AR-J (Reporting).

AR-F Archaeological Resources Monitoring and Discovery Plan

This mitigation measure shall apply to projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary. If determined to be required following implementation of Mitigation Measure AR-A (Initial Project Review), an Archaeological Resources Monitoring and Discovery Plan (ARMDP) shall be prepared for projects with the potential to impact known listed/potentially eligible archaeological sites. The ARMDP shall clearly specify the steps to be taken to mitigate impacts to archaeological resources. The ARMDP shall specify monitoring methods, personnel, and procedures to be followed in the event of a discovery. All work shall be conducted under the direction of a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738). ARMDPs for previous projects on campus may be utilized if applicable as determined by the qualified archaeologist.

The ARMDP shall include, at a minimum:

- An introduction;
- Project description;

- Statement of archaeological sensitivity and rationale for the monitoring program;
- Archaeological context and research design;
- Statement of methods and identification of what activities require monitoring;
- Description of monitoring procedures;
- Outline the protocol to be followed in the event of a find;
- Terms of the final disposition of any non-funerary artifacts;
- Criteria and triggers identified when further consultation is required for the evaluation and treatment of a find;
- Key staff, including Native American monitors, shall be identified, and the process of notification and consultation shall be specified in the event of a potentially significant find; and
- A curation plan.

Once the ARMDP is prepared, ground-disturbing activities may commence with the implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring).

If no subsurface or potentially significant archaeological resources are identified:

- Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting).

If potentially significant subsurface archaeological resources are encountered during ground-disturbing activities:

- Work shall stop immediately and Mitigation Measure AR-H (Evaluation of Unanticipated Finds) shall apply.

AR-G Archaeological Resources Monitoring

At the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A, for projects located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary, this mitigation measure shall apply following implementation of an ARMDP developed pursuant to Mitigation Measure AR-F, or implementation of an archaeological resources Treatment Plan developed pursuant to Mitigation Measure AR-I.

This mitigation measure shall also apply, at the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A (Initial Project Review), for projects located in unknown/ineligible archaeological sites on campus requiring ground-disturbing activities.

Due to the potential to encounter archaeological resources, archaeological monitoring shall be conducted by an archaeological monitor who is working under the guidance of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738).

To preserve the integrity of the tribal consultation process, archaeological support

services, including monitoring, shall be provided by an entity separate and distinct from that providing Native American support services. The archaeological monitor shall observe ground-disturbing activities. If discoveries are made during ground-disturbing activities, additional work may be required in compliance with Mitigation Measure AR-H (Evaluation of Unanticipated Finds).

If no subsurface or potentially significant archaeological resources are identified:

- Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting).

If potentially significant subsurface archaeological resources are encountered during ground-disturbing activities:

- Work shall stop immediately and Mitigation Measure AR-H (Evaluation of Unanticipated Finds) shall apply.

AR-H Evaluation of Unanticipated Finds; Phase II Testing

In the event an unanticipated archaeological resource is unearthed during ground-disturbing activities associated with any campus project, work shall stop immediately and the discovery shall be evaluated by a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), pursuant to the procedures set forth at CEQA Guidelines Section 15064.5. Depending on the nature of the find, the determination of significance may require additional excavation, potentially including the preparation and execution of a Phase II Archaeological Testing Plan. As the lead agency, CSULB shall make a determination of significance on the basis of the recommendations of the qualified archaeologist and submit this determination of significance to the State Historic Preservation Officer (SHPO) for review and comment. The results of testing shall be presented in an appropriate memorandum or report and communicated to the SCCIC.

If the resource is determined not to be significant:

- Resource-specific work is complete, and Mitigation Measure AR-I (Archaeological Resources Treatment Plan) does not apply.
- Archaeological monitoring in accordance with Mitigation Measure AR-G shall still apply unless otherwise stipulated in the ARMDP.
- Mitigation shall be considered complete when documentation is completed in accordance with Mitigation Measure AR-J (Reporting).

If the resource is determined to be significant and avoidance is not feasible:

- Mitigation Measure AR-I is required, in which a resource-specific Archaeological Resources Treatment Plan shall be prepared and executed prior to recommencing ground-disturbing activities that may impact the resource.
- Archaeological monitoring in accordance with Mitigation Measure AR-G shall still apply unless otherwise stipulated in the ARMDP.

AR-I Archaeological Resources Treatment Plan; Phase III Data Recovery

As determined by a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), if a significant resource is identified within the project site, an archaeological resources Treatment Plan shall be developed that will govern the treatment of the resource if it is encountered. CSULB shall provide via e-mail a copy of the Treatment Plan to the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus as identified by the Native American Heritage Commission and tribes shall be given 7 days to provide comments.

Avoidance and preservation-in-place are the preferred treatment for archaeological resources, and the Treatment Plan shall detail plans for avoidance, if possible, such as restricting work to disturbed soil or limiting the depth of excavations to avoid archaeological resources.

If disturbance to resources cannot be avoided, a Phase III (data recovery) investigation shall be required, pursuant to CEQA Guidelines Section 15064.5. The Phase III data recovery plan shall be prepared in consultation with SHPO. The Phase III data recovery plan shall generally consist of:

- A limited scale program of archaeological excavation;
- Radiocarbon 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 shall be properly curated, as appropriate.

Once the Treatment Plan is prepared and, if applicable, the Phase III data recovery is conducted, ground-disturbing activities may commence or continue with the implementation of Mitigation Measures AR-C (WEAP) and AR-G (Archaeological Monitoring).

All bone recovered as a result of Phase III excavations shall be analyzed by a qualified osteologist or physical anthropologist at minimum on a weekly basis while excavations are underway in order to identify whether any human remains are included in the collection so that they may be appropriately treated in compliance with Mitigation Measure AR-D (Treatment of Human Remains).

Phase III work shall be considered complete and ground-disturbing activities may commence when:

- Archaeological excavations are completed in accordance with the Phase III data recovery plan and to the satisfaction of CSULB and the qualified archaeologist.
- Documentation is completed in accordance with Mitigation Measure AR-J (Reporting). The report shall be completed and presented to CSULB for comment within 18 months of the completion of Phase III excavations.

AR-J Reporting

If a mitigation measure is implemented that requires documentation or reporting, then mitigation shall be considered complete when documentation of findings is completed to a level satisfactory to the qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (48 Federal Register 44738), in coordination with CSULB, and filed with the SCCIC of the California Historical Resources Information System. Specific reporting requirements shall be detailed in the ARMDP, Treatment Plan, and other plans created in the course of the Master Plan Update or in compliance with the above mitigation measures.

A monitoring technical report documenting activities monitored, monitoring actions taken, and a description of finds shall be submitted to the SCCIC after approval by CSULB.

If the results of monitoring for significant resources are negative, or only non-significant finds or isolates are encountered, then the report shall take the form of a memorandum, and shall include, at minimum:

- Undertaking information;
- Appropriate maps of the project area;
- Qualifications of monitoring staff;
- Monitoring locations and methods;
- Dates of monitoring; and
- As necessary, management considerations and recommendations for future work.
- The memorandum shall be submitted to CSULB for comment within 8 weeks of the completion of project fieldwork and communicated to the SCCIC when completed to the satisfaction of CSULB.

If the results of monitoring are positive for significant resources, then the report shall be prepared in accordance with the California Office of Historic Preservation's "Archaeological Resource Management Reports: Recommended Contents and Format*",* and shall include:

- A management summary;
- Undertaking information;
- Appropriate maps of both the project area and impacted resources;
- An environmental setting;
- Prehistoric, ethnographic, and historic contexts;
- Research design;
- Methods;
- A thorough report of findings;
- A discussion of the data obtained and the resource's significance in reference to the historic, ethnographic, and prehistoric contexts;

- A record of the final disposition of excavated artifacts and any intact archaeological resources;
- Management considerations and recommendations for future work that may impact the resource; and
- References.
- Other report sections may also be required as determined by CSULB with the recommendations of the qualified archaeologist.
- The report shall be submitted to CSULB for comment within 18 months of the completion of project fieldwork, and shall be communicated to the SCCIC when completed to the satisfaction of CSULB.

Appropriate DPR 523 series forms shall also be prepared as appropriate for newly-identified resources or resources that, in the estimation of the qualified archaeologist, require updated forms and submitted to the SCCIC. Minimal documentation of previously unknown isolated finds shall consist of a sufficient description of the find to prepare a DPR 523a Primary Form (including photographs) and appropriate maps.

Minimum documentation of previously unknown archaeological sites shall consist of a:

- Sufficient description of the find to prepare a DPR 523a Primary Form (including photographs);
- DPR 523c Archaeological Site Record;
- DPR 523j Location Map; and
- DPR 523k Sketch Map.

Updated forms may be required for documented resources if:

- There has been a substantial change to the significance of the resource (e.g., if it is found to be destroyed),
- Newly identified archaeological features or attributes of the site are identified that are not otherwise documented in the existing DPR forms, or
- For any reason the qualified archaeologist finds the existing forms to be inadequate.

Minimum documentation of known resources shall consist of a DPR 523L Update form if considered necessary by the qualified archaeologist. Additional forms may also be required to appropriately document resources at the discretion of CSULB and the qualified archaeologist.

AR-K Curation and Final Disposition of Archaeological Materials

Archaeological material collected during ground-disturbing activities for projects shall be processed and curated according to current professional repository standards unless otherwise determined by the lead agency as the result of consultation. The collections and associated records shall be transferred, including title, to an appropriate curation facility, to be accompanied by payment of the fees necessary for permanent curation. Final disposition of resources of Native American origin shall be determined in accordance with the ARMDP in Mitigation Measure AR-F or Treatment Plan in Mitigation

Measure AR-I.

Minimum documentation before any final disposition of the artifacts shall consist of:

- Count;
- Weight;
- A basic description of all artifacts; and
- Include photographic documentation of any diagnostic artifacts and a representative sample of non-diagnostic artifacts.

3.4.6 Level of Significance After Mitigation

Implementation of Mitigation Measures HR-A and HR-F would ensure that impacts to historical resources would be less than significant during construction activities. Implementation of Mitigation Measures AR-A through AR-K would ensure that impacts to archaeological resources would be less than significant during construction activities. Implementation of Mitigation Measure AR-D and AR-K would ensure that impacts to human remains would be less than significant during construction activities.

3.4.7 Cumulative Impacts

Built Historical Resources

Cumulative impacts to historical resources evaluate whether the cumulative impacts of the proposed project, when considered together, substantially diminish the number of historical resources within the same or similar context or property type. Impacts to historical resources tend to be site-specific. In the context of historical resources, cumulative impacts would involve projects at historical resources with the same level or type of designation or evaluation, projects affecting other structures located within the same historic district, or projects involving resources that are significant within the same historic context as other resources that are impacted by the proposed project.

With respect to implementation of the Master Plan Update, cumulative impacts may include, but are not necessarily limited to, the following scenarios:

- Removal of most historical resources associated with a particular architect who was notable on a local, state and/or national level and made important contributions to the campus and its built environment.
- Removal of most historical resources that exemplify a particular architectural style.
- Removal of most historical resources that represent a significant historic context or theme significant to the campus's developmental history.
- Removal of most contributors within the National Register/California Register-eligible Upper Campus Historic District such that the district is no longer able to convey its historic significance.

Whether cumulative impacts to historical resources would result from implementation of the Master Plan Update is dependent on the cumulative result of impacts associated within the specific individual development projects addressed herein. As discussed, there is no demolition of individually eligible historical resources proposed as part of the Master Plan Update. However,

near-term and mid-term renovation projects proposed as part of the Master Plan Update have the potential to impact two individually eligible resources (Theatre Arts and USU). Renovations to the Theatre Arts and USU could result in alterations to these resources through the removal or modification of either interior or exterior character-defining features to the extent that one or both of these resources are no longer eligible for listing in the National Register and/or California Register. Implementation of Mitigation Measures HR-A and HR-F, and Mitigation Measures HR-C, HR-D, and HR-E, as applicable, would be required to reduce potential impacts to the Theatre Arts building and USU building to less than significant. These resources retain eligibility; therefore, there would not be cumulative impacts resulting from the individual development project.

Also as discussed, the Master Plan Update includes modifications to the Upper Campus Historic District. Specifically, it provides for the renovation of eight district contributors (Fine Arts 1, Fine Arts 2, Fine Arts 4, Lecture Hall 150-151, Liberal Arts 5, Theatre Arts, USU, and University Theatre), and for the removal of four district contributors (Education 1, Education 2, Fine Arts 3, and University Dining Plaza). The renovation or removal of a single district contributor, or a small number of district contributors, is unlikely to comprise the integrity of the district such that its eligibility for the National Register and/or California Register is compromised. However, when analyzed collectively, these projects have the potential to diminish the integrity of the district of a whole such that it is no longer eligible for listing in the National Register and/or California Register. However, as discussed above, the district would retain the majority of its contributing buildings, and projects would be required to implement Mitigation Measures HR-B and HR-F, and Mitigation Measures HR-C, HR-D, and HR-E, as applicable; therefore, implementation of the Master Plan Update as a whole would not result in a significant impact to the district.

Archaeological Resources

Improvements associated with the Master Plan Update would result in less than significant impacts to archaeological resources and human remains with the implementation of Mitigation Measures AR-A through AR-K. These mitigation measures would ensure that the impact of the improvements associated with the Master Plan Update, in conjunction with the related projects, would not be cumulatively considerable. Additionally, related projects in the vicinity would also be required to comply with applicable state, federal, and local regulations concerning archaeological resources.

The geographic scope of analysis for potential cumulative impacts to archaeological sites and resources includes the Alamitos Bay Region. This geographic scope of analysis is appropriate as the archaeological sites and resources within this area are expected to include both those that occur on the Master Plan Update area, comprised of the CSULB main campus and Beachside Village property, and similar nearby sites. The similar environments, landforms, and hydrology in this vicinity would result in similar land-use and, thus, site types. This is a large enough area to encompass any effects of the individual development projects on archaeological resources that may combine with similar effects caused by other projects, and provides a reasonable context wherein cumulative actions could affect archaeological resources. The temporal scope for cumulative impacts to archaeological sites and resources encompasses the cumulative impacts of implementation of the proposed Master Plan Update, in conjunction with other related projects in the area. Implementation of the Master Plan Update could cause impacts on archaeological sites and resources throughout the span of development of the Master Plan Update.

Cumulative impacts to archaeological sites and resources in the Alamitos Bay Region could occur if other existing or proposed related projects, in conjunction with the proposed Master Plan Update, would have impacts on cultural resources that, when considered together, would be

cumulatively considerable. The Alamitos Bay Region contains a significant archaeological record that, in some cases, has not been well documented or recorded. Thus, there is potential for ongoing and future development projects in the vicinity to disturb landscapes that may contain known or unknown archaeological resources. Many of these resources could provide information that would contribute to the understanding of regional research themes, and could qualify as historical resources or unique archaeological resources. While it is not possible, based on available data, to fully quantify how many archaeological resources have been or could be impacted by past, present, and reasonably foreseeable projects, it is likely that the cumulative loss of archaeological resources as a result of these projects could result in a loss of important information necessary to a full understanding of the regional history. Direct impacts from past, present, and reasonably foreseeable projects in the geographic scope of analysis could, when taken together in combination, contribute to a cumulatively significant impact on historical resources and unique archaeological resources.

Many of the archaeological resources within the geographic scope have already been subjected to impacts as a result of past projects. Projects undertaken before environmental laws such as CEQA were in place may not have considered, or mitigated, significant impacts to archaeological resources, and may have resulted in damage to important archaeological resources. Many coastal archaeological sites have been subject to early looting and relic hunting during the late 1800s through the 1950s. Projects that may occur in the foreseeable future at or near the CSULB campus could impact archaeological sites and resources, and ground-disturbing activities associated with implementation of the Master Plan Update in conjunction with other projects in the area could contribute to the progressive loss of archaeological sites and resources. These projects may also result in visual, auditory, and other environmental impacts that may adversely affect sites in the Alamitos Bay Region.

Implementation of the Master Plan Update would not lead to cumulatively considerable impacts specifically to a potential archaeological district. The CSULB main campus includes two sites, P19-000234 and P-19-000235, that contribute to the Puvunga Indian Village Sites Archaeological District. This district also includes off-campus resource P-19-000306. However, additional sites have not been assessed for inclusion in the district since it was first listed in the NRHP in 1974. Additional archaeological sites both on and around campus may be contributors to an archaeological district that includes these three sites and others, both on and around campus, although without additional documentation to identify their current integrity, it is not possible to identify them as individually significant or include them as contributing resources to the Puvunga Indian Village Sites Archaeological District at this time. However, with the exception of P-19-000235 and that portion of P-19-000234 located on campus, all the archaeological sites located on campus have suffered previous significant impacts to their integrity. The archaeological resources located on campus may or may not retain enough integrity to obtain significant archaeological data.

The resources in the Alamitos Bay Region have lost their *integrity of setting. "*Setting is the physical environment of a historic property," and "setting refers to the character of the place in which the property played its historical role."[9] The Alamitos Bay Region has been substantially altered since the prehistoric period. Swamps have been reclaimed. Native animal and plant species have been eradicated and replaced by foreign species. On the main campus, estuaries have been filled and landforms cut away in order to build upon or landscape. Archaeological sites on the CSULB main campus and Beachside Village property have been so altered in the recent

[9] National Park Service, Revised 1995, *National Register Bulletin 15, Section VIII: How to Evaluate the Integrity of a Property.*

past that they no longer have the same setting as in the prehistoric or ethnohistoric period.

With the exceptions of the listed sites, the archaeological resources on the CSULB main campus, and any that may exist on the Beachside Village property, have lost their *integrity of feeling.* "Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character."[10] With the exceptions of the listed resources, the potentially significant sites that are known or may exist on the CSULB main campus or the Beachside Village property are covered with buildings, hardscaping, landscaping, streets, and athletic fields. They lack surface physical features that would convey the feeling of their historic character.

Moreover, with the exceptions of the listed sites, the archaeological resources on the CSULB main campus, and any that may exist on the Beachside Village property, have lost their *integrity of association*. "Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer. Like feeling, association requires the presence of physical features that convey a property's historic character."[11] The surface conditions of the sites on campus, with the exception of the listed resources, consist of educational, research, and support buildings and athletic fields. They lack the physical features to convey to the observer their importance to the development of Gabrielino religion or their connections to deities.

With the exceptions of the listed archaeological sites, impacts to known or unknown archaeological sites on the CSULB main camps and Beachside Village property would not impact the eligibility of a hypothesized archaeological district. With the implementation of Mitigation Measures AR-A through AR-K, projects planned within the area of the two listed archaeological sites on campus would not substantially impact their eligibility for inclusion in the NRHP and CRHR either individually or as contributors to the NRHP-listed district. Moreover, the third contributing site to that district, P-19-000306, is protected within land owned by the City of Long Beach and administered by the Rancho Los Alamitos Foundation. These three sites would continue to exist substantially unchanged throughout the period of implementation of the Master Plan Update. The Puvunga Indian Village Sites Archaeological District as currently defined would not be substantially impacted by the proposed Master Plan Update.

Any way in which these sites would contribute to a potential archaeological district would relate to their data potential and fall under NRHP Criterion D or CRHR Criterion 4. When considered in combination with the impacts of other projects in the cumulative scenario, implementation of the Master Plan Update would contribute incrementally to impacts on archaeological resources, including historical resources and unique archaeological resources. However, Mitigation Measures AR-A through AR-K would avoid, minimize, rectify, reduce, or compensate for the significance of the impacts to a less than significant level. Impacts would be reduced to a less than significant level by preserving the data which they preserve. Mitigation identified in Section 3.4.5, Mitigation Measures, would avoid, minimize, rectify, reduce, or compensate for potential direct and indirect impacts to historical resources and unique archaeological resources resulting from the Master Plan Update, and the cumulative projects would also be subject to the CEQA process which would identify resources and include project specific mitigation for impacts to historical and unique archaeological resources. Appropriate collection of data from these sites

[10] National Park Service, Revised 1995, *National Register Bulletin 15, Section VIII: How to Evaluate the Integrity of a Property*

[11] Ibid.

would mitigate impacts below the level of significance by preserving any existing data which may make them significant.

Furthermore, implementation of Mitigation Measure AR-D, in combination with Mitigation Measures AR-A through AR-C and AR-E through AR-K, would mitigate the Master Plan Update's potential to disturb any human remains, including those interred outside of formal cemeteries, by providing qualified professionals, preparation of an Archaeological Resources Monitoring and Discovery Plan, worker sensitivity training, archaeological monitoring, stop-work and avoidance and preservation procedures, and coordination to determine the appropriate disposition of the remains, and cumulative impacts to human remains would be less than significant.

In summary, improvements associated with the Master Plan Update, including to a potential archaeological district including contributing sites within the CSULB main campus or Beachside Village property, would not result in cumulatively considerable impacts to archaeological resources and human remains with the implementation of Mitigation Measures AR-A through AR-K.

3.5 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

This section evaluates the potential impacts to geology, soils, and paleontological resources that would result from implementation of the proposed Master Plan Update. This section presents the regulatory setting, environmental setting, methodology for determining potential impacts, impact analysis, proposed measures to mitigate significant impacts, and an analysis of potential cumulative impacts pertaining to geology, soils, and paleontological resources. This section is based, in part, on the Paleontological Resources Memorandum included as Appendix G.

As discussed further in Section 3.5.3, Methodology, the CEQA Guidelines Appendix G checklist questions related to geology and soils (i.e., rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, landslides, soil erosion, unstable geologic unit, expansive soils, septic tanks) were found to have no impact or a less than significant impact in the Initial Study prepared for the Master Plan Update, and thus, are not discussed in detail in this EIR.

No comments related to geology, soils, and paleontological resources were received in response to the NOP. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.5.1 Regulatory Setting

State

California Public Resources Code Section 5097.5

California Public Resources Code Section 5097.5 defines and details the unauthorized disturbance or removal of archaeological, paleontological, or historical resources located on public lands which is considered a misdemeanor violation:[1]

> "A person shall not knowingly and willfully excavate upon, or remove, destroy, injure, or deface, any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over the lands."

3.5.2 Environmental Setting

Of the 11 geomorphic provinces of California, the CSULB main campus and Beachside Village property are located along the western flank of the Peninsular Ranges geomorphic province, distinguished by northwest-trending mountain ranges and valleys following the branching San Andreas fault. Dominated by Peninsular Ranges batholith, this geomorphic province also includes physiogeographic features such as the Los Angeles Basin, the southern members of the Channel Islands, and the continental shelf.

The CSULB main campus and Beachside Village property are within the southwestern block of the actively subsiding Los Angeles Basin. This basin is bound by the Santa Monica and San Gabriel Mountains to the north, the Pacific Ocean to the west, the Santa Ana Mountains to the east, and partially by the San Joaquin Hills to the southeast.

[1] California Public Resources Code, Chapter 1.7, Section 5097.5.

The mapped geological units at the surface of the CSULB main campus and immediately adjacent areas include young alluvial deposits (Qya_2) of Holocene to late Pleistocene age (present to 126,000 years old). At unknown depths beneath these deposits, old shallow marine deposits (Qom) of late to middle Pleistocene age (126,000 to 774,000 years old) underlie the CSULB campus and immediately adjacent areas. Although young alluvial deposits of this region can be as young as Holocene in age, a period that overlaps with archaeological concern, these sediments can also range as old as late Pleistocene in age and possibly contain significant fossil resources. Old shallow marine deposits (Qom) of late to middle Pleistocene age (126,000 to 774,000 years old) have also been mapped at the surface of the Beachside Village property, and generally south of Bouton Creek of the CSULB main campus. Sedimentary deposits of Pleistocene age in southern California can possibly contain significant fossil resources. According to the Society of Vertebrate Paleontology's (SVP) *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*, the rock formations present within the CSULB campus are considered to have a high paleontological sensitivity. The geologic units are mapped in Figure 3.5-1.

Stratigraphic cross-sections from previous scientific excavations on the CSULB main campus identified undisturbed paleosols (i.e., distinct buried soil deposits or strata) at a minimum depth of approximately 5 feet; however, a variability of the depth of undisturbed paleosols in the stratigraphic cross-sections across campus was observed which suggests undisturbed paleosols could be found at a shallower depth. Geotechnical reports previously prepared for projects on campus have also discovered through coring efforts that artificial fill lies immediately at the surface of the main campus and that native sedimentary layers can be found at varying depths of excavation. Most geotechnical efforts encountered subsurface exposures of native sedimentary layers between 4 and 6 feet below surface. Geologic formations of similar ages in nearby portions of the Los Angeles Basin (e.g., Palos Verdes Sand and San Pedro Sand) contain numerous marine and terrestrial fossils, including bones, teeth, shells, plant material, and microscopic organisms. Additional examples of vertebrate fossils from these geologic formations include fishes, birds, cetaceans (whales and dolphins), carnivores, rodents, ungulates (hooved mammals), proboscideans (e.g., elephants and mammoths), turtles, and frogs.

Previous archaeological work has demonstrated relatively uniform stratigraphy across most of the CSULB main campus north of Bouton Creek, with the top four rock layers (strata) consisting of fill deposit, a culturally sterile alluvial layer deposited by flooding of Bouton Creek, a single major flood deposit, and an archaeological layer. Based on reviews of previous geotechnical and archaeological studies conducted on campus, it is likely that the fifth stratum contains native sedimentary layers, which have a potential for paleontological resources, typically between 4 and 6 feet below surface.

Archival Research

A paleontological records search was conducted for the CSULB campus with the Natural History Museum of Los Angeles County (NHMLA) on March 15, 2022. Although no previously identified fossil localities exist within the CSULB main campus and Beachside Village property, ten fossil localities from similar sedimentary deposits as those found within the CSULB main campus occur within 4 miles of the campus, and an additional one locality was identified at an unknown distance from the campus, either at the surface or at the depth listed in Table 3.5-1. The NHMLA paleontological records search was supplemented with additional paleontological database searches using the University of California Museum of Paleontology Locality Search, San Diego Natural History Museum Collection Database, and the Paleobiology Database, as well as a review of scientific literature.

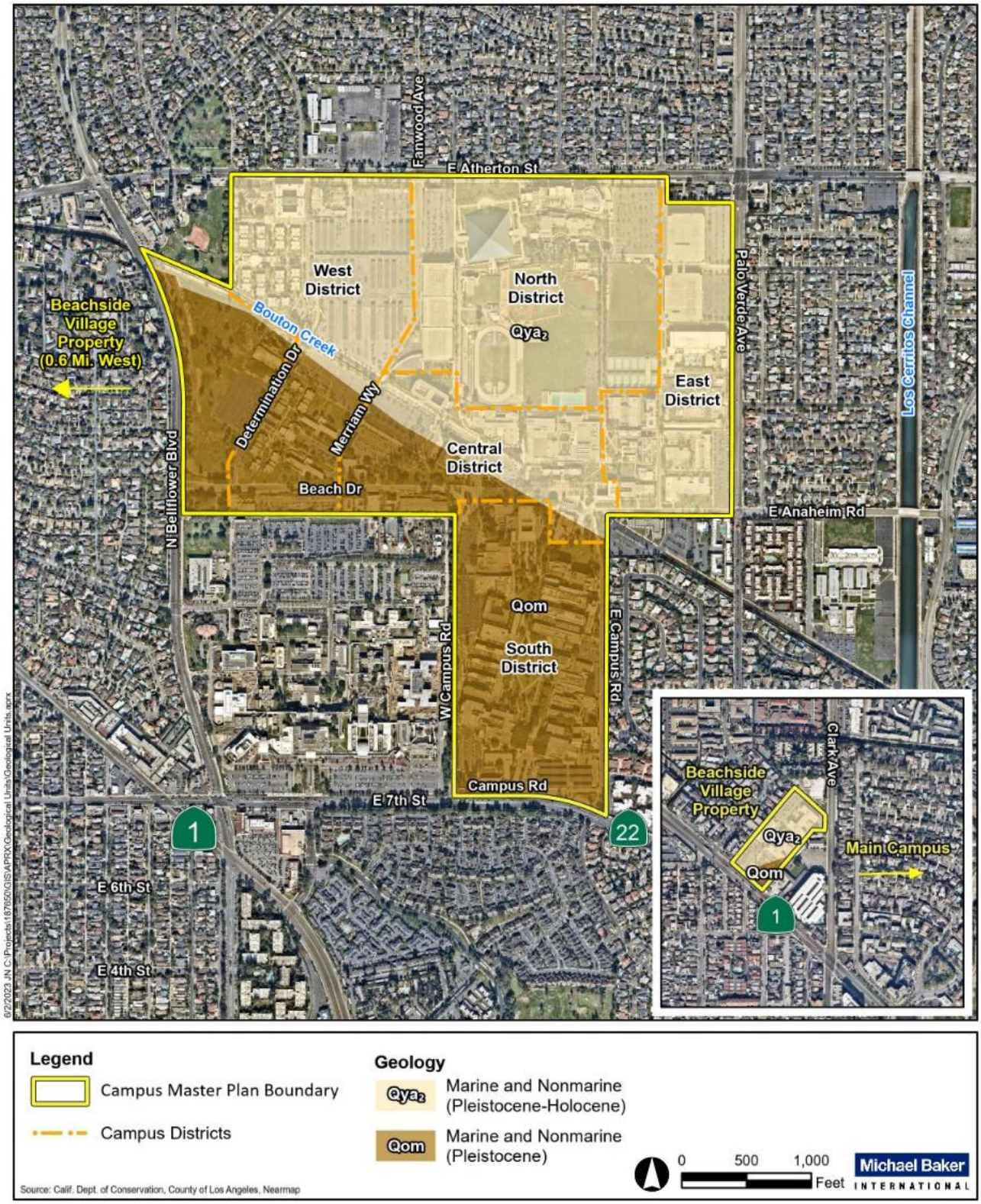

Figure 3.5-1: Campus Districts Overlaid on Geological Map

Table 3.5-1: Previously Recorded Paleontological Resources

Collection Number	Taxa	Formation	Intervals	Distance to CSULB Main Campus
LACM IP 4737, 4854, 4865, 4568	Invertebrates: decapods (crabs, lobsters, shrimp, etc.), sand dollars, gastropods (snails), bivalves (clams, oysters, mussels, etc.), trace fossils	Palos Verdes Sand	Pleistocene	Within 1 Mile
LACM IP 339, 2686	Invertebrates: limpets, gastropods (snails), clams, oysters	Unknown	Pleistocene	Within 2 Miles
LACM VP 7493	Vertebrates: camels	Lakewood Formation	Pleistocene	Within 2 Miles
LACM VP 7739	Invertebrates: snails, clams, barnacles, crabs, urchins, tusk shells Vertebrates: sharks, eels, croakers, flounders, guitarfish, toadfish, perch, rays, flatfish, sole, skates, barracudas	Coastal deposits	Late Pleistocene	Within 3 Miles
LACM VP 3660	Vertebrates: mammoths	Unknown	Pleistocene	Within 4 Miles
LACM VP 3260	Vertebrates: bison	Unknown	Pleistocene	Unknown
UCMP	Unspecified	Palos Verdes Sand	Pleistocene	Within 3 Miles
PBDB	Snails, scallops, clams, oysters, tusk shells, barnacles, crabs, sand dollars, polychaete worms	Palos Verdes Sand	Pleistocene	Within 3 Miles
PBDB	Scallops, snails, clams	San Pedro	Early Pleistocene	Within 3 Miles
PBDB	Sharks, rays, bony fish, clams	Unknown	Late Pleistocene	Within 3 Miles

Notes: IP = Invertebrate Paleontology; PBDB = Paleobiology Database; UCMP = University of California Museum of Paleontology; VP = Vertebrate Paleontology
Sources: Refer to Appendix Appendix G, Paleontological Resources Memorandum; University of California Museum of Paleontology, 2022, Locality search, available at: https://ucmpdb.berkeley.edu/loc.html, accessed May 2022; Paleobiology Database, 2022, Web-based mapping interface in 3-miles of project area, available at: https://paleobiodb.org/navigator/, accessed May 2022.

Fossil-bearing units from the same sedimentary deposits as those found within the project site have been identified within a mile of the campus. Previous paleontological resources described in the scientific literature have been identified from similar sediments to those found underlying the CSULB main campus. Gastropod, bivalve, scaphopod, crustacean, and foraminifer fossils collected from Signal Hill, less than 3 miles northeast of the CSULB main campus, and Long Beach City College, approximately 3 miles north of the CSULB main campus, indicate Pleistocene sediments in this region were deposited in cool, shallow waters. Pleistocene marine deposits from other regions within Long Beach and the nearby Palos Verdes Peninsula have further yielded marine and terrestrial mammals, seabirds, reptiles, and fish. Therefore, due to the fossil sensitivity of the rock formations present within the campus (alluvium of Holocene to late Pleistocene age

and shallow marine deposits of late to middle Pleistocene age), fossil-bearing units have the potential to be present in the project area.

3.5.3 Methodology

The evaluation of impacts related to paleontological resources was based on the Paleontological Resources Memorandum included as Appendix G. A thorough review of geological units, results from the NHMLA records search and supplemental paleontological databases, related background reports and literature for the project area, and previous geotechnical reports for other projects at CSULB was conducted by a paleontologist meeting the SVP standards. Information from these sources were reviewed and compared to the mitigation impact guidelines set forth by the SVP to determine the level of significance for paleontological impacts associated with the implementation of the Master Plan Update.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to geology, soils, and paleontological resources are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to geology and soils if it would:

- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Issues Not Evaluated Further

The Master Plan Update would not result in significant impacts related to the following Appendix G checklist questions, as determined in the Initial Study (Appendix A), and therefore are not evaluated further in this Draft EIR.

- *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:*
    - *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.*

      The CSULB campus is not located within a state-designated Alquist-Priolo Fault Hazard Zone.[2] The nearest Alquist-Priolo Fault Hazard Zone is the Newport-Inglewood fault, located approximately 0.6 miles and 0.1 miles southwest of the main campus and the Beachside Village student housing complex, respectively. Additionally, the Los Alamitos fault is located approximately 1.5 miles and 2.3 miles north of the main campus and the Beachside Village student housing complex, respectively.[3] However, no active faults are known to cross the CSULB campus. The Master Plan Update would involve proposed improvements to campus facilities, including renovation, replacement, and new construction. The Master Plan Update also identifies goals and strategies to improve open space, sustainability and resiliency, and mobility and parking. The CSU Seismic Requirements, prepared by the Office of the Chancellor, include specific requirements for the construction of new

[2] California Geological Survey, Earthquake Zones of Required Investigation Data Viewer, Search by Location, available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed February 16, 2022.

[3] Ibid.

buildings and the renovation of existing buildings.[4] All habitable structures would be designed and constructed in accordance with the latest version of the relevant building codes and all other applicable federal, state, and local codes relative to seismic criteria pursuant to the CSU Seismic Requirements. These building codes are designed to ensure safe construction. Compliance with existing regulations and adherence to the CSU Seismic Requirements would ensure that impacts related to fault rupture would be less than significant.

- *Strong seismic ground shaking?*

  The campus is located in a seismically active area, as is most of southern California, and is subject to strong seismic ground shaking. However, all improvements implemented under the Master Plan Update would be designed and constructed in accordance with the latest version of the relevant building codes and all other applicable federal, state, and local codes relative to seismic criteria pursuant to the CSU Seismic Requirements. Compliance with existing regulations and adherence to the CSU Seismic Requirements would ensure a less than significant impact related to strong seismic ground shaking.

- *Seismic-related ground failure, including liquefaction?*

  The northeastern section of the CSULB main campus is located within an area identified as being susceptible to liquefaction.[5] All improvements implemented under the Master Plan Update would be designed and constructed pursuant to the CSU Seismic Requirements. Per the CSU Seismic Requirements, site-specific geotechnical investigations are required for any new development on the campus to assess and classify the subsurface conditions at the site. Geotechnical investigations conducted for any future development or renovations proposed by the Master Plan Update are required to include consideration of all seismically induced site failure hazards, including liquefaction, differential settlement, lateral spreading, landslides, and surface faulting.[6] Additionally, the CSU has determined campus-specific seismic design ground motion parameters to be used for new and modification of existing buildings, which supersede those in the California Building Code.[7] Compliance with existing regulations and adherence to the CSU Seismic Requirements would ensure a less than significant impact related to liquefaction.

- *Landslides?*

  The CSULB campus is not located in an area identified as being susceptible to landslides.[8] Therefore, no impact related to landslide would occur.

- *Would the project result in substantial soil erosion or the loss of topsoil?*

  Construction of the projects developed under the Master Plan Update would include ground-disturbing activities, such as grading and excavation, which could result in the potential for erosion to occur at the individual development sites. Per the CSU

4 The California State University, Office of the Chancellor, March 2020, *CSU Seismic Requirements*.
5 California Geological Survey, Earthquake Zones of Required Investigation Data Viewer, Search by Location, available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed February 16, 2022.
6 The California State University, Office of the Chancellor, *CSU Seismic Requirements*, March 2020.
7 Ibid.
8 California Geological Survey, Earthquake Zones of Required Investigation Data Viewer, Search by Location, available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed February 16, 2022.

standards set forth in PolicyStat, all development projects on the CSULB campus are required to implement standard temporary construction controls for erosion and sediment control, including, but not limited to: trapping sediments before they leave the site using such techniques as check dams, sediment ponds, or siltation fences; preventing runoff from flowing over unprotected slopes; stabilizing disturbed areas; and removing mud from tires of each moving equipment.[9] Additionally, any proposed improvements that would disturb more than one acre of land would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) stipulating erosion control measures in compliance with the latest National Pollutant Discharge Elimination System (NPDES) permit requirements for storm water discharges. Compliance with existing regulations and adherence to the CSU standards for erosion control would ensure a less than significant impact.

- *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

  All improvements implemented under the Master Plan Update would be designed and constructed pursuant to the CSU Seismic Requirements, including the preparation of site-specific geotechnical investigations to assess and classify the subsurface conditions at individual development sites. Geotechnical investigations conducted for any future development or renovations proposed by the Master Plan Update are required to include consideration of all seismically induced site failure hazards, including liquefaction, differential settlement, lateral spreading, landslides, and surface faulting. Compliance with existing regulations and adherence to the CSU Seismic Requirements would ensure a less than significant impact related to unstable geologic units or soils.

- *Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?*

  Expansive soils are clay-based soils that tend to expand (increase in volume) as they absorb water and shrink (lessen in volume) as water is drawn away. If soils consist of expansive clays, foundation movement and/or damage can occur if wetting and drying of the clay does not occur uniformly across the entire area. The geologic materials underlying the CSULB campus include marine deposits consisting of dense silty sand and gravel, and soft sands and silts mixed with some clay, which are not highly susceptible to expansion. Additionally, as previously discussed, all improvements implemented under the Master Plan Update would be designed and constructed pursuant to the CSU Seismic Requirements, and would include preparation of site-specific geotechnical investigations to assess and classify the subsurface conditions at individual development sites as well as sites that have near-surface fine-grained materials with moderate to high expansion potential. Compliance with existing regulations and adherence to the CSU Seismic Requirements would ensure a less than significant impact related to expansive soils.

[9] The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9235, Construction Document Phase of Project Development, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-83nrq, accessed February 15, 2022.

- *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

  The CSULB campus is served by existing sewer infrastructure. No septic tanks or alternative wastewater disposal systems are included as part of the Master Plan Update. Therefore, no impact associated with the use of such systems would occur.

3.5.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below is organized to separately address renovation projects, which involve renovation of existing facilities and additions to existing facilities; replacement projects, which involve demolition and replacement of existing facilities in the same physical location; and new projects, which involve construction of new facilities with new uses.

GEO-1 Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Program-Level Analysis for Master Plan Update

Construction

As discussed in Section 3.5.2, Environmental Setting, there are no documented fossil localities within the CSULB main campus or Beachside Village property. However, fossil-bearing units from the same sedimentary deposits as those found within the CSULB main campus and Beachside Village property (alluvium of Holocene to late Pleistocene age and shallow marine deposits of late to middle Pleistocene age) have been identified within a few miles of the campus. In addition, undisturbed paleosols on campus have been previously identified at a depth of approximately 4 to 6 feet. Therefore, proposed development under the Master Plan Update has a high potential to disturb paleontological resources within undisturbed alluvium (older than 5,000 years) and geologic contexts (i.e., undisturbed bedrock or subsurface geologic deposits in previously undisturbed areas). As such, discoveries of yet unknown paleontological resources during ground-disturbing activities in undisturbed geologic contexts (i.e., undisturbed bedrock or subsurface geologic deposits in previously undisturbed areas) associated with the proposed Master Plan Update could still occur with the potential to directly or indirectly destroy the paleontological resource. A significant impact to paleontological resources could result if an inadvertent discovery is made during ground-disturbing activities for development projects associated with the Master Plan Update.

During construction of the improvements associated with the Master Plan Update, ground-disturbing activities would occur throughout various locations on the CSULB campus. Ground disturbance refers to activities that would impact subsurface geologic deposits, such as grading, excavation, boring, drilling, and trenching, including for utilities. All improvements implemented pursuant to the Master Plan Update would be designed and constructed pursuant to the CSU Seismic Requirements. Per the CSU Seismic Requirements, site-specific surface conditions are to be determined for the building/facility site by a geotechnical engineer as part of a project's development. This could include geotechnical investigations for development on the campus that would involve expanded footprints or deeper foundations. However, due to the fossil

sensitivity of the rock formations present within the CSULB campus, construction of the individual development projects associated with implementation of the Master Plan Update may result in significant impacts to paleontological resources. Thus, implementation of Mitigation Measures GEO-A through GEO-D may be required. If a project would require ground-disturbing activities at depths of 4 feet or greater, Mitigation Measure GEO-A would be required. Mitigation Measure GEO-A would require CSULB to retain an SVP-qualified paleontologist to review the proposed scope of work for a project requiring ground-disturbing activities at depths 4 feet below existing grade or greater in undisturbed geologic contexts, including excavation plans and geotechnical studies or borings, to determine if project excavations have the potential to impact paleontological resources. If the qualified paleontologist determines that a project would not impact paleontological resources, then no further work is necessary. However, if the qualified paleontologist determines that the proposed scope of work is found to not meet the SVP Standards or the geotechnical investigation identifies medium- to high-potential to encounter undisturbed geologic contexts, the qualified paleontologist, in consultation with CSULB, shall include recommendations for the project, including paleontological monitoring in accordance with Mitigation Measure GEO-B and worker environmental awareness training in accordance with Mitigation Measure GEO-D.

Mitigation Measure GEO-B would include paleontological monitoring and provides directions for full- or part-time monitoring, provides guidance in the event fossils are discovered, including redirecting work and assessing the significance of the find. If the qualified paleontologist determines that the find is significant in accordance with SVP standards, then Mitigation Measure GEO-C would apply. If any find is determined not to be significant, then work could proceed.

If the fossils are determined to be significant, then Mitigation Measure GEO-C would require an SVP-qualified paleontologist to prepare and implement a data recovery plan that includes cleaning, identifying, cataloging, and curating significant finds. The data recovery plan would include a report and a letter of acceptance from the curation institution.

Mitigation Measure GEO-D would require, at the discretion of the qualified paleontologist, that a worker environmental awareness training providing paleontological sensitivity training be given to the construction crew associated with ground-disturbing activities prior to the beginning of construction that could be administered along with other environmental awareness programs for the same project. Mitigation Measures GEO-A through GEO-D are designed to identify and protect fossils during construction. Therefore, with implementation of Mitigation Measure GEO-A through GEO-D, impacts would be reduced to less than significant.

Operation

Following construction for all improvements implemented pursuant to the Master Plan Update, no additional ground disturbance would occur in undisturbed geologic contexts which would have the potential to impact unknown, buried paleontological resources. As such, operation of the Master Plan Update would have no impact on paleontological resources.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. As previously discussed, there are no documented fossil localities within the CSULB campus; however, fossil-bearing units from the same sedimentary deposits as those found within the CSULB main campus and Beachside Village property have been identified

within a few miles of the campus. In addition, undisturbed paleosols have been previously identified at a depth of approximately 4 to 6 feet on campus. Therefore, proposed development under the Master Plan Update has high potential to disturb paleontological resources within undisturbed alluvium and geologic contexts.

Thus, construction activities for proposed near and mid-term development projects that include ground disturbance such as grading, excavation, boring, drilling, and trenching, including for utilities, at depths 4 feet below existing grade or greater in undisturbed geologic contexts (i.e., undisturbed bedrock or subsurface geologic deposits in previously undisturbed areas) would have the potential to disturb unknown paleontological resources.

The following near- and mid-term projects would require only interior renovations with no ground-disturbing activities, and therefore have no potential to disturb unknown paleontological resources: Lecture Hall 150-151 Renovation, Fine Arts 1/2 Renovation, Fine Arts 4 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Nursing Building Renovation, and Engineering Tech Renovation. Additionally, the Baseball Field Conversion to Multi-Use Field, Central Plant Decarbonization, and Relocated Archery Field would not require ground-disturbing activities greater than 4 feet in depth. Therefore, no impacts to paleontological resources would occur as the result of construction of these near- and mid-term projects.

While some projects are located on developed areas with previous ground disturbance and likely contain artificial fill, it is assumed that projects that may require excavation for foundations that may reach undisturbed geologic contexts include the replacement projects (Engineering Replacement Building and New Parkside Housing Village), new projects (Faculty and Staff Housing, New 7th St. Community Outreach Facility), and renovation projects that include additions and/or renovations to the exterior of existing facilities (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Liberal Arts 5 Renovation, Student Health Services Addition, Corporation Yard Renovations, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, University Music Center Renovation/Addition, and Redefining the Campus Quad).

All improvements implemented pursuant to the Master Plan Update would be designed and constructed pursuant to the CSU Seismic Requirements. Per the CSU Seismic Requirements, site-specific surface conditions are to be determined for the building/facility site by a geotechnical engineer as part of a project's development. This could include geotechnical investigations for development on the campus that would involve expanded footprints or deeper foundations. However, due to the fossil sensitivity of the rock formations present within the CSULB campus, construction of replacement, new, and renovation projects discussed above may result in significant impacts to paleontological resources.

Thus, implementation of Mitigation Measures GEO-A through GEO-D, as discussed under the program-level analysis, may be required. If a project would require ground-disturbing activities at depths of 4 feet or greater, Mitigation Measure GEO-A would be required, which would require CSULB to retain an SVP-qualified paleontologist to review the proposed scope of work for a project to determine if project excavations have the potential to impact paleontological resources. If the qualified paleontologist determines that a project would not impact paleontological resources, then no further work is necessary. However, if the qualified paleontologist determines that the proposed scope of work is found to not meet the SVP Standards or the geotechnical

investigation identifies medium- to high-potential to encounter undisturbed geologic contexts, the qualified paleontologist, in consultation with CSULB, shall include recommendations for the project, including paleontological monitoring in accordance with Mitigation Measure GEO-B and worker environmental awareness training in accordance with Mitigation Measure GEO-D.

During the course of paleontological monitoring under Mitigation Measure GEO-B, if the qualified paleontologist determines that a find is significant in accordance with SVP standards, then Mitigation Measure GEO-C would apply. If a find is determined not to be significant, then work could proceed and no further mitigation would be required.

Mitigation Measures GEO-A through GEO-D are designed to identify and protect fossils during construction. Therefore, with implementation of Mitigation Measure GEO-A through GEO-D, direct and indirect impacts to paleontological resources would be reduced to less than significant.

Operation

Following construction for all improvements implemented pursuant to the Master Plan Update, no additional ground disturbance would occur into undisturbed geologic contexts which would have the potential to impact unknown, buried paleontological resources. As such, no impacts associated with operation of the Master Plan Update would occur.

3.5.5 Mitigation Measures

The following mitigation measures would be required to reduce impacts related to paleontological resources during construction of development projects requiring ground-disturbing activities in undisturbed geologic contexts (i.e., undisturbed bedrock or subsurface geologic deposits in previously undisturbed areas).

GEO-A Prior to the commencement of any ground-disturbing activities that would impact native soils (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) at a depth of 4 feet or greater below ground surface, CSULB shall consult with an SVP-qualified paleontologist.

The qualified paleontologist shall review:

- The proposed scope of work;
- Excavation plans against the data and the analysis in the Paleontological Resources Memorandum; and
- Any available geotechnical studies or boring logs.

The paleontologist shall determine to what level the proposed project excavations have the potential to impact paleontological resources. Any geotechnical boring, potholing, or other project-specific exploratory ground disturbance shall be monitored at the qualified paleontologist's discretion.

If the paleontologist determines that the project will not impact paleontological resources:

- Mitigation Measures GEO-B and GEO-C shall not apply.

If the paleontologist determines the proposed scope of work is found to not meet the SVP Standards or the geotechnical investigation identifies medium- to high-potential to encounter undisturbed geologic contexts, the qualified paleontologist, in consultation with CSULB, shall include recommendations for the project.

Recommendations can include:

- Paleontological monitoring by a qualified paleontologist in accordance with Mitigation Measure GEO-B; and
- Worker environmental awareness training in accordance with Mitigation Measure GEO-D.

GEO-B As determined by the SVP-qualified paleontologist in consultation with CSULB, paleontological monitoring shall be required for the following types of projects:

- Found not to meet the SVP Standards;
- The geotechnical investigation identifies medium- to high-potential to encounter undisturbed geologic contexts; or
- Ground-disturbing construction activities (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) into native Pleistocene-age soil and bedrock at a depth of 4 feet or greater below ground surface are required.

At the discretion of the qualified paleontologist, the level of monitoring may range from full-time or part-time (spot-check), based on the qualified paleontologist's review of plans and relevant documentation as well as on-site observations.

- If no significant fossils are recovered after 50 percent of ground-disturbing activities has been completed, full-time monitoring may be modified to weekly spot-check monitoring.
- If it is determined during the course of ground-disturbing activities that project excavations are located within fill or previously disturbed soils, or that the sensitivity for significant paleontological resources is otherwise low, monitoring may be reduced or suspended.
- The determination to reduce or discontinue paleontological monitoring in the project area shall be based on the professional opinion of the qualified paleontologist regarding the potential for fossils to be present after a reasonable extent of the geology and stratigraphy has been evaluated.

The qualified paleontologist shall attend preconstruction meetings, as deemed necessary by the paleontologist in consultation with CSULB, and manage the paleontological monitor(s) if the qualified paleontologist is not doing the monitoring. The paleontological monitor shall maintain logs and provide a final summary report of all ground-disturbing activities monitored with the potential to disturb paleontological resources.

In the event that fossils are discovered during grading at any depth, the following shall be required:

- The on-site construction supervisor shall be notified immediately and shall redirect work away from the location of the discovery.
- The contractor shall notify CSULB and consult with the qualified paleontologist to assess the significance of the find in accordance with SVP Standards.

If any find is determined to be significant, appropriate avoidance measures recommended by the qualified paleontologist and approved by CSULB shall be followed. If avoidance is unnecessary or infeasible, then Mitigation Measure GEO-C shall be implemented. The recommendations of the paleontologist shall be implemented with respect to the evaluation and recovery of fossils, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery.

If any find is determined not to be significant, then work shall proceed, and Mitigation Measure GEO-C would not apply.

GEO-C If the fossils are determined to be significant, then the SVP-qualified paleontologist shall prepare and implement a data recovery plan. The plan shall generally detail the nature and purpose of the paleontological investigation.

The plan shall:

- Incorporate resource context;
- Incorporate appropriate field methods for data collection depending on the type of fossils found; and
- Detail how the fossils will be prepared, cleaned, identified, catalogued, temporarily housed, and permanently curated with an appropriate institution with a research interest in the materials (which may include the Natural History Museum of Los Angeles County).

The qualified paleontologist shall ensure that curation of fossils is completed in consultation with CSULB. A letter of acceptance from the curation institution shall be submitted to CSULB.

Ground-disturbing construction activities may commence once excavations are completed in accordance with the data recovery plan and to the satisfaction of CSULB in consultation with the qualified paleontologist. However, the data recovery work shall not be considered complete until excavations and associated analyses are completed and a final report is prepared. The report shall be completed and presented to CSULB for comment within 18 months of the completion of excavations.

GEO-D As determined by the SVP-qualified paleontologist in consultation with CSULB, and prior to the beginning of ground-disturbing activities (including, but not limited to grading, boring, excavating, digging, trenching, rig anchor installation, drilling, tunneling, auguring, and blasting) by the construction crew, the construction crew associated with ground-disturbing activities shall be informed on how to identify paleontological localities, such as fossils, and of the regulatory protections afforded

those resources. The crew shall also be informed of procedures relating to the discovery of unanticipated paleontological resources. The crew shall be cautioned not to collect fossils, and directed to inform a construction supervisor and the on-site paleontological monitor, if available, in the event that paleontological resources are discovered during the course of construction.

The initial training shall be conducted by the on-site paleontological monitor and can be incorporated into the project's construction safety training. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities prior to their commencement of ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording.

3.5.6 Level of Significance After Mitigation

Mitigation Measures GEO-A through GEO-D would require initial project review of the proposed scope of work and recommendations for individual development projects by an SVP-qualified paleontologist, paleontological monitoring, implementation of a data recovery plan in the event of a discovery of any paleontological resources, and paleontological sensitivity training. These mitigation measures would minimize or avoid potential direct or indirect impacts to a unique paleontological resource, site, or unique geologic feature. Impacts would be less than significant.

3.5.7 Cumulative Impacts

The development projects associated with the Master Plan Update, in combination with other projects requiring ground-disturbing activities in the region with the same sedimentary deposits, could result in a cumulative loss of paleontological resources which are finite. Implementation of the Master Plan Update would result in less than significant impacts with the implementation of Mitigation Measures GEO-A through GEO-D. Through paleontological monitoring and the recovery of fossil remains, impacts to paleontological resources would not be cumulatively considerable. Cumulative impacts would be less than significant.

3.6 GREENHOUSE GAS EMISSIONS

This section presents an analysis of the greenhouse gas (GHG) emissions impacts associated with implementation of the Master Plan Update. This section estimates GHG emissions resulting from short-term construction and long-term operational activities of the Master Plan Update; assesses the project's consistency with applicable regulations to reduce GHG emissions; and describes potential direct and indirect impacts from implementation of the Master Plan Update. This section is based, in part, on the Air Quality and Greenhouse Gas Emissions Calculations included as Appendix C.

Comments from the South Coast Air Quality Management District (SCAQMD) related to GHG emissions were received during the public scoping period in response to the NOP. These comments provide recommendations for air quality and greenhouse gas emission modeling methodology, including for construction and operation. For a complete list of public comments received during the public scoping period, refer to Appendix A.

For analysis of Master Plan Update-related energy consumption, refer to Section 3.13, Utilities and Energy, of this Draft EIR.

Greenhouse Gas Emissions Overview

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code § 38505(g), for purposes of administering many of the state's primary GHG emissions reduction 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 (see also California Code of Regulations Title 14, § 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are the predominant GHGs emitted as the result of 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.[2,3,4]

GHGs are further discussed below in Section 3.6.2, Environmental Setting.

3.6.1 Regulatory Setting

Federal

Energy Independence and Security Act of 2007

To aid in the reduction of GHG emissions nationwide, the Energy Independence and Security Act of 2007 set a mandatory Renewable Fuel Standard for biofuels to be produced; directed the National Highway Traffic Safety Administration (NHTSA) to establish fuel economy programs and standards for vehicles; and prescribed or revised standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy

1 Climate-forcing substances include GHGs and other substances such as black carbon and aerosols.
2 Intergovernmental Panel on Climate Change, 2007, Fourth Assessment Report, available at: https://www.ipcc.ch/assessment-report/ar4/, accessed April 4, 2023.
3 California Air Resources Board, Glossary of Terms Used in GHG Inventories, available at: https://ww2.arb.ca.gov/ghg-inventory-glossary, accessed April 4, 2023.
4 U.S. Environmental Protection Agency, Climate Change, available at: https://www.epa.gov/climate-change, accessed April 4, 2023.

conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Clean Air Act and Vehicle Standards

In response to the Massachusetts v. U.S. Environmental Protection Agency (EPA) U.S. Supreme Court ruling which directed the EPA 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, the George W. Bush Administration issued Executive Order 13432 in 2007 directing the 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.

In 2009, the EPA found that elevated concentrations of GHGs in the atmosphere threaten the public health and welfare of current and future generations and that the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. These two findings were necessary to establish the foundation for federal regulation of GHGs from new motor vehicles as air pollutants under Section 202(a) of the Clean Air Act (42 USC § 7401).

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, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for light-duty vehicles. However, in 2018 (during the administration of President Trump), the EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks. Compared to maintaining the post-2020 standards then in place, the 2018 proposal increased U.S. fuel consumption by about half a million barrels per day (2 to 3 percent of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100.

In 2019, the EPA and NHTSA published the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program (84 FR 51310), which revoked California's authority to set its own GHG emissions standards and set zero-emission vehicle (ZEV) mandates in California. The EPA and NHTSA subsequently issued the Part Two Rule in March 2020, which set less aggressive CO_2 emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks. In 2021, President Joe Biden issued Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which called for review of both parts of the SAFE Vehicles Rule. The NHTSA concluded that the SAFE Rule overstepped the agency's legal authority and established overly broad prohibitions that did not account for a variety of important state and local interests. The final rule adopted by the NHTSA ensures that the SAFE Rule will no longer form an improper barrier to states exploring creative solutions to address their local communities' environmental and public health challenges.

Additionally, in 2021, the EPA finalized its revisions to the federal GHG emissions standards for passenger cars and light-duty trucks. These standards have been described as the "strongest vehicle emissions standards ever established for the light-duty vehicle sector" and are expected

to result in the avoidance of more than 3 billion tons of GHG emissions through 2050.[5] At the same time, the EPA also announced its intent to initiate a separate rulemaking to establish multi-pollutant emissions standards to transition the federal government's passenger vehicle fleet to a zero-emissions fleet consistent with Executive Order 14057, which sets a path for reducing GHG emissions across federal operations, investing in clean energy industries and manufacturing, and creating clean, healthy, and resilient communities to achieve carbon neutrality by 2050.

State

State Climate Change Targets

Executive Order S-3-05

Executive Order S-3-05 (June 2005) set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced: the state would reduce GHG emissions to 2000 levels by 2010; reduce GHG emissions to 1990 levels by 2020; and ultimately reduce GHG emissions to 80 percent below 1990 levels by 2050. The Executive Order directed the California Environmental Protection Agency (CalEPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels and submit annual report cards to the governor and California State legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts.

To comply with the Executive Order, CalEPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team releases annual Climate Action Team Report Cards tracking the GHG emission reduction strategies progress by documenting the effectiveness of the measures implemented to reduce GHG emissions in California and from each of the state agencies' operations.[6] The GHG reduction targets are achieved by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Assembly Bill 32

California passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32; California Health and Safety Code Division 25.5, §§ 38500-38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 specifies that the state's agency for air quality and climate change, California Air Resource Board (CARB), must adopt regulations to "achieve the maximum technologically feasible and cost-effective GHG emission reductions" to "help mitigate risks associated with climate change while improving energy efficiency, expanding the use of renewable energy resources, cleaner transportation and reducing waste."7 The 2020 goal was ultimately reached four years ahead of schedule in 2016.

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5 U.S. Environmental Protection Agency*, Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026,* available at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions, accessed April 4, 2023.

6 California Environmental Protection Agency, 2023., Climate Action, available at: https://calepa.ca.gov/climate-action/, accessed April 12, 2023.

7 California Air Resources Board, 2023, AB 32 Global Warming Solutions Act of 2006, https://ww2.arb.ca.gov/resources/fact-sheets/ab-32-global-warming-solutions-act-2006, accessed April 12, 2023.

The Cap-and-Trade program is a key regulation that complements other regulations to ensure that California cost-effectively meets its goals for GHG emissions reductions. The program establishes a declining limit on major sources of GHG emissions throughout California and creates an economic incentive for investment in cleaner, more efficient technologies.[8]

Senate Bill 605 and Senate Bill 1383

Senate Bill (SB) 605 (2014) required CARB to complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCPs) in the state (California Health and Safety Code § 39730). SB 1383 (2016) required CARB to approve and implement that strategy by January 1, 2018 (California Public Resources Code § 42652-43654). SB 1383 established 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. Accordingly, 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.

Executive Order B-30-15

Executive Order B-30-15 (April 2015) added an interim target to reduce statewide GHG emissions 40 percent below 1990 levels by 2030 and required CARB to update the AB 32 Climate Change Scoping Plan (Scoping Plan) to identify measures to meet the 2030 target.

Senate Bill 32 and Assembly Bill 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions-reduction goal of Executive Order 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 for implementation of the state's climate policies. AB 197 also requires CARB to make available and update (at least annually) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emission-reduction measures when updating the Scoping Plan.

Executive Order B-55-18

Executive Order B-55-18 (September 2018) establishes a new statewide goal to achieve carbon neutrality no later than 2045 and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the state's GHG emissions. CARB will work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bill 1279

The California Climate Crisis Act, AB 1279 (enacted September 2022), establishes the target of: 1) achieving net zero GHG emissions as soon as possible, but no later than 2045, and 2) achieving and maintaining net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below 1990 levels. AB 1279 would require CARB to update the Scoping Plan and work with state agencies to identify

[8] California Air Resources Board, 2023, Cap-and-Trade Program, available at: https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program/about, accessed April 13, 2023.

and implement measures to achieve these policy goals which include solutions for CO_2 removal such as carbon capture, utilization, and storage technologies.

2022 Climate Change Scoping Plan

AB 32 also requires CARB to develop a Scoping Plan, which functions as a roadmap to achieve the California GHG reductions required by AB 32 through subsequently enacted regulations. Updated at least once every five years, CARB's Scoping Plan contains strategies and policies California would implement to reduce the projected 2020 "Business as Usual" (BAU) emissions to 1990 levels, as required by AB 32. Since 2008, there have been three updates to the Scoping Plan. Each update builds upon the previous plan's policies to help the state achieve its GHG emissions reduction targets while leveraging new and existing programs with the primary goal of reducing harmful air pollution. CARB's 2013 Scoping Plan Update summarized the state's progress in reducing GHG emissions, discussed anticipated impacts to California including the levels of GHG reduction necessary to avoid irreparable damage, and recommended strategies focused on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. CARB's 2017 Scoping Plan Update identified the state's post-2020 reduction strategy set by Executive Order B-30-15 and codified by SB 32 to reduce GHG emissions 40 percent below 1990 levels by 2030. The 2017 Scoping Plan Update established a new statewide emissions limit of 260 million metric tons (MMT) carbon dioxide equivalents (CO_2e)[9] for the year 2030, which corresponded to a 40 percent decrease in 1990 levels by that date.

On December 15, 2022, CARB released the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), which identifies the strategies to achieving carbon neutrality by 2045 or earlier. The 2022 Scoping Plan contains strategies that build on existing GHG reductions, technology, and clean energy programs and integrate equity and environmental justice to ensure that vulnerable communities are not disproportionately affected by climate change. The 2022 Scoping Plan was developed to achieve carbon neutrality by 2045 through a substantial reduction in fossil fuel dependence, while at the same time increasing deployment of efficient non-combustion technologies and distribution of clean energy. The plan would also reduce emissions of SLCPs and includes CO_2 capture and sequestration actions from natural and working lands using mechanical and nature-based strategies. Under the 2022 Scoping Plan, by 2045, California aims to cut GHG emissions by 85 percent below 1990 levels, reduce smog-forming air pollution by 71 percent, reduce the demand for liquid petroleum by 94 percent compared to current usage, improve health and welfare, and create millions of new jobs.

Building Energy

Title 24, Part 6 and Part 11

In 1978, the California Energy Commission established the Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as Title 24 or the Energy Code. These California energy efficiency standards for residential and non-residential buildings were written in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and non-residential buildings. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The latest Energy Code is the 2022 Title 24 standards which builds on current technology innovations and encourages energy efficient approaches to encourage

[9] A carbon dioxide equivalent is the number of metric tons of CO_2 emissions with the same global warming potential as one metric ton of another GHG.

building decarbonization. The latest updates include the use of efficient electric heat pumps, establishing electric-ready requirements for new construction, expanding solar photovoltaic and battery storage installation requirements to commercial buildings, and strengthening ventilation standards to help California progress towards 100 percent clean carbon neutrality.

The California Green Building Standards (CALGreen or Part 11 of Title 24) were developed in 2007 by the California Building Standards Commission to meet the targets established by AB 32 as buildings are the second largest source of GHG emissions in California. The California Building Standards Commission works closely with other state agencies to develop green building standards for residential and nonresidential structures that include new buildings or portions of new buildings, additions and alterations to reduce building GHG emissions; promote environmentally responsible, cost-effective, and healthier places to live and work; reduce energy and water consumption, and respond to the latest environmental directives of the administration.[10]

Renewable Energy and Energy Procurement

Renewables Portfolio Standard Program

The California Renewables Portfolio Standard (RPS) program was established in 2002 under SB 1078 (California Public Utilities Code § 399.11 et seq.) and required that by 2017, a retail seller of electricity purchase 20 percent of electricity generated by eligible renewable energy resources (e.g., solar thermal, photovoltaic, wind, biomass, geothermal, hydroelectric, municipal solid waste conversion, ocean/tidal, etc.). The RPS program is jointly implemented by the California Public Utilities Commission and the California Energy Commission.

Executive Order S-14-08 (2008) expanded the RPS to 33 percent renewable power by 2020 and in 2010, CARB adopted regulations for most publicly owned electricity retailers to obtain this target under the direction of Executive Order S-21-09 (2009).

SB 350 (2015) further expanded the RPS program by establishing a goal of 50 percent renewable electricity sold to retail customers in California by 2030. In addition, SB 350 required California to double the energy efficiency savings in electricity and natural gas 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 by 2030.

Most recently, SB 100 (2018) increased the standards set forth in SB 350 and required a 44 percent RPS by 2024, 52 percent RPS by 2027, and 60 percent RPS by 2030. Furthermore, California's electricity is required to be 100 percent carbon free by 2045.[11] This bill requires that the achievement of 100 percent zero-carbon energy resources does not increase carbon emissions elsewhere or be offset through resource shuffling.

Mobile Sources

California Air Resources Board Mobile Source Strategy

On May 16, 2016, CARB released the 2016 Mobile Source Strategy that demonstrates how the state can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risk from transportation emissions, and reduce petroleum consumption over the

[10] California Department of General Services Building Standards Commission, 2021, CALGreen, available at: https://www.dgs.ca.gov/BSC/CALGreen, accessed April 12, 2023.

[11] California Public Utilities Commission, 2021, Renewables Portfolio Standard (RPS) Program, available at: https://www.cpuc.ca.gov/rps/, accessed April 12, 2023.

next fifteen years. The actions contained in the 2016 Mobile Source Strategy aim to deliver broad environmental and public health benefits, as well as support much needed efforts to modernize and upgrade transportation infrastructure, enhance system-wide efficiency and mobility options, and promote clean economic growth in the mobile sector. Implementation of the concepts laid out in the 2016 Mobile Source Strategy would also result in a 45 percent reduction in GHG emissions and a 50 percent reduction in the consumption of petroleum-based fuels.[12]

The 2020 Mobile Source Strategy builds upon the foundation established by the 2016 Mobile Source Strategy and includes a comprehensive strategy for phasing in cleaner medium and heavy-duty vehicles needed to meet mandated air quality standards and 2030 and 2050 climate goals. Though not a regulatory document, the 2020 Mobile Source Strategy, as implemented by the State Implementation Plan, the updated Scoping Plan, community risk reduction plans, state and local incentive programs, and other CARB regulations, would achieve a 76 percent reduction in GHG emissions from 2020 levels from mobile sources by 2045, which is largely attributable to transitioning towards a zero-emissions fleet.[13]

Assembly Bill 1493

AB 1493 (2002) was enacted in response to the transportation sector accounting for more than half of California's CO_2 emissions at the time of its drafting (California Health and Safety Code § 43018.5 and § 42823 amendments). AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles primarily used for non-commercial personal transportation in the state.

Executive Order S-1-07

Executive Order S-1-07 (2007, implementing regulation adopted in 2009) 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 and 20 percent by 2030 (California Code of Regulations, Title 17, § 95480 *et seq*.). The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel per unit of energy delivered which includes extraction/feedstock production, processing, transportation, and final consumption.

Heavy Duty Diesel-Powered Vehicles

The Heavy-Duty Truck and Bus Regulation (2008) requires nearly all diesel-powered trucks and buses to have a 2010 or newer model year engine by January 1, 2023. Exemptions are only given to vehicles traveling less than 1,000 miles per calendar year or to vehicles with a particulate matter filter operating exclusively in designated NOx exempt areas of the state.

CARB also adopted an Airborne Toxic Control Measure (amended 2013) to limit idling of diesel-powered commercial vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than 5 minutes at any location (California Code of Regulations, Title 13, § 2485).

Senate Bill 375

SB 375 (2008) (California Government Code § 65080) addresses GHG emissions associated with

[12] California Air Resources Board, 2016 Mobile Source Strategy, available at: https://ww2.arb.ca.gov/resources/documents/2016-mobile-source-strategy, accessed April 13, 2023.

[13] California Air Resources Board, April 2021, *2020 Mobile Source Strategy Fact Sheet*.

the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG-reduction targets for the automobile and light-truck sector for 2020 and 2035, and to update those targets every 8 years. SB 375 requires the state's 18 regional metropolitan planning organizations (MPOs) to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan that will achieve the GHG-reduction targets set by CARB. Though an SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it, 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.

Executive Order B-16-12

Executive Order B-16-12 (March 2012) required that state entities under the Governor's direction control, support, and facilitate the rapid commercialization of ZEVs. It ordered CARB, California Energy Commission, California Public Utilities Commission, and other relevant agencies to work with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve benchmark goals by 2015, 2020, and 2025. On a statewide basis, Executive Order B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. This directive did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

Advanced Clean Cars Program and Zero-Emission Vehicle Program

CARB's Advanced Clean Cars (ACC) program (2012) is an emission-control program to reduce smog- and soot-causing pollutants and GHG emissions and promote clean fuels for cars. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, adopted new GHG standards estimated to reduce vehicle GHG emissions by 34 percent in 2025.[14] The Zero-Emission Vehicle program is part of the ACC and is designed to achieve the state's long-term emission reduction goals by increasing the requirements for zero-emission vehicles through both increased stringency of ZEV sales and associated actions to support wide-scale adoption and use of zero-emission vehicles. Executive Order B-48-18 (2018) set a target of 5 million ZEVs and 250,000 chargers by 2025.[15]

Executive Order N-79-20 (2020) set a course to end the sale of new internal combustion passenger vehicles by 2035. The primary mechanism to facilitate achievement of this specific target is through the ACC II program. The executive order also sets ZEV penetration targets for medium- and heavy-duty vehicles, drayage trucks, as well as off-road vehicles and equipment.

The ACC II program was adopted in 2022 and establishes the next level of LEV and ZEV requirements for vehicles to meet federal ambient air quality ozone standards and California's carbon neutrality standards. The ACC II regulations take the state's already growing zero-emission vehicle market and robust motor vehicle emission control rules and augments them to meet more aggressive tailpipe emissions standards and ramp up to 100 percent zero-emission vehicles. By 2035 all new passenger cars, trucks and SUVs sold in California will be

[14] California Air Resources Board, 2023, Advanced Clean Cars Program, available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about, accessed April 13, 2023.

[15] California Air Resources Board, 2023, Zero-Emission Vehicle Program, available at: https://ww2.arb.ca.gov/our-work/programs/zero-emission-vehicle-program/about, accessed April 13, 2023.

zero-emission.[16]

CARB also approved the Advanced Clean Trucks Regulation in 2020 which accelerates the market for ZEVs in the medium- and heavy-duty truck sector and to reduce air pollutant emissions generated from on-road mobile sources.[17]

Additionally, CARB approved amendments to the Small Off-Road Engine (SORE) Regulations in 2021, which would require most newly manufactured SORE such as those found in leaf blowers, lawn mowers and other equipment to be zero-emission starting in 2024. Portable generators, including those in recreational vehicles, would be required to meet more stringent standards in 2024 and meet zero-emission standards starting in 2028.

Water

Energy is needed to process, move, and heat water as it is used by consumers. In California, approximately 20 percent of statewide electricity and 20 percent of natural gas is used for water.[18] Thus, water conservation correlates directly with energy savings, ultimately reducing GHG emissions. The following state water conservation regulations support reductions in GHG emissions.

Executive Order B-29-15

In response to the ongoing drought in California, Executive Order 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. Many of the directives have since become permanent water-efficiency standards and requirements. The California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Executive Order B-37-16

Issued May 2016, Executive Order B-37-16 directed the State Water Resources Control Board (Water Board) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. The Water Board must also develop a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25 percent reduction called for in Executive Order B-29-15. The Water Board and Department of Water Resources also was tasked with developing new, permanent water use targets that build upon the existing state law requirements that the state achieve a 20 percent reduction in urban water usage by 2020. Executive Order B-37-16 also specified that the Water Board will permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

16 California Air Resources Board, 2023, Advanced Clean Cars Program, available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about, accessed April 13, 2023.

17 California Air Resources Board, 2023, Advanced Clean Trucks, available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/about, accessed April 13, 2023.

18 Spang, Edward, et. al., 2020, *The cost-effectiveness of energy savings through water conservation: a utility-scale assessment*.

Executive Order B-40-17

Executive Order B-40-17 (2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinded Executive Order B-29-15, but expressly stated that Executive Order B-37-16 remains in effect and directs the Water Board to continue development of permanent prohibitions on wasteful water use.

Assembly Bill 1668 and Senate Bill 606

AB 1668 and SB 606 (2018) require the State Water Resources Control Board, in coordination with the Department of Water Resources, to adopt long-term standards for the efficient use of water and would establish specified standards for per capita daily indoor and outdoor residential water use, water losses, and other uses. The bill establishes as the standard for indoor residential water use: 55 gallons per capita daily until the end of 2024, 52.5 gallons per capita daily beginning January 1, 2025, and 50 gallons per capita daily beginning January 1, 2030. The bills also require the Department of Water Resources to conduct studies on the effects of landscaping on the climate throughout the state.

Executive Order N-10-19

Executive Order N-10-19 (2019) directs the California Natural Resources Agency, CalEPA, the California Department of Food and Agriculture, and the Department of Finance to prepare a water resilience portfolio that reassesses the strategies in the 2016 California Water Action Plan, updates the projected climate change impacts to California's water systems, and identify strategies to implement and integrate the policies across state agencies. The portfolio assesses the growing risks of drought, flood, and other challenges to water supply reliability then develops strategies that include more efficient use of water, recycling of water, additional storage, additional conveyance to facilitate recharge of aquifers, improved forecasting tools, better data about river flows and water consumption, and restoration of upper watersheds.

Solid Waste

GHG gas emissions are linked to solid waste through waste collection and landfill activities. Municipal solid waste landfills are the third largest source of human-related CH_4 emissions in the United States, accounting for approximately 14.5 percent of these emissions in 2020.[19] The diversion of waste going into landfills through reduction, reuse, and recycling helps decrease GHG emissions by minimizing waste overall, repurposing and remanufacturing of recycled materials, and conserving raw, natural resources. The following state waste management regulations support reductions in GHG emissions.

Assembly Bill 939

In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, § 40000 *et seq*.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board (replaced in 2010 by the California Department of Resources Recycling and Recovery, or CalRecycle), which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through

[19] U.S. Environmental Protection Agency, 2023, Landfill Methane Outreach Program: Basic Information about Landfill Gas, available at: https://www.epa.gov/lmop/basic-information-about-landfill-gas, accessed April 13, 2023.

source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

Assembly Bill 341

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 the year 2020, and annually thereafter. In addition, AB 341 required CalRecycle to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that it believes would assist the state in reaching the 75 percent goal by 2020.

Senate Bill 1383

To help reduce GHG emissions from organic waste, SB 1383 (2016) established the targets of reducing organic waste disposal 50 percent by 2020 and 75 percent by 2025. To facilitate achievement of this target, starting in 2022, all jurisdictions are required to (i) provide organic waste collection services to all residents and business, and (ii) recycle collected organic materials using recycling facilities, such as anaerobic digestion facilities and composting facilities.

California State University

California State University Sustainability Policy

The CSU has identified sustainability as a systemwide priority, as detailed in the CSU Sustainability Policy, which was first adopted in 2014 and updated in March 2022. The CSU Sustainability Policy encompasses the tenets of human and ecological health, social justice, and economic vitality, and promotes the environmental sustainability of the CSU's operations for the built environment.[20] The policy is organized into the following areas:

- University Sustainability – The CSU will integrate sustainability and climate literacy into the academic curriculum and all areas of the university; promote new and existing environmental and social justice programs; develop the green job workforce; promote the development of sustainable products and services; and foster sustainable economic development.
- Climate Action Plan – The CSU will strive to reduce systemwide facility carbon emissions to 40 percent below 1990 levels consistent with SB 32. These emissions will include both state and auxiliary organization purchases of electricity and natural gas; fleet and marine vessel usage; and other emissions the university or self-support entity has direct control over. Additionally, the CSU will strive to reduce facility carbon emissions to 80 percent below 1990 levels by 2040 in order to achieve carbon neutrality by 2045 in accordance with statewide mandates.
- Energy Resilience and Procurement – The CSU will endeavor to reduce energy capacity requirements from fossil fuels, enhance electrical demand flexibility, and use available and economically feasible technology for on-site renewable generation, microgrids, and other fossil fuel-free energy storage solutions. The CSU aims to increase its self-generated renewable energy and battery capacity from 32 to 80 megawatts (MW) by

[20] The California State University, PolicyStat, California State University Sustainability Policy, available at: https://calstate.policystat.com/policy/11699668/latest/#autoid-9wenv, accessed April 13, 2023.

2030.

Additionally, the CSU will consider cost-effective opportunities to exceed the California RPS sooner than the established goal of procuring 60 percent of its electricity needs from renewable sources by 2030 consistent with SB 100. To minimize the use of natural gas, universities will transition from fossil fuel-sourced equipment to electric equipment as replacements or renovations are needed.

- Energy Conservation, Carbon Reduction and Utility Management – All CSU buildings and facilities will be operated in the most energy-efficient manner and transition to a low carbon strategy without endangering public health and safety and without diminishing the quality of education and the academic program. The universities shall continue to identify energy-efficient and carbon reduction improvement measures to the greatest extent possible and coordinate with federal, state, and local governments and organizations in achieving energy conservation carbon reduction and utilities management objectives. The CSU will monitor monthly energy and utility usage on all campuses and the Chancellor Office of the Chancellor and will prepare a system-wide annual report on energy utilization and GHG emissions. Each CSU university will develop and maintain a campus-wide utility master plan to guide the overall climate action program, which will include an integrated strategic energy resource plan, with tactical recommendations in the areas of new construction, decarbonization, deferred maintenance, climate resilience, facility renewal, energy projects, water conservation, solid waste management, and an energy management plan.
- Water Conservation – All CSU universities shall pursue cost-effective water resource conservation to reduce consumption by 10 percent by 2030, as compared to a 2019 baseline, consistent with AB 1668 including steps to develop sustainable, drought-tolerant or native landscaping, reduce turf, install controls to optimize irrigation water use, reduce water usage, and promote the use of reclaimed/recycled water. In the event of a declaration of drought, the CSU will cooperate with the state, city, and county governments to the greatest extent possible to reduce water use.
- Sustainable Procurement – Universities will support the use of suppliers that integrate sustainable, environmentally friendly, and socially responsible practices, including encouraging those that recycle to move toward zero waste.
- Waste Management – Universities will aim to reduce landfill-bound waste to 50 percent of total campus waste by 2030, divert at least 80 percent from landfill by 2040, and move toward zero waste.
- Sustainable Food Service – Universities will improve their sustainable food purchases and operations.
- Sustainable Building & Lands Practices – All future CSU new construction, remodeling, renovation, and repair projects will be designed with consideration of optimum energy utilization, decarbonization, and low life-cycle operating costs and shall exceed all applicable energy codes and regulations (Building Energy Efficiency Standards, Title 24 California Code of Regulations Section 6) by 10 percent. Regarding specialized construction that is not regulated through the current energy standards (e.g., historical buildings, museums, auditoriums), the CSU will ensure that these facilities are designed to maximize energy efficiency. The CSU will design and build all new buildings and major renovations to meet or exceed the minimum requirements equivalent to Leadership in Energy and Environmental Design (LEED) Silver. For informal or unlandscaped areas, and where appropriate, universities will work to support a naturally functioning habitat,

promote biodiversity, and preserve native landscapes.

Capital planning for state and non-state facilities and infrastructure will consider features of a sustainable and durable design to achieve a low life-cycle cost. Universities will also design, construct, operate, and maintain green building-certified high-performing buildings that improve occupant productivity and wellness, optimize life-cycle costs, and minimize carbon impact. Principles and best practices will be implemented to the greatest extent possible.

Existing building energy performance will be optimized through improved operation, maintenance and repair, and capital improvement, enabling universities to meet carbon reduction goals. To balance long-term institutional needs with environmental concerns, sustainable design for capital projects will include:

- Siting and design considerations that take advantage of local geographic features to improve sustainability of the project, such as proximity to public transportation and maximizing use of vistas, microclimate, and prevailing winds;
- Durable systems and finishes with long life cycles that minimize maintenance and replacement;
- Optimization of layouts and designing spaces that can be reconfigured with the expectation that the facility will be renovated and reused (versus demolished);
- Systems designed for optimization of energy, water, and other natural resources;
- Optimization of indoor environmental quality for occupants;
- Utilization of environmentally preferable products and processes, such as long life-cycle materials and components, recycled-content and recyclable materials;
- Procedures that monitor, trend, and report operational performance as compared to the optimal design and operating parameters; and
- Cost-effective design features which align with the CSU Basic Needs Initiative and support university diversity, equity and inclusion efforts.

- Physical Plant Management – Each university will operate and maintain a comprehensive energy management system to achieve optimum efficiency in the use of natural gas, electricity, or any other purchased energy resources to meet the heating, cooling, and lighting needs of the buildings and/or facilities.
- Transportation – The CSU will encourage and promote the use of alternative transportation and/or alternative fuels to reduce GHG emissions related to campus associated transportation, including commuter and business travel. All CSU universities will develop and maintain a transportation demand management (TDM) plan to reduce Vehicle Miles Traveled (VMT) and carbon emissions; strive to increase electric vehicle (EV), electric bicycle, and other electric mobility and transportation device charging infrastructure and incentive programs to further support university carbon reduction strategies; and develop and maintain a long-range plan for transitioning fleet, and grounds equipment to zero emissions, excluding public safety patrol vehicles if necessary. By 2035, 50 percent of all light duty vehicle purchases will be ZEV, with no addition of gas-powered light duty vehicles to the fleet after 2035. All small off-road engine equipment used for campus grounds will be all-electric by 2035. All buses and heavy-duty vehicles will be ZEV by 2045 in alignment with state regulations.

Additional CSU Policies

The Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University (formerly, Executive Order 987) provides a policy statement on energy conservation, sustainable building practices, and physical plant management for the CSU. CSULB operates under this Executive Order, which sets minimum efficiency standards for new construction and renovations, and establishes operating practices intended to ensure that CSU buildings are used in the most energy efficient and sustainable manner possible while still meeting the programmatic needs of the university.[21]

Policy 9170, Revised Policy on Energy Conservation and Utilities Management and Energy Consumption Reduction Goal for 2004/2005 Compared to 1999/2000 per the CSU standards set forth in PolicyStat, provides that all CSU buildings and facilities will be operated in the most energy-efficient manner without endangering public health and safety. The policy also indicates that all future CSU new construction, remodeling, renovation and repair projects will be designed for optimum energy utilization, lowest life-cycle operating costs, and in compliance with all applicable energy codes (Enhanced Title 24 Energy Codes) and regulations. Incorporation of energy-efficient design features in the project plans and specifications will be prioritized.[22]

California State University, Long Beach 2022 Climate Action and Adaptation Plan

In 2014, CSULB completed the first iteration of its Climate Action Plan. In March 2022, the university issued an update to that plan with the release of the Climate Action & Adaptation Plan (CAAP). The purpose of the CAAP is to outline a flexible roadmap for CSULB to eliminate GHGs from campus operations in line with the university's commitment to carbon neutrality and adapt to the inevitable negative impacts of climate change. The CSULB CAAP is a culmination of extensive stakeholder engagement resulting in development of a technically, logistically, and economically feasible pathway for CSULB to decarbonize campus operations by 2030 and commute related emissions by 2040. It builds on the efforts the university has already undertaken to maximize energy efficiency, increase renewable energy production, support clean air vehicle adoption, embrace the most ambitious green building standards, and integrate sustainability and environmental justice across curricula.

The CSULB CAAP is focused specifically on addressing the following GHG emissions:

- *Scope 1 GHG emissions* – direct emissions from combustion of natural gas and other fugitive emissions (11 percent)
- *Scope 2 GHG emissions* – indirect emissions from purchased electricity associated with the need to heat, cool, and power campus facilities (17 percent)
- *Scope 3 GHG emissions* – indirect emissions from transportation to and from campus (60 percent)

[21] The California State University, PolicyStat, Executive Order 0987: Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University, available at: https://calstate.policystat.com/policy/6589455/latest, accessed July 24, 2023.

[22] The California State University, PolicyStat, Section IX: Energy Conservation and Utilities Management, Section 9170, Revised Policy on Energy Conservation and Utilities Management and Energy Consumption Reduction Goal for 2004/2005 Compared to 1999/2000, available at: https://calstate.policystat.com/policy/7056253/latest, accessed July 24, 2023.

The CSULB CAAP identifies the following goals and considerations:

- Synthesize existing energy project studies into a climate neutrality roadmap
- Determine the most feasible and actionable climate resilience strategies
- Identify appropriate metrics for measuring progress towards resilience goals
- Leverage other university priorities to ensure optimal CAAP implementation
- Generate buy-in for CAAP implementation
- Integrate scope 3 carbon neutrality goal
- Provide sufficient details to compel and guide university decision makers
- Communicate a concise and engaging plan to the diverse community
- Clarify approach to carbon offsets – targets cannot be met through projects and efficiencies alone
- Outline an adaptable roadmap – the feasibility of certain projects and strategies is still unknown or subject to other variables
- Integrate resilience strategies alongside mitigation strategies

California State University, Long Beach Carbon and Climate Commitments

In 2011, CSULB's then-President Alexander signed the Carbon Commitment, formerly known as the American College and University Presidents' Climate Commitment. The Carbon Commitment is a formal commitment to eliminate net GHG emissions from specified campus operations, and to promote the research and educational efforts that will help to equip society to re-stabilize the earth's climate.

As a Carbon Commitment signatory, CSULB is required to:

- Complete an annual greenhouse gas emissions inventory and make it publicly available
- Create a plan for mitigating carbon emissions (i.e., the CAAP)
- Complete and submit annual progress reports on CAAP implementation
- Achieve climate neutrality by a self-selected target year. Per the CAAP, CSULB has adopted targets of 2030 for operational emissions and 2040 for commute-related emissions.
- Integrate climate literacy into the curriculum and make it part of the educational experience

California State University, Long Beach Clean Energy Master Plan

In 2017, CSULB developed a Clean Energy Master Plan, which provides a strategic roadmap for GHG emission mitigation measures to not only reduce CSULB's Scope 1 and 2 emissions, but also drive operational savings and improve campus facilities and infrastructure. The Clean Energy Master Plan helps guide CSULB's energy strategy as the university works toward becoming carbon neutral by 2030. The Clean Energy Master Plan included a robust assessment of campus energy sources, demands, and utilization to identify clean energy alternatives and strategies to improve the efficiency of campus operations.

California State University, Long Beach Strategic Energy Plan

A comprehensive Strategic Energy Plan was prepared in 2011 that identifies energy efficiency projects, evaluates the provision of alternative energy sources at the campus, and analyzes their contribution to help the university reduce energy consumption and associated GHG emissions.

Regional

Southern California Association of Governments

On September 3, 2020, the Regional Council of the Southern California Association of Governments (SCAG) formally adopted the *2020-2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments – Connect SoCal* (2020–2045 RTP/SCS). The SCS portion of the 2020-2045 RTP/SCS highlights strategies for the region to reach the regional target of reducing GHGs from autos and light-duty trucks by 8 percent per capita by 2020, and 19 percent by 2035 (compared to 2005 levels). Specially, these strategies are to focus growth near destinations and mobility options; promote diverse housing choices; leverage technology innovations; support implementation of sustainability policies; and promote a green region.

Furthermore, the 2020-2045 RTP/SCS discusses a variety of land use tools to help achieve the state-mandated reductions in GHG emissions through reduced per capita VMT. Some of these tools include center focused placemaking and focusing on priority growth areas, job centers, and transit priority areas, as well as high-quality transit areas and green regions.

3.6.2 Environmental Setting

Global Climate Change

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns. The global climate continues to change rapidly compared to the pace of the natural variations in climate that have occurred throughout Earth's history. Trends in globally averaged temperature, sea level rise, upper-ocean heat content, land-based ice melt, arctic sea ice, depth of seasonal permafrost thaw, and other climate variables provide consistent evidence of a warming planet. These observed trends are robust and have been confirmed by multiple independent research groups around the world.[23]

The frequency and intensity of extreme heat and heavy precipitation events are increasing in most continental regions of the world. These trends are consistent with expected physical responses to a warming climate. Climate model studies are also consistent with these trends, although models tend to underestimate the observed trends, especially for the increase in extreme precipitation events. The frequency and intensity of extreme high temperature events are certain to increase in the future as global temperature increases.[24]

Global climate is projected to continue to change over this century and beyond. The magnitude of climate change beyond the next few decades will depend primarily on the amount of GHGs emitted globally and on the remaining uncertainty in the sensitivity of Earth's climate to those heat-trapping emissions. With substantial reductions in GHG emissions, the global annually averaged temperature rise could be limited to 3.6 degrees Fahrenheit (2 degrees Celsius) or less.

[23] U.S. Global Change Research Program, 2017, Climate Science Special Report, Fourth National Climate Assessment (NCA4), available at: https://science2017.globalchange.gov/, accessed July 24, 2023.

[24] Ibid.

However, without major reductions in these GHG emissions, the increase in annual average global temperatures relative to preindustrial times could reach 9 degrees Fahrenheit (5 degrees Celsius) or more by the end of this century.[25] The severity of effects caused by climate change will depend on the path of future human activities. More GHG emissions will lead to more climate extremes and widespread damaging effects across our planet.

Greenhouse Gases

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The natural process through which heat is retained in the troposphere is called the "greenhouse effect."[26] 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 this long wave radiation into space and toward the Earth. This "trapping" of the long wave (thermal) radiation emitted back toward the Earth is the underlying process of the greenhouse effect. The most abundant GHGs are water vapor and CO_2. Many other trace gases have greater ability to absorb and re-radiate long wave radiation; however, these gases are not as plentiful. For this reason, and to gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-radiate long wave radiation. GHGs normally associated with development projects include the following:[27,28,29]

Carbon Dioxide (CO_2). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, CO_2 emissions from fossil fuel combustion increased by a total of 1.8 percent between 1990 and 2019.[30] Between 2019 and 2020, the decrease in total GHG emissions was driven largely by a 10.5 percent decrease in CO_2 emissions from fossil fuel combustion, including a 13.3 percent decrease in transportation sector emissions from less travel due to the COVID-19 pandemic and a 10.4 percent decrease in emissions in the electric power sector.[31] CO_2 is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs.

Methane (CH_4). Methane is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. The top three CH_4 sources in the nation are landfills, natural gas systems, and enteric fermentation. CH_4 is the primary component of natural gas, used for space and water heating, steam production, and power

25 U.S. Global Change Research Program, 2017, Climate Science Special Report, Fourth National Climate Assessment (NCA4), available at: https://science2017.globalchange.gov/, accessed July 24, 2023.

26 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

27 All GWPs are given as 100-year GWP. Generally, GWPs were obtained from the Intergovernmental Panel on Climate Change Fourth Assessment Report (AR4) and Fifth Assessment Report (AR5), with the addition of GWPs from the Intergovernmental Panel on Climate Change's Fifth Assessment Report for fluorinated GHGs that did not have GWPs in the AR4 and AR5.

28 Intergovernmental Panel on Climate Change, 2007, Fourth Assessment Report, available at: https://www.ipcc.ch/assessment-report/ar4/, accessed April 4, 2023.

29 Intergovernmental Panel on Climate Change, 2014, Fifth Assessment Report, available at: https://www.ipcc.ch/assessment-report/ar5/, accessed April 4, 2023.

30 U.S. Environmental Protection Agency, 2020, *Inventory of United States Greenhouse Gas Emissions and Sinks 1990 to 2019*.

31 Ibid.

generation. The GWP of CH_4 is 27.9.

Nitrous Oxide (N_2O). Nitrous oxide is produced by both natural and human related sources. Primary human related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. The GWP of N_2O is 273.

Hydrofluorocarbons (HFCs). Typically used as refrigerants for both stationary refrigeration and mobile air conditioning, use of HFCs for cooling and foam blowing is increasing, as the continued phase out of chlorofluorocarbons (CFCs) and HFCs gains momentum. In 2022, California banned the sale of new bulk HFCs and only allows the use of reclaimed HFCs. The GWP of HFCs range from 4.84 for HFC-161 to 14,600 for HFC-23.

Perfluorocarbons (PFCs). PFCs are compounds consisting of carbon and fluorine and are primarily created as a byproduct of aluminum production and semiconductor manufacturing. PFCs are potent GHGs with a GWP several thousand times that of CO_2, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years). The GWP of PFCs range from 7,380 to 12,400.

Sulfur hexafluoride (SF_6). SF_6 is a colorless, odorless, nontoxic, nonflammable gas. SF_6 is the most potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 25,200. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to CO_2 (4 parts per trillion [ppt] in 1990 versus 365 ppm, respectively).

Water Vapor (H_2O). Although H_2O has not received the scrutiny of other GHGs, it is the primary contributor to the greenhouse effect. Natural processes, such as evaporation from oceans and rivers, and transpiration from plants, contribute 90 percent and 10 percent of the water vapor in our atmosphere, respectively. The primary human related source of H_2O comes from fuel combustion in motor vehicles; however, it does not contribute a significant amount (less than one percent) to atmospheric concentrations of H_2O. The Intergovernmental Panel on Climate Change has not determined a GWP for H_2O.

In addition to the six major GHGs discussed above (excluding H_2O), many other compounds have the potential to contribute to the greenhouse effect. Some of these substances were previously identified as stratospheric ozone (O_3) depletors; therefore, their gradual phase out is currently in effect. The following is a listing of these compounds:

Hydrochlorofluorocarbons (HCFCs). HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, all developed countries that adhere to the Montreal Protocol are subject to a consumption cap and gradual phase out of HCFCs. The United States is scheduled to achieve a 100 percent reduction to the cap by 2030. The GWP of HCFCs range from 56.4 for HCFC-122 to 2,300 for HCFC-142b.

1,1,1 trichloroethane. 1,1,1 trichloroethane or methyl chloroform is a solvent and degreasing agent commonly used by manufacturers. The GWP of methyl chloroform is 161 times that of CO_2.

Chlorofluorocarbons (CFCs). CFCs are used as refrigerants, cleaning solvents, and aerosols spray propellants. CFCs were also part of the EPA's Final Rule (57 Federal Register 3374) for the phase out of O_3 depleting substances. Currently, CFCs have been replaced by HFCs in

cooling systems and a variety of alternatives for cleaning solvents. Nevertheless, CFCs remain suspended in the atmosphere contributing to the greenhouse effect. CFCs are potent GHGs with GWPs ranging from 3,550 for CFC-11 to 16,200 for CFC-13.

GHG Emissions Inventories

California's GHG Emissions Inventory

According to CARB's California 2000–2020 GHG emissions inventory, California emitted 369.2 MMT CO_2e in 2020, 35.3 MMT CO_2e lower than 2019 levels and 61.8 MMT CO_2e below the 2020 GHG limit of 431 MMT CO_2e.[32] The transportation sector remains the largest source of GHG emissions in the state. Direct emissions from vehicle tailpipes, off-road transportation sources, intrastate aviation, and other transportation sources, account for approximately 37 percent of statewide emissions in 2020. Emissions from the electricity sector account for approximately 16 percent of the inventory in 2020 and had a slight decrease of 0.7 MMT CO_2e compared to 2019. Continued growth of in-state solar generation and increases in imported renewable electricity more than compensate for the drop in in-state hydropower generation due to below average precipitation levels. The industrial sector trend has been relatively flat in recent years but saw a decrease of 7.1 MMT CO_2e in 2020. Commercial and residential emissions saw a decrease of 1.7 MMT CO_2e. Emissions from high-GWP gases have continued to increase as they replace ozone depleting substances that are being phased out under the international 1987 Montreal Protocol treaty. Emissions from other sectors have remained relatively constant in recent years. Table 3.6-1 presents California GHG emission source categories and their relative contributions to the emissions inventory in 2020.

Table 3.6-1: Greenhouse Gas Emissions Sources in California (2020)

Sources Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total
Transportation	135.8	36.8%
Electric Power	59.5	19.9%
Industrial	73.3	16.1%
Commercial and Residential	38.7	10.5%
Agriculture	31.6	8.6%
High GWP	21.3	5.8%
Recycling and Waste	8.9	2.4%

Source: California Air Resources Board, October 2022, California Greenhouse Gas Emissions for 2000 to 2020 Trends of Emissions and Other Indicators.

CSULB's GHG Emissions Inventory

CSULB formalized its commitment to climate action in 2010 as a part of the Carbon Commitment. As a Carbon Commitment signatory, CSULB is responsible for conducting regular GHG inventories, creating and regularly updating the CAAP, and setting a date by which the university will achieve climate neutrality. Table 3.6-2 below lists each of the emissions sources and their relative contributions to the emissions inventory from 2017-2018.

[32] California Air Resources Board, October 2022, *California Greenhouse Gas Emissions for 2000 to 2020: Trends of Emissions and Other Indicators*.

Table 3.6-2: CSULB Greenhouse Gas Emissions for 2017-2018

Scope Number	Emission Sources	Annual GHG Emissions (MMT CO_2e)	Percent of Total
1	Stationary Combustion	6,471	12%
	Mobile Combustion/Fleet Fuels	391	1%
	Fugitive Emissions	1,083	2%
2	Purchased Electricity	11,436	21%
3	Student Commuting	28,344	51%
	Faculty/Staff Commuting	6,095	11%
	Air Travel	1,617	3%
	Solid Waste	-80	0%
Total GHG Emissions		55,356[a]	100%

a. Totals may not add up precisely due to rounding.

Source: Association for the Advancement of Sustainability in Higher Education, 2021, The Sustainability Tracking, Assessment & Rating System, California State University, Long Beach: OP-1 Emissions Inventory and Disclosure, 2021, available at: https://reports.aashe.org/institutions/california-state-university-long-beach-ca/report/2021-01-29/OP/air-climate/OP-1/, accessed April 14, 2023.

3.6.3 Methodology

Scope of Analysis for Climate Change

The study area for climate change and the analysis of GHG emissions is broad, as climate change is influenced by worldwide emissions and their global effects. The appropriate baseline against which to compare potential impacts of the project includes the natural and anthropogenic drivers of global climate change, including worldwide GHG emissions from human activities that have likely increased global surface temperature by 1.06 degrees Celsius (33.91 degrees Fahrenheit) from 2010 to 2019.[33]

The state of California is leading the nation in managing GHG emissions. Accordingly, the impact analysis for this project relies on guidelines, analyses, policy, and plans for reducing GHG emissions established by CARB.

Program- and Project-Level Review

The GHG emissions impact analysis in this section includes a program-level analysis of the proposed Master Plan Update. The analysis also includes a project-level analysis of the most impactful near- and mid-term development projects, in terms of GHG emissions, that would be implemented under the proposed Master Plan Update. Of the near- and mid-term projects described in Chapter 2, Project Description, the most impactful projects were identified and modeled based on their respective anticipated construction scenarios, construction duration, construction equipment, existing and/or new building square footage, and demolition requirements. These projects were selected because they represent projects with the most

[33] Intergovernmental Panel on Climate Change, 2021, Sixth Assessment Report, available at: https://www.ipcc.ch/assessment-report/ar6/, accessed July 20, 2023.

intensive construction scenarios for GHG emissions.

Both construction and operation of the project are considered in the impact analysis, where relevant.

Project-related GHG emissions would include emissions from direct and indirect sources. Direct project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from energy consumption, water demand, and solid waste generation.

The proposed project would result in direct and indirect emissions of CO_2, CH_4, and N_2O, and would result in negligible emissions of other GHGs that would not facilitate a meaningful analysis. According to CARB,[34] CO_2, CH_4, and N_2O consist of over 94 percent of the state's total emissions in 2020. Furthermore, the California Emissions Estimator Model (CalEEMod), referenced below, only provides emissions for CO_2, CH_4, and N_2O. Therefore, this analysis focuses on these three types of GHG emissions.

The direct and indirect emissions are described below.

Construction Emissions Methodology

Emissions from the construction phase of implementation of the Master Plan Update were calculated using CalEEMod Version 2020.4.0. The analysis of GHG emissions used the same methodology and modeling inputs as the analysis of air quality impacts in Section 3.2, Air Quality, of this Draft EIR. Refer to Section 3.2.3, Methodology, for a discussion of construction emissions calculation methodology and modeling inputs used in CalEEMod.

Construction of the project would result in GHG emissions primarily associated with use of off-road construction equipment, on-road hauling, vendor (material delivery) trucks, and worker vehicles.

Based on SCAQMD guidance,[35] total construction GHG emissions need to be amortized over the lifetime of the project (assumed to be 30 years) and added to operational emissions. Construction of the most impactful near- and mid-term projects was estimated to occur over approximately seven years (2024 through 2031) based on construction information provided by program planners in the Design & Construction Services Department at CSULB. To estimate the average annual construction emissions under the Master Plan Update buildout, total construction emissions of the most impactful near- and mid-term projects were divided by seven years, then multiplied by the Master Plan Update's 12-year buildout (2024 through 2035, inclusive), and then divided by the assumed lifetime of the Master Plan Update of 30 years.

Operational Emissions Methodology

Emissions from the operational phase of the Master Plan Update for all proposed development described in Chapter 2, Project Description, were calculated using CalEEMod Version 2020.4.0, based on an operational year 2035, the horizon year for the Master Plan Update. Emissions from the existing land uses (modeled as 4-year University/College) on the campus were also calculated

[34] California Air Resources Board, California Greenhouse Gas Inventory for 2000-2020 — by Gas, https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/ghg_inventory_bygas.pdf, accessed July 20, 2023.

[35] South Coast Air Quality Management District, October 2008, *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold*.

using CalEEMod to present the net change in GHG emissions. Operational year 2019 was used for existing conditions in the modeling, consistent with the baseline year for the transportation analysis (see Section 3.11, Transportation).

CalEEMod provides conservative and representative default values (e.g., emission factors) for each emissions source type, so that the model may be used to estimate emissions once all project-specific and existing land use characteristics and information have been input into the model. Default values in CalEEMod were replaced with project-/campus-specific information, where such information was readily available. The GHG emissions inventories for the project and existing campus conditions reflect the use of project-/campus-specific and default inputs, as described further below. In this respect, the methodologies used in the emission calculations presented in this analysis would differ from the university-reported inventory, which utilizes the Sustainability Tracking, Assessment & Rating System, a self-reporting framework for colleges and universities to gauge relative progress toward sustainability.

To calculate the net increase in operational emissions associated with implementation of the Master Plan Update, the emissions from the existing operation of the campus were subtracted from the emissions from the operational phase of the Master Plan Update, as the operational phase estimate includes all proposed development and all existing campus development that would not change with implementation of the Master Plan Update.

Existing and potential operational GHG emissions generated for implementation of the Master Plan Update were estimated for area sources (consumer product use, architectural coatings, and landscape maintenance equipment), energy sources (electricity and natural gas), mobile sources, solid waste, and water and wastewater treatment as further described below. It should be noted that although project design features would be implemented with the Master Plan Update that could reduce GHG emissions in compliance with the CSULB CAAP, as a conservative analysis, none of the features were accounted for in the CalEEMod modeling.

As indicated in the analysis under Threshold GHG-1, the net increase in GHG emissions associated with implementation of the Master Plan Update would not exceed the project-related campus-specific significance thresholds, which are further described below under the Project-Related Campus-Specific Mass Emissions Threshold subheading. Therefore, separate operational emissions estimates were not conducted for each of the near- and mid-term development projects as such estimates were not required to determine the significance of the project-level impacts.

Area Sources

CalEEMod was used to estimate operational emissions from area sources, which include emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Consumer product use and architectural coatings primarily result in criteria air pollutant emissions, which are analyzed in Section 3.2, Air Quality, and would generate little to no GHG emissions.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions from landscape equipment use are calculated based on CalEEMod default values for emission factors and assumed that landscape maintenance is performed all year-round. However, GHG emissions associated with landscape maintenance equipment are likely overestimated as such emissions are expected to be reduced over time with CARB's approval of amendments to the SORE regulations, which would require newly manufactured landscaping equipment to be

zero-emission starting in 2024.

Energy Sources

The estimation of operational energy emissions was based on estimated existing energy consumption and future energy demand forecast data provided by CSULB for both existing conditions and project buildout. Default values in CalEEMod were updated to reflect these data (electricity and natural gas usage per year).

CSULB's electricity is provided by Southern California Edison (SCE) and on-site solar generation. For modeling purposes, only electricity purchased from SCE was considered, as electricity generated from renewable sources (e.g., solar) does not generate significant GHG emissions. The existing and horizon year natural gas and electricity consumptions were obtained from the Utility Infrastructure Master Plan Update. Based on the Utility Infrastructure Master Plan Update, the natural gas and SCE electricity consumption was 1,377,285 therms (137,695,445 kilo British thermal units (kBtu)) and 37,884,271 kilowatt-hours, respectively, in 2019. Implementation of the Master Plan Update would increase the electricity consumption by 25,291,100 kBtu (7,412,397 kilowatt-hours). To be conservative, this analysis assumes that all additional electricity consumed as part of implementation of the Master Plan Update would be purchased from SCE. This assumption is conservative as the new buildings under the Master Plan Update would be required to install photovoltaic panels per 2022 Title 24 standards, which would generate on-site energy.

Additionally, CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030; and thus, CSULB would mostly phase out natural gas by 2035. However, to be conservative, this analysis assumes natural gas use for operation in 2035 would remain the same as under existing conditions (1,377,285 therms or 137,695,445 kBtu) to account for the continued use of natural gas at a few buildings on campus that require natural gas, such as laboratories with Bunsen burners and commercial kitchens. This assumption is conservative as the new buildings under the Master Plan Update would be electrified and would not consume natural gas, and some existing buildings would consume less natural gas as they would be retrofitted under the Master Plan Update to be fully electrified. The Title 24, Non-Title 24, and Lighting energy consumption breakdown for the existing conditions and the Master Plan Update were adjusted in proportion to the CalEEMod defaults because the energy consumption breakdown was not provided in the Utility Infrastructure Master Plan Update.

Mobile Sources

Mobile sources related to implementation of the Master Plan Update would primarily be motor vehicles (automobiles and light-duty trucks) traveling to, from, and within the campus. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2020.4.0, which is based on CARB's Mobile Source Emissions Inventory model, EMission FACtor, version 2017, was applied. All details for estimating criteria air pollutants from mobile sources during project operation are discussed in Section 3.2, Air Quality, are also applicable for the estimation of operational mobile source GHG emissions.

Regulatory measures related to mobile sources are discussed above in Section 3.6.1, Regulatory Setting, and include AB 1493, the ACC II program, and related federal standards. As previously discussed, AB 1493 required that CARB establish GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for non-commercial personal transportation in the state. In addition, the NHTSA and EPA have established corporate fuel economy standards and GHG emission standards,

respectively, for passenger vehicles and light-, medium-, and heavy-duty vehicles. Implementation of these standards and fleet turnover (replacement of older vehicles with newer ones) would gradually reduce GHG emissions from the use of motor vehicles related to the implementation of the Master Plan Update. The ACC II regulations will rapidly scale down light-duty passenger car, pickup truck and SUV emissions starting with the 2026 model year through 2035. These rules have been accounted in the default emission factors in CalEEMod.

Trip generation rates and VMT for the Master Plan Update are based on the transportation analysis in Section 3.11, Transportation. According to the transportation analysis, CSULB would generate approximately 33,237 trips per day in the 2019 baseline year without the project, and 44,113 trips per day in the 2035 horizon year with the project (i.e., Master Plan Update). Based on the modeling conducted for the transportation analysis, this would result in a total site-generated VMT of 390,197 miles per day in the 2019 baseline year without the project and 446,213 miles per day in the 2035 horizon year with the project. Default vehicle trip generation rates included in CalEEMod were adjusted to match the existing and project's trip generation estimates from the transportation analysis. In addition, Saturday and Sunday trip rates for the 2019 baseline year without the project and 2035 horizon year with the project were adjusted in proportion to the CalEEMod weekday trip rates because weekend trip-generation rates are not provided in the transportation analysis. CalEEMod default trip distances were adjusted to match the weekday daily VMT for the existing conditions and the project. Other CalEEMod default data, including temperature, trip characteristics, variable start information, and emissions factors were conservatively used for the model inputs. Project-related traffic includes a mix of vehicles in accordance with the model defaults. Emission factors representing the vehicle mix and emissions for the 2019 baseline year and 2035 horizon year were used to estimate emissions under the existing conditions (i.e., without the project) and at project buildout, respectively.

Solid Waste

Solid waste generated during the 2019 baseline year and under the 2035 horizon year with the project would result in CO_2e emissions associated with landfill off-gassing. Landfill gas is a natural byproduct of the decomposition of organic material in landfills. Landfill gas is composed of roughly 50 percent CH_4, 50 percent CO_2, and a small amount of non-methane organic compounds. CH_4 is a potent greenhouse gas 28 to 36 times more effective than CO_2 at trapping heat in the atmosphere over a 100-year period.[36] CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste generated from current existing land uses and from the future proposed land uses (modeled as a 4-year University/College) with implementation of the Master Plan Update.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water require the use of electricity, which would result in indirect GHG emissions. Similarly, wastewater generated by implementation of the Master Plan Update would require the use of electricity for conveyance and treatment and would also result in indirect GHG emissions. CalEEMod default values were adjusted based on the future forecast data based on the Water Supply Information Report prepared for the proposed project (Appendix I). Based on the Water Supply Information Report prepared for the Master Plan Update, the campus's water use has declined over the years as a result of the installation of water meters and implementation of water conservation measures. The existing water consumption in 2019 at CSULB was approximately 179,621 cubic feet (134.4 million gallons). At buildout, total

[36] U.S. Environmental Protection Agency, Landfill Methane Outreach Program, Basic Information about Landfill Gas, https://www.epa.gov/lmop/basic-information-about-landfill-gas, accessed April 11, 2023.

potable water use at CSULB is estimated to be approximately 159.7 million gallons. This GHG analysis conservatively assumes a 50/50 split between indoor and outdoor water demand.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to GHG emissions are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to GHG emissions if it would:

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

Relevant Background Information

As related to Threshold GHG-1, there are currently no established quantitative thresholds adopted by an agency with subject matter expertise (like CARB) for assessing whether the GHG emissions of a project, such as implementation of the Master Plan Update, would be considered a cumulatively considerable contribution to global climate change.[37,38] However, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts, GHG emissions impacts must also be evaluated on a project-level under CEQA.[39]

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, 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. The Governor's Office of Planning and Research's Technical Advisory, titled "Discussion Draft CEQA and Climate Change Advisory," states that,

> "Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for perming an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable…Even in the absence of clearly defined thresholds for greenhouse gas emissions, such emissions 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."[40]

Furthermore, 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." Section 15064.7(c) of the CEQA Guidelines specifies that

37 California Natural Resources Agency, December 2009, *Final Statement of Reasons for Regulatory Action, pp. 11-13, 14, 16*.

38 Letter from Cynthia Bryant, Director of the Office of Planning and Research to Mike Chrisman, Secretary for Natural Resources, dated April 13, 2009.

39 California Code of Regulations, Title 14, Section 15064(h)(3).

40 State of California, Governor's Office of Planning and Research, December 2018, *Discussion Draft CEQA and Climate Change Advisory*, December 2018.

"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."

CSU has not adopted a threshold of significance for GHG emissions for generally applicable use. The CSULB campus is under the jurisdiction of the SCAQMD, which, to date, likewise has not adopted significance criteria or thresholds for assessing GHG emissions that are applicable to the project.

Project-Related Campus-Specific Mass Emissions Threshold

In the absence of a numeric threshold adopted by either CARB, the SCAQMD, or the CSU, a campus-specific mass emissions threshold was derived based on the state's and CSULB's most recent inventories. This approach is appropriate for the implementation of the Master Plan Update because it compares the project's GHG emissions to statewide GHG reduction goals established for 2045 per CARB's 2022 Scoping Plan. Additionally, this approach is more conservative than using CalEEMod baseline emissions to calculate the campus-specific mass emissions threshold as the threshold calculated from CalEEMod baseline emissions would be higher. The campus-specific mass emission threshold is discussed below.

The first step in the derivation of the campus-specific mass emissions threshold was to identify the percentage reduction that must be achieved statewide for attainment of the 2045 net-zero GHG emissions goal. The state's 2018 emissions inventory (411 MMT CO_2e)[41] was used to derive a percent reduction that would be in line with CARB's 2045 target (net-zero emissions, or zero CO_2e)[42] by applying a straight-line regression between the 2018 inventory and 2045 target. The straight-line regression was then used to yield the 2035 target emissions and the associated percent reduction from 2018 emission level. Based on this calculation, the state would need to reduce emissions by 63 percent from 2018 level by the year of 2035 to be in line with 2045 target.

The second step was to apply the statewide percent reduction of 63 percent to CSULB's 2018 GHG emissions inventory (55,355.83 $MTCO_2e$, as reported in the Sustainability Tracking, Assessment & Rating System)[43] to determine the mass emissions level for 2035, the horizon year for the Master Plan Update, that would be in line with the state's goals. This calculation identified a campus-specific mass emissions limit of 20,503.21 $MTCO_2e$ for the year 2035.

The third step involved dividing the campus-specific mass emissions limit (20,503.21 $MTCO_2e$) by the campus' total anticipated service population, including all students, faculty and staff, and faculty and staff household members (i.e., 38,165 total campus population; refer to Chapter 2, Project Description, Table 2-3, Existing and Anticipated Total Campus Population). This calculation identified a per capita emissions level of 0.54 $MTCO_2e$ per total campus population per year.

The fourth (and final) step involved multiplying the per capita emissions rate by the net increase

41 California Air Resources Board, *2000–2020 GHG Emissions Trends Report Data*, available at: https://ww2.arb.ca.gov/ghg-inventory-data, accessed February 3, 2023.

42 California Air Resources Board, December 2022, *2022 Scoping Plan for Achieving Carbon Neutrality*.

43 Association for the Advancement of Sustainability in Higher Education, 2021, The Sustainability Tracking, Assessment & Rating System, California State University, Long Beach: OP-1 Emissions Inventory and Disclosure, 2021, available at: https://reports.aashe.org/institutions/california-state-university-long-beach-ca/report/2021-01-29/OP/air-climate/OP-1/, accessed February 3, 2023.

in service population resulting from the proposed project (i.e., 5,466 net increase in the total campus population; refer to Chapter 2, Project Description, Table 2-3) to obtain the project-related campus-specific mass emission threshold of 2,936.47 $MTCO_2e$ per year. The equation and calculations discussed above are provided in Appendix C, Air Quality and Greenhouse Gas Emissions Calculations.

3.6.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed.

GHG-1 Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Program-Level Analysis for Master Plan Update

Construction

Construction of the Master Plan Update projects would generally involve activities associated with demolition, grading, building construction, paving, and architectural coating applications. For the purposes of estimating construction emissions, the most impactful projects were modeled separately, and then the GHG emissions for each development project in each construction year were then added up to account for overlapping and determine the program-level emissions. Table 3.6-3, Program-Level Construction Greenhouse Gas Emissions, presents construction emissions for the Master Plan Update from on-site and off-site emission sources.

Construction of the near- and mid-term projects was estimated to last a total of approximately seven years (2024 through 2031) based on construction information provided by program planners in the Design & Construction Services Department at CSULB. As discussed above, the most impactful near-term and mid-term projects in terms of GHG emissions (i.e., with intensive construction scenarios) have been overlapped between the development years of 2024 through 2031 for a conservative analysis. The estimated annual average GHG emissions from the maximum concurrent (overlapped) development construction scenario would be approximately 987.39 $MTCO_2e$ (6,911.71 $MTCO_2e \div 7$ years). The annual average construction emissions were then multiplied over the Master Plan Update's 12-year buildout (2024 through 2035, inclusive) to conservatively estimate the total GHG emissions due to construction. This methodology assumed the same intensity of construction activity and the same emission factors of construction equipment in the future years as the years 2024 through 2031. This assumption is conservative because construction of projects after 2031 is anticipated to be less intensive than the overlapped near- and mid-term projects. Additionally, as technology improves, construction equipment emission factors would be lower in the future, resulting in reduced emissions. Over the 12-year buildout period, it is estimated that project buildout would result in approximately 11,848.64 $MTCO_2e$ (987.39 $MTCO_2e$ x 12 years).

As shown in Table 3.6-3, the estimated project-generated construction emissions amortized over 30 years would be approximately 394.95 $MTCO_2e$ per year. In addition to the most impactful projects modeled, implementation of the Master Plan Update would include various renovation projects for academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements through the 2035 horizon year. These types of projects are not included in the modeling for construction emissions as they are considered

minor construction projects with short-term schedules and are not anticipated to result in substantial GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis below.

Table 3.6-3: Program-Level Construction Greenhouse Gas Emissions

Year	Metric Tons Per Year			
	CO_2	CH_4	N_2O	CO_2e
2024	1,028.32	0.17	0.04	1,046.37
2025	1,963.40	0.21	0.09	1,995.00
2026	1,193.60	0.18	0.05	1,211.56
2027	1,179.97	0.20	0.04	1,196.28
2028	641.63	0.12	0.02	651.09
2029	318.08	0.06	0.01	323.65
2030	423.03	0.02	0.02	428.20
2031	58.97	<0.01	<0.01	59.559
Total Construction Emissions for Maximum Concurrent Development				**6,911.71**
Annual Average				**987.39**
Total Construction Emissions Over 12-Year Buildout (= Annual Average x 12)				**11,848.64**
Amortized Construction Emissions (= Total Construction Emissions / 30)				**394.95**

Operation

Operational emissions related to implementation of the Master Plan Update and existing campus development would decrease with project implementation. Implementation of the Master Plan Update would generate the same types of GHG emissions compared to existing conditions through mobile source (vehicle trips); landscape maintenance equipment operation (area source); energy use (electricity); solid waste disposal; water supply, treatment, and distribution; and wastewater treatment.

As shown in Table 3.6-4, Program-Level Annual Greenhouse Gas Emissions, the total net change in project-related GHG emissions from all sources combined would be a reduction of 7,673.38 $MTCO_2e$ per year compared to existing conditions, which is below the Campus-Specific Mass Emission Threshold of 2,936.47 $MTCO_2e$ per year. The total net change of GHG emissions would be negative, due to the implementation of more stringent emission standards and reduced mobile source emission factors in the future. Mobile source emissions calculations used CalEEMod default emission factors, which decrease annually due to state regulations, including Low Carbon Fuel Standard and Low-Emission Vehicle (LEV) Program. These regulations would reduce mobile source emissions regardless of individual behavioral changes or CSULB's actions, as they regulate fuel and vehicle emission standards at the manufacturer level, not the consumer level. As such, although daily trips and VMT would increase as a result of the Master Plan Update, associated mobile source emissions would significantly decrease.

As discussed in the construction analysis above, implementation of the Master Plan Update would include various renovation projects for academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements. However, these projects are not included in the modeling for GHG emissions as they do not typically result in substantial GHG emissions. It is anticipated that renovation projects would further reduce emissions associated with energy (electricity) as renovations would increase energy efficiencies as required by CSU energy policies. For pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements, it is anticipated that these types of projects would either reduce emissions associated with energy or remain similar to existing

conditions due to their passive and intermittent use. In addition, transportation improvement projects such as pedestrian/bike lane improvements and mobility enhancement would reduce VMT and/or improve traffic flow, which would reduce mobile source GHG emissions; however, as a conservative analysis, this reduction was not quantified or accounted for in Table 3.6-4. As such, program-level impacts related to generation of GHG emissions would be less than significant.

Table 3.6-4: Program-Level Annual Greenhouse Gas Emissions

Source	CO_2	CH_4		N_2O		Total Metric Tons of CO_2e
	Metric Tons/year[1]	Metric Tons/year[a]	Metric Tons of CO_2e[b]	Metric Tons/year[a]	Metric Tons of CO_2e[b]	
Existing Emissions						
Area Source	1.18	<0.01	0.01	0.00	0.00	1.27
Mobile Source	44,531.29	2.93	73.24	2.08	620.26	45,224.78
Energy	14,065.95	0.71	17.70	0.20	60.61	14,144.27
Solid Waste	1,211.36	71.59	1,789.74	0.00	0.00	3,001.10
Water Demand	308.84	2.21	55.34	0.05	16.27	380.47
Total Existing Emissions[c]	***60,118.63***	***77.44***	***1,936.09***	***2.34***	***697.14***	***62,751.89***
Campus at Buildout Emissions[d]						
Construction (amortized over 30 years)	388.97	0.05	1.37	0.02	4.56	394.95
Area Source	1.38	<0.01	0.01	0.00	0.00	1.47
Mobile Source	34,750.99	2.25	56.28	1.52	454.12	35,261.40
Energy	15,380.64	0.82	20.47	0.22	64.64	15,465.75
Solid Waste	1,413.85	83.56	2,088.91	0.00	0.00	3,502.76
Water Demand	367.05	2.63	65.77	0.06	19.34	452.17
Total Campus at Buildout Emissions[c]	***52,302.89***	***89.32***	***2,232.90***	***1.82***	***542.66***	***55,078.51***
Total Net Change (Campus at Buildout Minus Existing Emissions)	***-7,673.38 $MTCO_2e$/year***					
Campus-Specific Mass Emission Threshold	***2,936.47 $MTCO_2e$/year***					
Threshold Exceeded?	***NO***					

a. Emissions calculated using California Emissions Estimator Model Version 2020.4.0 (CalEEMod) computer model.
b. CO_2 Equivalent values calculated using the EPA Website, *Greenhouse Gas Equivalencies Calculator*, http://www.epa.gov/cleanenergy/energy-resources/calculator.html, accessed February 9, 2023.
c. Totals may not add up precisely due to rounding.
d. Emission reductions applied in the CalEEMod model, or "mitigated emission", include Rule 445 and AB 341.

Source: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations, for detailed model input/output data.

Project-Level Analysis for Near- and Mid-Term Development Projects

Emissions from construction activities associated with the following projects and emissions from operational activities associated with the buildout of the Master Plan Update were calculated using CalEEMod: Engineering Replacement Building, New Parkside Housing Village, Faculty and Staff Housing, USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, New 7th St. Community Outreach Facility, Jack Rose Track/Commencement Facilities, and Walter Pyramid Renovation. Construction emissions were

calculated based on the assumption that long-term development projects associated with the Master Plan Update would have similar construction intensities as the near- and mid-term development projects, and as such would generate the same level of average annual construction emissions. Predicted construction emissions presented in Table 3.6-4 above include construction emissions from the 11 most impactful projects and were evaluated over a 12-year buildout duration, amortized over 30 years and summed with the project's operational emissions. Similar to the program analysis, in addition to the most impactful projects modeled, implementation of the Master Plan Update would include various renovation projects for academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements through the 2035 horizon year. These types of projects are not included in the modeling for construction emissions as they are considered minor construction projects with short-term schedules and are not anticipated to result in substantial GHG emissions.

As shown in Table 3.6-4 above, the net change GHG emissions associated with the implementation of the Master Plan Update, which includes the 11 projects, would be a reduction 15,519.50 $MTCO_2e$ per year and would be well below the mass emission threshold of 2,936.47 $MTCO_2e$ per year. Because evaluation of the program-level analysis includes the near- and mid-term development projects, the project-level impacts would also fall below the mass emission threshold of 2,936.47 $MTCO_2e$ per year. Therefore, project-level construction and operational GHG emissions would be less than significant.

GHG-2 Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Program-Level Analysis for Master Plan Update

The CSU CEQA Handbook states that if a project is located on a campus with a Climate Action Plan that qualifies for CEQA tiering and streamlining through the project's planning horizon year, then the Climate Action Plan should be used to evaluate the project's GHG emissions impact. The project should be analyzed for consistency with all relevant, applicable required actions in the Climate Action Plan in the form of a consistency analysis table. The consistency analysis can be qualitative. If the project is fully consistent with the Climate Action Plan, then the CEQA document for the project can conclude that its GHG emissions are less than significant. As discussed above, CSULB updated their CAAP in 2022 and adopted targets of 2030 for operational emissions and 2040 for commute-related emissions. Therefore, a qualitative consistency analysis is presented below.

The consistency analysis for implementation of the Master Plan Update is based on the 2020-2045 RTP/SCS, 2022 Scoping Plan, CSU Sustainability Policy, CSULB Sustainability Policy, and CSULB CAAP. The 2020-2045 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the SCAG region, which encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura). The 2020-2045 RTP/SCS incorporates local land use projections and circulation networks from city and county general plans. The 2022 Scoping Plan contains the GHG reductions, technology, and clean energy mandated by statutes. The CSU Sustainability Policy contains systemwide goals in 11 focus areas that would promote the sustainability of CSU's operations for the built environment. The CSULB CAAP contains energy efficiency goals and policies that would help implement energy efficient measures and would subsequently reduce energy consumption and GHG emissions within the campus.

Consistency With the SCAG 2020-2045 RTP/SCS

On September 3, 2020, the Regional Council of SCAG formally adopted the 2020-2045 RTP/SCS.

The 2020-2045 RTP/SCS includes performance goals that were adopted to help focus future investments on the best-performing projects; and different strategies to preserve, maintain, and optimize the performance of the existing transportation system. The SCAG 2020-2045 RTP/SCS is forecasted to help California reach its GHG reduction goals by reducing GHG emissions from passenger cars by eight percent below 2005 levels by 2020 and 19 percent by 2035 in accordance with the most recent CARB targets adopted in March 2018. Five key SCS strategies are included in the 2020-2045 RTP/SCS to help the region meet its regional VMT and GHG reduction goals, as required by the state. Table 3.6-5, Consistency with the 2020-2045 RTP/SCS, shows the project's consistency with these five strategies found within the 2020-2045 RTP/SCS. As shown therein, the Master Plan Update would be consistent with the GHG emission reduction strategies contained in the 2020-2045 RTP/SCS.

Table 3.6-5: Consistency with the 2020-2045 RTP/SCS

Reduction Strategy	Project Consistency Analysis
Focus Growth Near Destinations and Mobility Options	
• Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations • Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets • Plan for growth near transit investments and support implementation of first/last mile strategies • Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses • Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods • Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) • Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g., shared parking or smart parking)	**Consistent.** The CSULB campus is located within an urbanized area that is served by existing transit, sidewalks, and bicycle paths. Future developments projects implemented under the Master Plan Update would consist of infill development that would occur within the CSULB campus. The Master Plan Update would also provide improvements to the campus's pedestrian, bicycle, and all-wheel, on-campus transit, and vehicular networks to increase safety for pedestrians and bicyclists and enhance overall circulation and access as discussed in detail in Section 3.11. Transportation. Further, future development associated with the Master Plan Update could provide additional amenities on campus, such as post office services or childcare, that could reduce vehicle trips. Additionally, implementation of the Master Plan Update would include the Faculty and Staff Housing project on the main campus, which would provide 285 units for campus faculty and staff and their household members, that would reduce commute times and distances. Therefore, implementation of the Master Plan Update would focus growth near destinations and mobility options. Implementation of the Master Plan Update would be consistent with this reduction strategy.
Promote Diverse Housing Choices	
• Preserve and rehabilitate affordable housing and prevent displacement • Identify funding opportunities for new workforce and affordable housing development • Create incentives and reduce regulatory barriers for building context sensitive accessory dwelling units to increase housing supply • Provide support to local jurisdictions to streamline and lessen barriers to housing	**Consistent.** Implementation of the Master Plan Update would include the New Parkside Housing Village, Hillside College Renovations/Addition, and Beachside Housing projects, which would increase the number of student beds on campus by 1,602 beds. Additionally, the proposed Faculty and Staff Housing project would provide 285 units for faculty, staff, and their household members. These projects would provide additional housing for the campus population, and would complement the 2020-2045 RTP/SCS strategy to promote diverse housing choices. As such, the Master

Table 3.6-5: Consistency with the 2020-2045 RTP/SCS

development that supports reduction of greenhouse gas emissions	Plan Update would be consistent with this reduction strategy.
Leverage Technology Innovations	
• Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space • Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a "mobility wallet," an app-based system for storing transit and other multi-modal payments • Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation	**Consistent.** CSULB has a variety of existing technology innovations, including electrical vehicle chargers, increased online learning opportunities, bicycle parking, priority parking for clean air vehicles, and solar panels. Implementation of the Master Plan Update could include, in the long term, multiple mobility hub locations on campus to help serve as key transfer points for different modes, and destinations for services. Future mobility hubs would serve as a location where existing mobility services would converge. Some individual development projects (i.e., all new buildings and major renovations) implemented under the Master Plan Update would meet or exceed minimum requirements equivalent to LEED Silver, with several sustainable design features proposed, including the use of photovoltaic panels for new buildings as required by Title 24 standards. Additionally, CSULB would pursue Net Zero Energy for the proposed buildings and would exceed the energy code requirements for the building by ten percent. Therefore, the Master Plan Update would leverage technology innovations to help the city, county, and state meet their GHG reduction goals. The Master Plan Update would be consistent with this reduction strategy.
Support Implementation of Sustainability Policies	
• Pursue funding opportunities to support local sustainable development implementation projects that reduce greenhouse gas emissions • Support statewide legislation that reduces barriers to new construction and that incentivizes development near transit corridors and stations • Support local jurisdictions in the establishment of Enhanced Infrastructure Financing Districts (EIFDs), Community Revitalization and Investment Authorities (CRIAs), or other tax increment or value capture tools to finance sustainable infrastructure and development projects, including parks and open space • Work with local jurisdictions/communities to identify opportunities and assess barriers to implement sustainability strategies • Enhance partnerships with other planning organizations to promote resources and best practices in the SCAG region • Continue to support long range planning	**Consistent.** CSULB is committed to sustainability and the reduction of GHG emissions. CSULB will continue to foster partnership with the City of Long Beach and other community organizations to meet its climate goals, but is focused on strategies to reduce its own GHG emissions within the campus. As previously discussed, some individual development projects implemented under the proposed Master Plan development would meet or exceed minimum requirements equivalent to LEED Silver and a goal of the Master Plan Update is to achieve net-zero emissions. Implementation of the Master Plan Update would not conflict with any of the strategies to support implementation of sustainability policies. Instead, CSULB's commitment would complement local, regional, and state reduction goals. Thus, the Master Plan Update would be consistent with this reduction strategy.

Table 3.6-5: Consistency with the 2020-2045 RTP/SCS

efforts by local jurisdictions • Provide educational opportunities to local decisions makers and staff on new tools, best practices and policies related to implementing the Sustainable Communities Strategy	
Promote a Green Region	
• Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards • Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration • Integrate local food production into the regional landscape • Promote more resource efficient development focused on conservation, recycling and reclamation • Preserve, enhance and restore regional wildlife connectivity • Reduce consumption of resource areas, including agricultural land • Identify ways to improve access to public park space	**Consistent.** CSULB has prepared its own CAAP, which would serve as a roadmap to minimize GHG emissions from campus operations. Implementation of the Master Plan Update would include proposed improvements to landscaping and open space, including building upon the existing park-like setting to enhance the campus's urban forest, which offers aesthetic, environmental, and wellness benefits. Additionally, projects implemented under the Master Plan Update would be required to exceed the 2022 Title 24 standards by 10 percent and comply with the CALGreen Code, which would help reduce energy consumption and reduce GHG emissions. Thus, the Master Plan Update would support resource efficient development that reduces energy consumption and GHG emissions. The Master Plan Update would be consistent with this reduction strategy.

Source: Southern California Association of Governments, September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.

Consistency With the 2022 CARB Scoping Plan Update

The 2022 Scoping Plan identifies reduction measures necessary to achieve the goal of carbon neutrality by 2045 or earlier. Actions that reduce GHG emissions are identified for each AB 32 inventory sector. Table 3.6-6, Consistency with the 2022 Scoping Plan: AB 32 GHG Inventory Sectors, provides an evaluation of applicable reduction actions/strategies by emissions source category to determine how the project would be consistent with or exceed reduction actions/strategies outlined in the 2022 Scoping Plan.

Table 3.6-6: Consistency with the 2022 Scoping Plan: AB 32 GHG Inventory Sectors

Actions and Strategies	Project Consistency Analysis
Smart Growth / Vehicles Miles Traveled	
Reduce VMT per capita to 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045.	**Consistent**. The Master Plan Update provides for planned improvements phased through the 2035 planning horizon. CSULB would implement several Transportation Demand Management (TDM) strategies aimed at reducing vehicle trips to and from campus and their resulting emissions. TDM measures would reduce vehicle trips and prioritize pedestrian and bicycle movement, encourage greater use of transit, pedestrian, and bicycle travel, and reduce dependence on automobiles at the campus. Additionally, as discussed in Section 3.11, Transportation, total network

Table 3.6-6: Consistency with the 2022 Scoping Plan: AB 32 GHG Inventory Sectors

Actions and Strategies	Project Consistency Analysis
	VMT would be reduced, indicating that implementation of the Master Plan Update would result in more efficient travel patterns across the region, As such, implementation of the Master Plan Update would be consistent with this action.
New Residential and Commercial Buildings	
All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	**Consistent**. CSULB is currently in the process of phasing out natural gas use and would not utilize natural gas on campus by 2035. As such, implementation of the Master Plan Update would be consistent with this action.
Food Products	
Achieve 7.5% of energy demand electrified directly and/or indirectly by 2030 and 75% by 2045.	**Consistent**. As mentioned above, there would be no natural gas used for heating and cooking on-site by 2035. Additionally, implementation of the Master Plan Update would include installation of solar panels for some projects. As such, implementation of the Master Plan Update would be consistent with this action.
Non-combustion Methane Emissions	
Divert 75% of organic waste from landfills by 2025.	**Consistent**. Implementation of the Master Plan Update would continue to implement waste reduction, recycling, and composting programs including the Waste Not program in accordance with AB 341, which requires 75% waste diversion. Specifically, the Master Plan Update proposes to achieve zero waste, including organic materials, to landfills by 2030 and would focus on minimizing waste. As such, implementation of the Master Plan Update would be consistent with this action.

Source: California Air Resources Board, December 2022, *2022 Scoping Plan for Achieving Carbon Neutrality*.

Consistency With the CSU Sustainability Policy

The CSU Sustainability Policy encompasses the tenets of human and ecological health, social justice, economic vitality, and promotes the environmental sustainability of CSU's operations for the built environment. The policy focuses on the following 11 areas of sustainability: University Sustainability; Climate Action Plan; Energy Resilience and Procurement; Energy Conservation, Carbon Reduction, and Utility Management; Water Conservation; Sustainable Procurement; Waste Management; Sustainable Food Service; Sustainable Building and Land Practices; Physical Plant Management; and Transportation. Implementation of the Master Plan Update is required to be consistent with the applicable policies set forth in the CSU Sustainability Policy. For instance, the Master Plan Update would comply with the Climate Action Plan goals to reduce systemwide facility carbon emissions through reducing GHG emissions through the buildout of the Master Plan Update (refer to Table 3.6-3). The Master Plan Update would comply with the Energy Resilience and Procurement goals through increasing solar generation and reducing natural gas usage throughout the horizon year. The Master Plan Update would comply with the Energy Conservation, Carbon Reduction and Utility Management and Sustainable Building & Lands Practices goals by meeting the state building code requirements, including use of energy-efficient HVAC systems, installing LED lighting, retrofitting campus water fixtures to low-flow plumbing equipment, and compliance with waste recycling requirements. Additionally, the Master Plan Update would be consistent with Water Conservation goals by installing drought tolerant or native landscaping, reducing turf, installing controls to optimize irrigation water use, reducing

water usage, and promoting the use of reclaimed/recycled water. Lastly, implementation of the Master Plan Update would comply with Transportation goals to promote alternative transportation through pedestrian and bicycle network improvements on the main campus, and would reduce and reduce total network VMT, as discussed in detail in Section 3.11, Transportation.

Consistency With the CSULB 2022 Climate Action and Adaptation Plan

The CSULB CAAP includes a Carbon Neutrality Roadmap as a technical appendix in support of achieving carbon neutrality by 2030 and 2040. This plan is focused specifically on addressing Scope 1, 2, and 3 emissions which are created by transportation to and from campus (60 percent), the need to heat, cool, and power campus facilities via purchased electricity (17 percent) and combustion of natural gas (11 percent). Implementation of the Master Plan Update would support progress towards meeting the carbon neutrality goal by promoting alternative transportation methods such as bicycling and walking, and reducing overall total network VMT, as discussed in Section 3.11, Transportation. To support mode shift from single occupancy vehicles and encourage alternative transportation methods, the university would develop a Transportation Demand Management (TDM) Plan. The TDM Plan would reduce vehicle trips, prioritize pedestrian and bicycle movement, encourage greater use of transit, pedestrian, and bicycle travel, and reduce dependence on automobiles at the campus.

Implementation of the Master Plan Update would include incorporation of energy-efficiency, sustainability, water- and waste-efficiency, and resiliency features to achieve a Net Zero Energy Rating and a LEED Gold, or better, building rating for certain buildings. As required by the CSU Sustainability Policy, all new buildings and major renovations would at least meet or exceed the minimum requirements equivalent to LEED Silver. Building envelopes for new buildings would be configured with several sustainable design features including the use of photovoltaic panels for new buildings as required by Title 24 standards, the use of reclaimed water for water closest and irrigation, and the installation of dry wells to collect storm water flows from the site to comply with low impact development (LID) requirements. The development projects associated with the Master Plan Update would be required to exceed Title 24 Building Energy Efficiency Standards by 10 percent, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the latest Title 24 standards would significantly reduce energy consumption. The Title 24 Building Energy Efficiency Standards are updated every three years and become more stringent between each update; therefore, complying with and exceeding the latest Title 24 standards would make the new buildings on campus more energy efficient than existing buildings built under the earlier versions of the Title 24 standards. In addition, CSULB currently generates solar energy on campus, and would increase their solar generation throughout the future years. By complying with the CSULB CAAP, the Master Plan Update would achieve the 2030 and 2040 climate neutrality goals by mitigating the campus carbon emissions as well as strategies for building adaptive capacity into the campus infrastructure and community. Therefore, implementation of the Master Plan Update would result in a less than significant impact related to conflict with GHG reduction plans.

Project-Level Analysis for Near- and Mid-Term Development Projects

The near- and mid-term development projects consisting of renovation, replacement, and new projects would comply with the CSU Sustainability Policy and the CSULB CAAP through meeting the state building code requirements, including use of energy-efficient HVAC systems, installing LED lighting, retrofitting campus water fixtures to low-flow plumbing equipment, and compliance with waste recycling requirements. New and replacement projects would be required to exceed Title 24 standards by 10 percent and comply with the CALGreen Code, which would help reduce

energy consumption and reduce GHG emissions. Renovation projects consisting of interior and exterior renovations would comply with the CSU standards set forth in PolicyStat such that the renovated buildings are designed for optimum energy utilization and in compliance with all applicable energy codes (Enhanced Title 24 Energy Codes) and regulations. For renovation projects that include mobility, circulation, and open space uses and athletic facilities uses, projects would be designed to include drought tolerant landscaping/turf, reduce the need for irrigation, or enhance the pedestrian or bicycle network, which would further reduce GHG emissions. Additionally, the Central Plant Decarbonization project would replace equipment at the existing Central Plant with electrified equipment, which would be consistent with the CSU Sustainability Policy and the CSULB CAAP.

In addition, the development of near- and mid-term projects would also support progress towards meeting the carbon neutrality goal through implementation of various measures, which would minimize electricity, natural gas, and petroleum consumption. Regarding consistency with the SCAG 2020-2045 RTP/SCS and 2022 Scoping Plan, the near- and mid-term projects would not result in significant population growth that would exceed SCAG growth projections, as discussed in detail in Section 3.9, Population and Housing, and would not conflict with goals of the SCAG 2020-2045 RTP/SCS, as shown in Table 3.6-5. Furthermore, as previously discussed under Threshold GHG-1, the net GHG emissions of the near- and mid-term projects would not exceed the Campus-Specific Mass Emission Threshold of 2,936.47 MTCO2e per year. As the near- and mid-term projects were evaluated as a part of the buildout of the Master Plan Update, the near- and mid-term projects included in the Master Plan Update would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 and 2040 and beyond; therefore, the project-level impacts would be less than significant.

3.6.5 Mitigation Measures

No mitigation measures are required.

3.6.6 Level of Significance After Mitigation

Development under the Master Plan Update would result in less than significant impacts related to GHG emissions.

3.6.7 Cumulative Impacts

Project-related GHG emissions are not confined to the air basin within which a project site is located; instead, GHG emissions are dispersed worldwide. GHG impacts are recognized as exclusively cumulative impacts, and there are no non-cumulative GHG emission impacts from a climate change perspective. No single project is large enough to result in a measurable increase in global concentrations of GHG emissions. Therefore, impacts identified under Threshold GHG-1 are not project-specific impacts to global climate change, but rather, the proposed project's contribution to this cumulative impact. As such, significant direct impacts associated with the project also serve as the project's cumulative impact.

As analyzed under Thresholds GHG-1 and GHG-2, implementation of the Master Plan Update would be consistent with applicable policies and guidance contained in the 2020-2045 RTP/SCS, CARB's 2022 Scoping Plan, the CSU Sustainability Policy, and the CSULB Sustainability Policy and CAAP.

The net emissions generated by implementation of the Master Plan Update, which would not exceed the project-related campus-specific mass emission threshold of 2,936.47 $MTCO_2e$ per year, are considered consistent with state/CARB 2045 net-zero targets. Thus, implementation of

the Master Plan Update would not result in a cumulatively considerable contribution to a significant cumulative GHG emissions impact, and the cumulative impact would be less than significant.

3.7 HYDROLOGY AND WATER QUALITY

This section describes the hydrology and water quality conditions of the CSULB main campus and the Beachside Village property and evaluates the potential impacts that could occur with implementation of the Master Plan Update. This section identifies watershed characteristics, existing water quality, groundwater, stormwater, and flood hazard conditions, and presents the regulatory requirements pertaining to hydrology and water quality. The analysis evaluates potential direct and indirect impacts from implementation of the Master Plan Update.

As discussed further in Section 3.7.3, Methodology, the CEQA Guidelines Appendix G checklist questions for hydrology and water quality related to substantial alteration of existing drainage such that it would impede or redirect flood flows; and release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones, were found to have less than significant impacts in the Initial Study prepared for the project. Thus, these issues are not discussed in detail in this EIR.

No comments related to hydrology and water quality were received in response to the NOP. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.7.1 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 USC § 1251 *et seq*.), as amended by the Water Quality Act of 1987, is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (USEPA) as well as the states. The USEPA is the lead federal agency responsible for water quality management. Key sections of the CWA are as follows:

Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the state of California is required to develop a list of impaired water bodies that do not meet water quality standards and objectives and establish total maximum daily loads (TMDL) for each pollutant/stressor.

Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the act.

Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB), which have several programs that implement individual and general permits related to construction activities, municipal stormwater discharges, and various kinds of non-stormwater discharges.

Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers (USACE) and the USEPA.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level, this includes the USEPA and the USACE, while at the state level, with the exception

of tribal lands, this includes the California Environmental Protection Agency (CalEPA) and its sub-agencies, including the SWRCB.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with planning, mitigation, response, and recovery for disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and additional programs that aid with mitigating future damages from natural hazards. FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a one percent chance of flooding in each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain if the development is expected to increase flood elevation by one foot or more.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (California Water Code Section 13000 *et seq*.; California Code of Regulations. Title 23, Chapters 3 and 15) is the primary state regulation addressing water quality and waste discharges on land, and provides a comprehensive water-quality management system for the protection of California waters. The Act grants the SWRCB and each of the nine RWQCBs power to protect water quality. Under the Act, any entity that discharges waste or proposes to discharge waste that may affect the state's water quality must file a report of the discharge with the appropriate RWQCB. Pursuant to the Act, the RWQCB may then prescribe waste discharge requirements that add conditions related to control of the discharge. Porter-Cologne defines "waste" broadly, and the term has been applied to a diverse array of materials, including nonpoint source pollution. When regulating discharges that are included in the CWA, the state essentially treats Waste Discharge Requirements (WDRs) and NPDES as a single permitting vehicle. In April 1991, the SWRCB and other state environmental agencies were incorporated into CalEPA.

NPDES Municipal Storm Water Permitting Program

The Municipal Storm Water Permitting Program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). The source of stormwater comes from rain or snowmelt that runs off surfaces such as rooftops, paved streets, highways, or parking lots and may carry pollutants such as oil, pesticides, herbicides, sediment, trash, bacteria, and metals. The runoff can then drain directly into a local stream, lake, or bay. Often, the runoff drains into storm drains that eventually drain untreated runoff into a local water body.

The RWQCB regulates urban runoff discharges under the NPDES permit regulations. NPDES permitting requirements cover runoff discharged from point (e.g., industrial outfall discharges) and nonpoint (e.g., stormwater runoff) sources. The RWQCB implements the NPDES program by issuing construction and industrial discharge permits. CSULB is considered a Non-Traditional MS4 permittee and is subject to the SWRCB's Water Quality Order No. 2013-0001-DWQ, NPDES General Permit No. CAS000004 for Waste Discharge Requirements for Storm Water Discharges

from Small MS4s.[1] The Small MS4 permit requires the implementation of specific Best Management Practices (BMPs) consistent with the California Stormwater Quality Association Best Management Practice Handbooks or equivalent as well as monitoring and reporting on stormwater management activities, including those during construction and post-construction.[2] Small MS4 BMPs include measures for erosion control (e.g., chemical stabilization, compost blankets, and mulching), runoff control (e.g., check dams, grass-lined channels, land grading), and sediment control (e.g., brush barriers, compost filter berms, and fiber rolls).[3]

The Small MS4 Permit also requires projects that create and/or replace 5,000 square feet or more of impervious surface to implement low impact development (LID) standards. LID is a stormwater management approach where the primary goal is to preserve a site's predevelopment hydrology. The effects of changes to runoff patterns caused by land use modifications, or hydromodification, can be reduced through the use of LID site planning (e.g., reduce impervious areas, preserve open space, minimize land disturbance) and structural BMPs (e.g., bioretention swales, pervious pavements, cisterns), which are intended to promote infiltration, storage, evapotranspiration, and other processes that mimic the site's natural hydrology.[4]

Construction General Permit (Order No. 2009-0009-DWQ)

In August 1999, the SWRCB adopted the statewide NPDES General Permit for stormwater discharges associated with construction activity. CSULB is subject to the California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) Order No. 2009-0009-DWQ as amended in 2010 and 2012 (NPDES No. CAS000002) issued by the SWRCB.[5] The permit requires that, for construction activities disturbing more than one acre of land, a Stormwater Pollution Prevention Plan (SWPPP) is prepared and implemented. BMPs are required as part of a SWPPP, and typically include the following activities, practices, and/or procedures, to prevent or reduce water pollution and control runoff:

- Erosion control BMPs: preservation of existing vegetation, hydraulic mulching, and wind erosion control;
- Sediment control BMPs: silt fences, storm drain inlet protection, and street sweeping;
- Non-stormwater BMPs: water conservation practices, concrete finishing, vehicle and equipment cleaning; and
- Materials management BMPs: stockpile management, hazardous waste management, and contaminated soil management.

California Water Plan

The California Water Plan, required by the California Water Code Section 10005(a) and prepared by the Department of Water Resources (DWR), is the state's strategic plan for managing and developing statewide water resources for current and future generations. The California Water

1 State Water Resources Control Board, 2018, *Non-Traditional Small MS4 Permittees*.
2 State Water Resources Control Board, 2022, *Phase II Small Municipal Separate Storm Sewer System (MS4) Program, Section F – Provision for Non-Traditional Small MS4 Permittees*.
3 U.S. Environmental Protection Agency, 2022, National Menu of Best Management Practices (BMPs) for Stormwater-Construction, available at: https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater-construction, accessed July 17, 2023.
4 State Water Resources Control Board, 2011, Frequently Asked Questions about Low Impact Development.
5 State Water Resources Control Board, 2012, *NPDES General Permit For Storm Water Discharges Associated With Construction and Land Disturbance Activities*.

Plan provides a framework for water managers, legislators, and the public to consider options and make decisions regarding California's future for water. The plan presents basic data and information on California's water resources, including water supply evaluations and assessments of agricultural, urban, and environmental water uses to quantify the gap between water supply and use. The California Water Plan also identifies and evaluates existing and proposed statewide water demand management and water supply augmentation programs and projects to address the state's water needs. The plan is updated every five years, most recently with the California Water Plan Update 2018 (Update 2018). Update 2018 recommends actions, funding, and an investment strategy to strengthen the efforts of water and resource managers, planners, and decision-makers in addressing California's most pressing water resource challenges.

Sustainable Groundwater Management Act

In 2014, California enacted the Sustainable Groundwater Management Act (California Water Code Section10720-10737.8 *et seq*.) to protect the state's groundwater resources in the long term. The legislation provides for the sustainable management of groundwater by requiring local agencies to form groundwater sustainability agencies (GSAs) and to develop and implement groundwater sustainability plans (GSPs). The act requires GSAs and GSPs for all groundwater basins identified by the DWR as high or medium priority. The CSULB campus is located within a very low priority groundwater basin.[6] Additionally, the legislation establishes criteria for the sustainable management of groundwater and authorizes DWR to establish BMPs for groundwater.

California State University

California State University, Long Beach Landscape Master Plan

The 2012 CSULB Landscape Master Plan identifies important aspects of the campus landscape and provides recommendations for future campus enhancement and preservation. The plan also provides the regional and local context regarding stormwater management for the CSULB campus. The plan recommends initiatives for stormwater treatment, such as inlet basin filters, a roof filtering system, and bioswales designed for groundwater recharge.

California State University, Long Beach Water Action Plan

The 2014 CSULB Water Action Plan (updated in 2017) mandated a reduction in water consumption by 10 percent by 2016 and by 20 percent by 2020 from its 2013 baseline. Beach Building Services leads the coordination and implementation of the plan. CSULB's goals are to reduce its reliance on potable water and overall campus water use. The plan seeks to meet these goals through several objectives, such as adopting and implementing BMPs for all campus operations, developing a communication plan to encourage university-wide water conservation, and planning future campus development for water resiliency. The university has implemented water conservation projects as part of its overall sustainability goals which include the transition to drought tolerant landscaping, conversion of landscape areas to drip irrigation, use of waterless and low flow urinals, installation of touch free automatic faucets with low flow restrictors, installation weather based central irrigation controllers, and the use of reclaimed water for irrigation.

[6] California Department of Water Resources, Basin Prioritization, available at: https://water.ca.gov/Programs/Groundwater-Management/Basin-Prioritization, accessed January 20, 2023.

California State University, Long Beach Storm Water Management Plan

CSULB's Storm Water Management Plan (SWMP) was developed to comply with the USEPA's Phase II NPDES requirements promulgated under the Clean Water Act. The SWMP applies to the entire CSULB campus and seeks to: (1) identify pollutant sources potentially affecting the quality and quantity of stormwater discharges; (2) identify BMPs for municipal and small construction activities implemented by CSULB staff and contractors; and (3) provide measurable goals for the implementation of the SWMP to reduce the discharge of the identified pollutants into the storm drain system and associated water ways including Bouton Creek. Based on the CSULB SWMP, BMPs are to be reviewed annually and updated as appropriate to comply with any additions or changes to NPDES permit requirements. Updates to the CSULB SWMP are provided annually to the state's Water Boards Stormwater Multiple Application & Reporting Tracking System (SMARTS) database in the form of a Program Effectiveness Assessment and Improvement Plan. Based on the 2022 Program Effectiveness Assessment and Improvement Plan, good housekeeping and trash removal are key BMPs that are routinely implemented and evaluated. Contractor requirements are included for pollution prevention, and BMPs for construction sites are implemented consistently.[7] Typical types of BMPs include the following:

- Treatment controls;
- Operating procedures;
- Practices to control site runoff, spills and leaks, sludge or waste disposal, or drainage from raw material storage; and
- Structural and non-structural BMPs, such as conservation of natural and permeable areas, permeable pavers, rooftop runoff infiltration galleries, and mechanical storm drain filters.

Regional

Basin Plan for the Los Angeles Region

Since 1973, the SWRCB and its nine RWQCBs have been responsible for administering permitted discharge into the waters of California. Permitted discharges must be compliant with the regional Basin Plan. Each RWQCB implements the Basin Plan to ensure that projects consider regional beneficial uses, water quality objectives, and water quality problems. The Los Angeles RWQCB's Basin Plan specifically designates beneficial uses for surface waters and ground waters, sets narrative and numerical objectives that must be met in order to protect the beneficial uses and conform to the state's antidegradation policy, and describes implementation programs to protect all waters in the region. The Basin Plan provides all relevant information necessary to carry out federal mandates for the antidegradation policy, 303(d) listing of impaired waters, and related TMDLs, and provides information relative to NPDES and WDR permit limits.

3.7.2 Environmental Setting

The CSULB main campus and Beachside Village property are located in Los Angeles County within the jurisdiction of the Los Angeles RWCQB (Regional Board 4). This section describes the regional hydrological conditions as well as the local conditions of the CSULB main campus and Beachside Village property as it relates to hydrology, water quality, groundwater, water supplies, stormwater, and flooding. The CSULB main campus is located approximately 2.5 miles north of

[7] California Water Boards Stormwater Multiple Application & Reporting Tracking System, Attachment ID 3226034, CSULB PEAIP Annual Report FY 2021-2022, available at: https://smarts.waterboards.ca.gov/smarts/faces/PublicDataAccess/PublicNoiSearchResults.xhtml, accessed July 31, 2023.

the Pacific Ocean and along the western flank of the Peninsular Ranges geomorphic province.

Watershed Characteristics

The CSULB main campus and Beachside Village property are located within the lower coastal plain region of the southwestern portion of the greater Los Angeles basin. This basin is bound by the Santa Monica and San Gabriel Mountains to the north, the Pacific Ocean to the west, the Santa Ana Mountains to the east, and partially by the San Joaquin Hills to the southeast.[8] The basin is part of the highly urbanized Los Angeles region, with the Los Angeles River being the largest stream on the plain draining the San Fernando Valley and much of the San Gabriel Mountains.

The CSULB main campus and Beachside Village property are located within the San Gabriel River watershed, which receives drainage from 689 square miles of eastern Los Angeles County. The San Gabriel River watershed is bound by the San Gabriel Mountains to the north, most of San Bernardino and Orange counties to the east, the division of the Los Angeles River from the San Gabriel River to the west, and the Pacific Ocean to the south. Nearby watersheds include the Antelope watershed to the north, the Santa Ana River watershed to the east, and the Los Angeles River watershed to the west. Major tributaries to the San Gabriel River include Walnut Creek, San Jose Creek, Coyote Creek, and numerous storm drains entering from the 19 cities that the San Gabriel River passes through. The river's headwaters originate in the San Gabriel Mountains, and most of its upper reaches consist of extensive areas of undisturbed riparian and woodland habitats. The majority of the watershed of the West Fork and East Fork of the river is set aside as a wilderness area, while other areas in the upper watershed are subject to heavy recreational use and contain a series of flood control dams. The middle of the watershed contains large spreading grounds used for groundwater recharge. The watershed is connected to the Los Angeles River through the Whittier Narrows Reservoir. The lower portion of the river flows through a concrete-lined channel in a heavily urbanized portion of Los Angeles County before becoming a soft bottom channel near the ocean in the City of Long Beach.[9] The watersheds are shown in Figure 3.7-1.

[8] Yerkes, Robert F., Thane H. McCulloh, J.E. Schoellhamer, and John G. Vedder, 1965, *Geology of the Los Angeles Basin California—An Introduction*.

[9] California Water Boards, San Gabriel River Watershed, available at: https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/Water_Quality_and_Watersheds/san_gabriel_river_watershed/summary.shtml, accessed August 2, 2022.

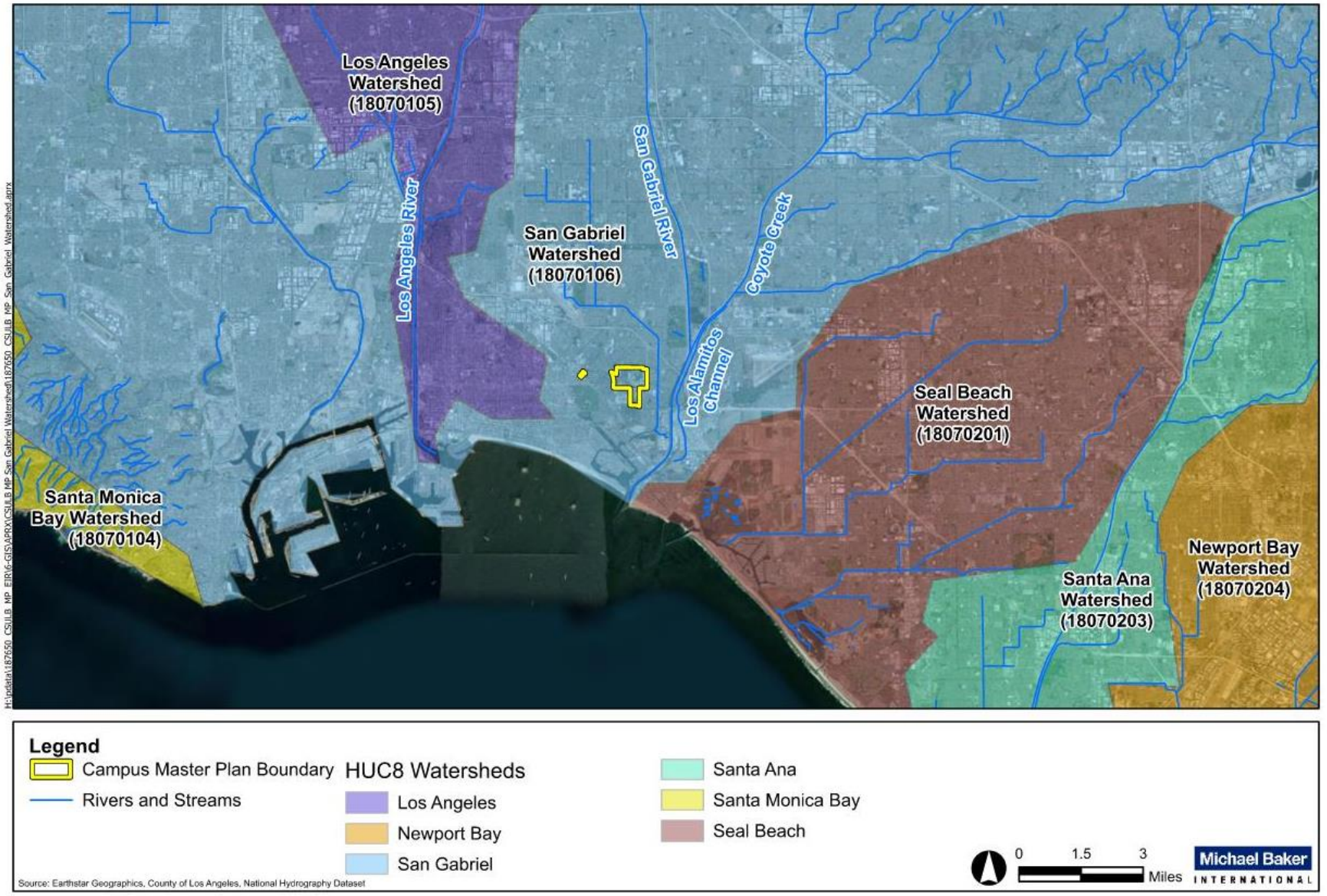

Figure 3.7-1: San Gabriel Watershed

Campus Hydrology

Bouton Creek, a Los Angeles County Flood Control District channel, runs diagonally and southeasterly across the CSULB main campus, and is a 35-foot wide and 8.5 feet deep open concrete box channel. The elevation of the channel bed is approximately one inch lower at the side than the center. Approximately 0.25 miles to the southeast, Bouton Creek flows into Los Cerritos Channel, which originates in Long Beach, flows near the eastern city boundary, and discharges into the Alamitos Bay. The Los Cerritos Channel and the San Gabriel River lie just east of the CSULB main campus, both of which are major stormwater drainage systems.

Water Quality

Impaired Water Bodies

The water quality of streams, creeks, ponds, and other surface water bodies can be greatly affected by pollution carried in contaminated surface water runoff. The middle and lower areas of the San Gabriel River watershed have impaired water quality due to dense clusters of residential and commercial activities.[10] Tertiary effluent, sourced from liquid waste or sewage discharge from several sewage treatment plants, enters the river in its partially channelized middle reaches, while two power generating stations discharge cooling water into the river's estuary. In addition, several landfills are located in the watershed. The watershed is covered under two municipal stormwater NPDES permits, with a majority of the 58 NPDES permittees in the watershed discharging directly to the San Gabriel River.

Section 303(d) of the federal CWA requires states to identify waterbodies that are "impaired," or those that do not meet water quality standards and are not supporting their beneficial uses. TMDLs are then designed to serve as pollution control plans for these specific pollutants. As provided in Table 3.7-1, several portions of the San Gabriel River are impaired with various pollutants and some TMDLs have already been developed for these impairments. None of the impaired waterbodies are located near the CSULB main campus or Beachside Village property.

Table 3.7-1: San Gabriel River Watershed Impaired Waters

Water Body Name	Pollutant	Pollutant Category	TMDL Status
San Gabriel River Estuary	• Copper • Dioxin • Nickel • Oxygen, dissolved	• Metals/Metalloids • Other organics • Metals/Metalloids • Nutrients	• TMDL completed • TMDL required • TMDL required • TMDL required
San Gabriel River Reach 1 (Estuary to Firestone)	• Coliform bacteria • pH	• Pathogens • Miscellaneous	• TMDL required • TMDL required
San Gabriel River Reach 2 (Firestone to Whittier Narrows Dam	• Coliform Bacteria • Cyanide • Lead	• Pathogens • Other Inorganics • Metals/Metalloids	• TMDL required • TMDL required • TMDL completed

[10] California Water Boards, San Gabriel River Watershed, available at: https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/Water_Quality_and_Watersheds/san_gabriel_river_watershed/summary.shtml, accessed August 2022.

Table 3.7-1: San Gabriel River Watershed Impaired Waters

Water Body Name	Pollutant	Pollutant Category	TMDL Status
San Gabriel River Reach 3 (Whittier Narrows to Ramona)	• Indicator Bacteria	• Pathogens	• TMDL required
San Gabriel River, East Fork	Trash	Trash	TMDL completed

Source: California Environmental Protection Agency, 2022, San Gabriel River Watershed Impaired Waters, available at: https://www.waterboards.ca.gov/rwqcb4/water_issues/programs/regional_program/Water_Quality_and_Watersheds/san_gabriel_river_watershed/impaired_waters.shtml.

Campus Surface Water Quality

The quality of surface water is primarily a function of land uses in the vicinity of the campus. Stormwater runoff in urban areas typically contains oils, grease, fuel, antifreeze, and byproducts of combustion (such as lead, cadmium, nickel, and other metals), as well as nutrients, sediments, and other pollutants, such as fertilizers and pesticides. Table 3.7-2 lists potential pollutant activities and the resulting pollutants of concern specific to the CSULB main campus and Beachside Village property.

Table 3.7-2: Potential Pollutant Activity or Sources List

Activity/Source	Pollutants of Concern
Building Maintenance (washing, graffiti abatement)	Wash water, paint chips, acidic/caustic cleaning products, dirt and sediment
Chemical Spills	Various cleaning compounds, diesel, paint, hazardous materials, vehicle fluids
Construction / Renovation Activities	Concrete, drywall, paint, hydraulic fluids, vehicle fluids, sediment
Erosion	Sediment, organic matter
Food Service Operations	Wash-water, food residue, oil and grease
Grounds Maintenance	Green waste, fuel, oil, pesticides, herbicides, sediment
Impervious Areas	Increased flows and pollutant loading
Litter and Debris	Litter and debris
Loading/Unloading Areas	Petroleum products, fertilizers, pesticides, herbicides, cleaning solutions, paint
Outdoor Storage of Raw Materials	Sand, asphalt, soil, pesticides, herbicides, fertilizer, paint, solvents, fuel
Painting (indoor)	Paint or rinse water (oil and water based), paint thinner, solvents
Painting (outdoor)	Paint or rinse water (oil and water based), paint thinner, solvents
Parking Lot Runoff	Oil/grease, vehicle fluids, litter, heavy metals
Sewer Line Blockages	Raw sewage
Sewer Line Seepage	Raw sewage
Trash Storage Areas	Organic materials, hazardous materials, litter, debris
On-Campus Vehicle/Equipment Washing	Cleaning products, oil/grease, vehicle fluids

Table 3.7-2: Potential Pollutant Activity or Sources List

Activity/Source	Pollutants of Concern
Utility Line Maintenance and Repairs (water/ irrigation/ sewer)	Chloramines, chlorine, sediment, adhesive cements, primers & fire protection systems
Animal Feces	Coliform bacteria
Agricultural and Pest Control Activities	Fertilizers, pesticides, herbicides
Fleet Maintenance & Repair	Oil / Grease, vehicle fluids, fuels, cleaning products

Source: California State University, Long Beach, n.d., *Storm Water Management Plan*.

Groundwater

The CSULB main campus and Beachside Village property are located within the Central Basin, which is a groundwater aquifer spanning approximately 277 square miles in the mostly urbanized southern area of Los Angeles County. The Central Basin is bordered to the north by a surface divide called the La Brea High and to the northeast and east by tertiary rocks of the Elysian, Repetto, Merced and Puente Hills. The southeast boundary between the Central Basin and Orange County Groundwater Basin generally follows Coyote Creek, which is a regional drainage province boundary. The southwest boundary is formed by the Newport Inglewood fault system and the associated folded rocks of the Newport Inglewood uplift. The Los Angeles and San Gabriel Rivers drain the inland basins and flow across the surface of the Central Basin and eventually to the Pacific Ocean. Average precipitation throughout the Central Basin is approximately 12 inches, with a range from 11 to 13 inches.

The Central Basin is historically divided into forebay and pressure areas, with the Los Angeles forebay and the Montebello forebay. Groundwater replenishes the aquifers mostly through these forebay areas through surface and subsurface flow and direct percolation of precipitation, stream flow, and applied water. Natural replenishment is largely supplied from the surface inflow through the Whittier Narrows. Percolation into the Los Angeles forebay is restricted due to paving and surface development. Artificial recharge is supplied from imported water purchased from the Metropolitan Water District (MWD) and recycled water from the Whittier and San Jose Treatment Plants. Groundwater levels varied over a range of about 25 feet between 1961 and 1977 and have varied through a range of about 5 to 10 feet since 1996.[11] As a low priority groundwater basin, the Central Basin is not subject to groundwater sustainability plan.

Based on geotechnical reports conducted for various projects across the CSULB main campus, groundwater conditions vary across the CSULB main campus due to stratigraphic and hydrologic conditions and may change over time as a consequence of seasonal and meteorological fluctuations. The historical high groundwater level is considered to be at a depth of less than 10 feet below ground surface.

Groundwater Quality

The Long Beach Water Department (LBWD) treats the groundwater pumped from active wells around the Long Beach and Lakewood areas at their Groundwater Treatment Plant. As a result of required groundwater quality monitoring, the LBWD discovered 14 groundwater wells that were deemed vulnerable to perfluorooctanoic acid and perfluorooctane sulfonic acid, together known as per- and polyfluoroalkyl substances. The established notification levels for these two substances are 6.5 parts per trillion for perfluorooctane sulfonic acid and 5.1 parts per trillion for

[11] California Water Boards, 2004, *Coastal Plain of Los Angeles Groundwater Basin, Central Subbasin*.

perfluorooctanoic acid. As of 2021, the LBWD has not detected these substances in the groundwater since monitoring began in 2019.[12]

Campus Groundwater Supplies

The CSULB main campus and Beachside Village property combined domestic water and fire water system is solely served by LBWD's water system. The LBWD has three major sources of water: groundwater from the Central Basin Aquifer, imported water from MWD, and recycled water from the Long Beach Water Reclamation Plant. Roughly 60 percent of LBWD's water supply is sourced from local groundwater, while the rest of the water supply is sourced from imported water from the Colorado River and Northern California's Bay Delta region.

LBWD has the rights to pump 32,692 acre-feet of groundwater per year from the Central Basin Aquifer. The Central Basin Aquifer has been historically over-drafted and has since experienced strict limitations to groundwater extractions. However, due to the maintenance of sufficient storage in the Central Basin Aquifer, availability of non-MWD sources for replenishment, and restrictions of extractions, groundwater supplies from the aquifer are reliable, even during multiyear droughts. In addition, LBWD can extract groundwater it has stored in the aquifers, up to 20 percent of its water rights, and can extract up to another 20 percent in emergencies.[13]

Campus Stormwater Drainage

The existing CSULB main campus storm drainage system consists of several networks of reinforced concrete pipe and polyvinyl chloride pipe that were installed in the 1940s. The pipes collect stormwater from catch basins and area drains throughout the CSULB main campus and empty into the Bouton Creek Channel. There is also an area in the southeast section of the main campus that directs stormwater to pipes that connect to a City of Long Beach storm drain line near Seventh Street and East Campus Drive. In addition to stormwater flows generated on-site, the CSULB main campus also receives flows from the adjacent Veteran's Affairs Medical Center complex.[14]

There are approximately 200 point sources that drain into the storm drain system from the main campus.[15] These point source drainage areas include streets, parking lots, loading docks, roofs, athletics fields, and other surfaces that receive rainwater. Stormwater runoff from landscaping and impermeable surfaces on the main campus carries pollutants directly into local marine ecosystems, impacting wildlife and human health. The campus's existing conditions present challenges for stormwater management due to varied topography which creates flooding as water is directed to low-lying areas with poor soil drainage; limited tree canopy and root structure on steep slopes which increase the risk of flooding and erosion; and clay soil composition on the lower campus that prevents natural stormwater infiltration.

3.7.3 Methodology

The evaluation of potential hydrology and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the campus, including the CSULB SWMP, Landscape Master Plan, Utility Infrastructure Master Plan Update, and SWPPPs prepared for campus projects. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based

[12] Long Beach Water District, 2021, *2021 Annual Water Quality Report*.
[13] California State University, Long Beach, 2008, *Final Environmental Impact Report, Campus Master Plan*.
[14] California State University, Long Beach, 2023 *Utility Infrastructure Master Plan Up*date.
[15] California State University, Long Beach, September 2012, *Landscape Master Plan*.

on the thresholds of significance presented in this section. Potential environmental effects were determined in a qualitative manner, partly based on the design of different development types under the Master Plan Update, and does not consider quantitative data, such as amounts of impervious surfaces, as such information is not known as this time. In determining the level of significance, the analysis assumes that implementation of the Master Plan Update would comply with relevant federal and state laws, ordinances, and regulations. Additionally, implementation of the Master Plan Update would adhere to BMPs in accordance with the CSULB SWMP or project specific- SWPPPs (for projects disturbing more than one acre of land), as listed above.

Project Design Features

The following Project Design Features (PDF) are currently implemented for projects on campus, and would apply to all projects associated with development of the Master Plan Update to minimize impacts to hydrology and water quality. The PDFs will be incorporated into the Mitigation Monitoring and Reporting Program prepared for the Master Plan Update that will be adopted by the CSU Board of Trustees when they consider approval of the Master Plan Update to ensure their implementation.

- PDF-HWQ-1: Develop project-specific Best Management Practices for all projects regardless of acreage, which may include treatment controls; operating procedures; practices to control site runoff, spills and leaks, sludge or waste disposal, or drainage from raw material storage; and structural and non-structural measures.
- PDF-HWQ-2: Implement effective stormwater management practices where feasible, such as installing inlet basin filters at parking lots, collecting and treating stormwater runoff in bioretention basins along Bouton Creek, and constructing bioswales.
- PDF-HWQ-3: Produce less runoff than pre-development conditions or match pre-development conditions at minimum.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to hydrology and water quality are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or
    - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Issues Not Evaluated Further

The Master Plan Update would not result in significant impacts related to the following CEQA Guidelines Appendix G checklist questions, as determined in the Initial Study (Appendix A), and therefore are not evaluated further in this Draft EIR.

- *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?*

  A 100-year flood is defined as having a 1 percent chance of occurring in any given year. The CSULB main campus has the potential to be affected by flooding from the San Gabriel River and the Los Cerritos Channel; however, channel improvements have been completed in the last 50 years to improve flood flow capacity. The CSULB main campus has several low-lying areas that have had flooding in the past.[16]

  The northeastern section of the CSULB main campus is identified as an Area with Reduced Flood Risk Due to Levee, which is an area that is protected from the 1-percent-annual-chance or greater flood hazard by a levee system that has been provisionally accredited. The southwestern section of the CSULB main campus and the Beachside Village property are identified as being within an Area of Minimal Flood Hazard.[17] As such, the CSULB campus and the surrounding area is not at substantial risk for flooding. Implementation of the Master Plan Update would also include new or relocated connections to the existing stormwater drainage infrastructure to help direct flows to the Bouton Creek Channel. Implementation of the Master Plan Update would not impede or redirect flood flows, and the impact would be less than significant.

- *In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?*

  The CSULB main campus, Beachside Village property, and the surrounding area is not at substantial risk for flooding. Tsunamis are large ocean waves that are generated by major earthquakes, undersea landslides, volcanic eruptions, or other similar seismic activity. The campus is located approximately 2 miles north of the Pacific Ocean; however, tsunamis can travel upstream in coastal estuaries and rivers, extending the damaging wave farther inland.[18] Due to its proximity to the Los Cerritos Channel and Bouton Creek, run-up (i.e., the maximum height above sea level a tsunami reaches on shore) and inundation due to tsunamis could occur at the campus.[19] However, the Master Plan Update would include new or relocated connections to the existing stormwater drainage infrastructure to help direct flows to

16 California State University, Long Beach, August 2020, *Emergency Operations Plan 2020-2021*.

17 The California State University, Long Beach (CSULB) Emergency Operations Plan 2020-2021 was approved in August 2020. The Plan states that the CSULB campus is identified by the Federal Emergency Management Agency (FEMA) as being located in Zone X, which indicates an area where the annual flood risk is between one percent and 0.2 percent. However, FEMA issued an updated Flood Insurance Rate Map for the area containing the CSULB campus effective April 2021, which identifies the flood risks on the campus as "Reduced Flood Risk Due to Levee" and "Area of Minimal Flood Hazard". Thus, the description of the applicable flood hazards for the CSULB main campus in the Initial Study is based on the most current flood hazard information available from FEMA.

18 California State University, Long Beach, August 2020, *Emergency Operations Plan 2020-2021*.

19 Ibid.

the Bouton Creek Channel.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately upgradient of the campus. The Sepulveda Dam on the Los Angeles River and the Whittier Narrows Dam on the San Gabriel River are the closest dams to the CSULB campus, located approximately 33 miles northwest and approximately 15 miles northeast, respectively. According to the Army Corp of Engineers, the danger of any flooding to the CSULB campus due to dam failure from either of these dams is low as all floodwaters should be contained within flood control channels by the time it reaches the campus area.[20] Therefore, the risk of release of pollutants due to project inundation would be less than significant.

3.7.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below is organized to separately address renovation projects, which involve renovation of existing facilities and additions to existing facilities; replacement projects, which involve demolition and replacement of existing facilities in the same physical location; and new projects, which involve construction of new facilities with new uses.

HWQ-1 Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Program-Level Analysis for Master Plan Update

Construction

Construction activities for the Master Plan Update would involve demolition, renovation, landscaping, hardscaping, site preparation, and earthmoving activities. Construction activities may use grease, paints, solvents, diesel fuel, and gasoline, which could result in accidental spills. Site preparation activities such as tree removal, and earthmoving activities such as grading, paving, and excavation, would expose underlying soils to water and wind erosion. Excess sediment could increase runoff water turbidity and transport other pollutants such as nutrients, metals, oils, and greases. Construction activities for the Master Plan Update would have the potential to degrade water quality if pollutants or soils are transported to drainages or Bouton Creek, either through runoff or storm events.

All future development resulting from the Master Plan Update would be subject to the Construction General Permit. As required by the Construction General Permit, construction activities disturbing more than one acre of land must prepare and implement a SWPPP. Implementation of the SWPPP would avoid or minimize erosion, sedimentation, and release of hazardous materials from construction sites into local waterways. The SWPPP is required to include specific elements such as a site map(s) indicating the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP would also address the potential pollutants and their sources, such as sources of sediment associated with construction

[20] California State University, Long Beach, August 2020, *Emergency Operations Plan 2020-2021*.

and construction site erosion, and would include erosion and stormwater control measures that would be implemented on-site. BMPs may be implemented prior to, during, or after construction, as needed, or for the entirety of the project. As discussed above in Section 3.7.1, examples of typical BMPs that may be used for sediment control include installing silt fences, fiber rolls, and stabilizing construction entrances and exits; for erosion control include using mulch, drainage swales, and slope drains; and for materials management include stockpile management, spill prevention and control, and hazardous waste management.

Projects that would not disturb one acre and do not require development and implementation of a SWPPP would be required to comply with CSULB's SWMP and implement PDF-HWQ-1, which provides BMPs for municipal and small construction activities, and identifies methods to reduce the discharge of identified pollutants into the storm drain system and associated water ways, including Bouton Creek. All projects would develop project-specific BMPs for treatment controls; operating procedures; practices to control site runoff, spills and leaks, sludge or waste disposal, or drainage from raw material storage; and post-construction structural and non-structural measures. Additionally, CSULB would comply with existing plan policies, including the CSULB Water Action Plan and systemwide general requirements, to implement storm water management practices to minimize runoff, increase on-site retention and infiltration of water, and implement temporary erosion and sediment controls.

As discussed in Section 3.7.1, CSULB is considered a Non-Traditional MS4 permittee and therefore, is subject to the Small MS4 Permit. The Small MS4 Permit requires the implementation of BMPs, which include measures for erosion control (e.g., chemical stabilization, compost blankets, and mulching), runoff control (e.g., check dams, grass-lined channels, land grading), and sediment control (e.g., brush barriers, compost filter berms, and fiber rolls). As CSULB would be subject to the conditions under the Small MS4 Permit including the BMPs, all future construction under the Master Plan Update would be subject to the requirements of the Small MS4 Permit.

With compliance with existing permits, plans, and regulations, such as the Construction General Permit, Small MS4 Permit, SWPPPs, associated BMPs, and the CSULB SWMP, implementation of the Master Plan Update would not violate any water quality standards or waste discharge requirements during construction. Therefore, impacts would be less than significant.

Operation

Projects implemented under the Master Plan Update include renovation of existing facilities and additions to existing facilities, demolition and replacement of facilities, and construction of new facilities within the existing campus boundaries. Upon completion of construction, areas subject to development within the CSULB main campus and Beachside Village property would either be paved, landscaped, or built upon, similar to existing conditions. Exposed areas of soil would be limited, thus minimizing the potential for erosion and sedimentation. The primary source of pollutants would be similar to existing conditions and could include incidental leaks and spills of oils, grease, general maintenance products, pesticides, herbicides, and fertilizers. As under existing conditions, vehicle parking could result in minor petroleum leaks onto paved surfaces. General maintenance products include paints, solvents, fuel, oils, and lubricants, which if not handled and stored properly, could result in incidental spills to paved and/or unpaved areas. Similarly, storage and use of landscaping chemicals could result in small incidental spills of such products and/or leaching of the chemicals into underlying soils and surface runoff if not properly handled.

However, the potential for development sites to generate polluted runoff would be minimized

through mandatory compliance with project-specific SWPPPs, which would outline post-construction stormwater management BMPs. These include permanent structural BMPs, such as sediment basins, as well as permanent non-structural BMPs, such as vegetation. In addition, CSULB would comply with the requirements of the Small MS4 Permit, which requires projects that create and/or replace 5,000 square feet or more of impervious surface to implement LID standards, such as site planning (e.g., reduce impervious areas, preserve open space, minimize land disturbance) and post-construction structural BMPs (e.g., bioretention swales, pervious pavements, cisterns), to reduce potential runoff.

In addition, the Sustainability and Resilience Framework of the Master Plan Update includes strategies to improve stormwater management that build upon existing stormwater infrastructure and interventions. Goals include creating planting zones in drainage areas to comply with LID practices, filtering pollutants to reduce toxic runoff into Bouton Creek, ensuring that new developments produce less runoff than pre-development conditions or match pre-development conditions at minimum, evaluating the impacts of landscape and hardscape practices on runoff and develop a strategy for mitigating surface runoff, and developing a strategy for mitigating incidental runoff. Development under the Master Plan Update would require PDF-HWQ-2 to implement effective stormwater management practices where feasible, such as installing inlet basin filters, collecting and treating stormwater runoff in bioretention basins along Bouton Creek, and constructing bioswales, and PDF-HWQ-3 to produce less runoff than pre-development conditions or match pre-development conditions at a minimum. Additionally, CSULB is working to expand strategies beyond localized filtration planters or permeable hardscape surfaces, considering expansion of the urban forest, evolving landscape maintenance practices, and evaluating the benefits of existing water-efficient landscape projects to support robust stormwater management practices. Such strategies to manage, prevent, and treat stormwater runoff would be incorporated into the design of future projects under the Master Plan Update. Therefore, through compliance with the PDFs and all applicable regulations, including the Construction General Permit, Small MS4 Permit, SWPPPs, CSULB SWMP, and with implementation of goals as part of the Master Plan Update, impacts on water quality during operations would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update.

The following near- and mid-term projects would require only interior renovations: Lecture Hall 150-151 Renovation, Fine Arts 1/2 Renovation, Fine Arts 4 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Nursing Building Renovation, and Engineering Tech Renovation. These projects would not require earthmoving activities that could degrade water quality. Therefore, impacts to surface or groundwater quality with construction of these near- and mid-term projects would be less than significant.

Construction activities associated with some of the near- and mid-term development projects would include site preparation and earthmoving activities, and demolition and replacement of some existing structures, which would have potential impacts related to erosion, sedimentation, and release of pollutants. The projects that would involve such activities include the replacement projects (Engineering Replacement Building and New Parkside Housing Village), new projects

(Faculty and Staff Housing, New 7th St. Community Outreach Facility), and renovation projects that include additions and/or renovations to the exterior of existing facilities (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Liberal Arts 5 Renovation, Student Health Services Addition, Corporation Yard Renovations, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, University Music Center Renovation/Addition, and Redefining the Campus Quad). Construction associated with these near- and mid-term development projects would comply with the Construction General Permit, Small MS4 Permit, SWPPPs, associated BMPs, and/or the CSULB SWMP, as applicable. Additionally, construction of these development projects would implement PDF-HWQ-1 to develop project-specific BMPs to minimize erosion, sedimentation, and release of pollutants. Compliance with these permits and implementation of BMPs would avoid or minimize erosion, sedimentation, and release of pollutants from individual project construction sites.

The Pedestrian/Bike Lane Improvements project, in particular, would have the potential to degrade water quality because of its proximity to Bouton Creek, if pollutants or soils are transported to the creek either through runoff or storm events. The Pedestrian/Bike Lane Improvements project would propose new paths, including an enhanced diagonal crossing at Determination Drive which would facilitate crossing from the south side of the creek to the north side. Similar to other near- and mid-term projects that would require earthmoving, the Pedestrian/Bike Lane Improvements project would comply with the Construction General Permit, Small MS4 Permit, SWPPPs, associated BMPs, and/or the CSULB SWMP, as applicable. Compliance with these permits and implementation of BMPs would avoid or minimize erosion, sedimentation, and release of pollutants from construction of the Pedestrian/Bike Lane Improvements project. Additionally, construction of these development projects would implement PDF-HWQ-1 to develop project-specific BMPs to minimize erosion, sedimentation, and release of pollutants. Therefore, impacts to water quality construction of the proposed near- and mid-term development projects would be less than significant.

Operation

Following completion of construction activities, the majority of the near- and mid-term development projects would result in replacement or renovated buildings that have similar uses compared to existing conditions. Therefore, the replacement and renovation projects would result in similar water quality conditions compared to existing conditions, such as types of pollutants, amount of pervious and impervious surfaces, and sources of runoff. Although the new projects (Faculty and Staff Housing, New 7th St. Community Outreach Facility) would provide new uses, new projects would not be expected to result in significant water quality impacts as implementation of the Master Plan Update is located within the boundaries of the urbanized and developed campus and is considered infill development which would not significantly change the water quality or hydrological conditions of the campus. Additionally, development under the Master Plan Update would require PDF-HWQ-2 to implement effective stormwater management practices where feasible, such as installing inlet basin filters, collecting and treating stormwater runoff in bioretention basins along Bouton Creek, and constructing bioswales, and PDF-HWQ-3 to produce less runoff than pre-development conditions or match pre-development conditions at a minimum. Upon completion of construction, the near- and mid-term development projects may result in improved water quality conditions due to new post-construction stormwater management BMPs and/or post-construction LID standards. The project specific SWPPPs would outline post-construction stormwater management BMPs, including permanent structural BMPs, such as

sediment basins, as well as permanent non-structural BMPs, such as vegetation. In addition, CSULB would comply with the Small MS4 Permit, which requires projects that create and/or replace 5,000 square feet or more of impervious surface to implement LID standards, such as site planning (e.g., reduce impervious areas, preserve open space, minimize land disturbance) and post-construction structural BMPs (e.g., bioretention swales, pervious pavements, cisterns), to reduce potential runoff.

In addition, the Sustainability and Resilience Framework of the Master Plan Update includes strategies to improve stormwater management. Therefore, with implementation of the Master Plan Update strategies pertaining to stormwater management and through compliance with the PDFs and all applicable regulations, including the Construction General Permit, the Small MS4 Permit, SWPPPs, CSULB SWMP, impacts to water quality would be less than significant during operation of the near- and mid-term development projects.

HWQ-2 Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Program-Level Analysis for Master Plan Update

As discussed above in 3.7.2, Environmental Setting, LBWD, the water provider for the campus has the rights to pump 32,692 acre-feet of groundwater per year from the Central Basin and can extract additional groundwater it has stored in the aquifers if needed. Groundwater supplies from the aquifer are reliable even during multiyear droughts due to the maintenance of sufficient groundwater storage in the Central Basin, availability of non-MWD sources for replenishment, and restrictions of extractions. Additionally, no on-site groundwater wells currently exist within the campus and none are proposed as part of the Master Plan Update. Therefore, implementation of the Master Plan Update would not substantially decrease groundwater supplies.

In addition, although the Central Basin underlies the CSULB campus and Beachside Village property, the campus is completely developed and therefore, does not have much groundwater recharge potential. Development under the Master Plan Update would be considered infill development that would occur mostly on already paved sites; thus, development under the Master Plan Update would not change the conditions (i.e., less impervious surfaces for water to infiltrate into the ground) that allow for groundwater recharge compared to existing conditions. Therefore, implementation of the Master Plan Update would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Project-level impacts related to groundwater supplies and groundwater recharge are similar to those discussed under the program-level analysis. As discussed above, LBWD would have 12,076 MG per year of water surplus that would offset the extra increased water demand generated by the increase in total campus population that would be served by the Master Plan Update's proposed near- and mid-term development projects.

In addition, implementation of the near- and mid-term development projects involving replacement and renovation would serve similar uses compared to existing conditions and thus, would result in similar impacts to groundwater use. Although the near- and mid-term development projects involving construction of new facilities would provide new uses, new projects would not substantially change the groundwater conditions of the campus. Additionally, implementation of the near- and mid-term development projects may result in improved groundwater conditions due to new post-construction BMPs and/or post-construction LID standards. Therefore, impacts to

groundwater supplies or groundwater recharge would be less than significant for the Master Plan Update's near- and mid-term development projects.

HWQ-3 Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in (i) substantial erosion or siltation on- or off-site, (ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or (iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Program-Level Analysis for Master Plan Update

Construction

Construction activities associated with development of the Master Plan Update would include demolition, ground disturbance, and paving, which may temporarily alter drainage patterns. These activities could expose bare soil to rainfall and stormwater runoff, which could accelerate erosion and result in sedimentation of stormwater. For example, vegetation removal, excavation, grading, and stockpiling of soils would create soil disturbance that could accelerate erosion. Although grading activities may alter current surface runoff patterns, thus resulting in a temporary increase in the potential for on-site erosion or sedimentation to occur, development under the Master Plan Update would be subject to the requirements of the Construction General Permit, Small MS4 Permit, and PDF-HWQ-1 requiring project-specific SWPPPs. The MS4 permit requires new development and redevelopment projects to retain a specified volume of stormwater runoff from a design storm event on site. The project-specific SWPPPs would include construction BMPs for erosion, sediment, and runoff flow control, such as preserving existing vegetation when feasible, using mulch to stabilize construction areas, and stabilizing stream banks. In addition, the CSULB SWMP requires implementation of minimum control measures for development, including the NPDES Phase II requirement of construction site stormwater runoff control measures. With implementation of these BMPs, construction activities associated with the Master Plan Update would not result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Operation

There are nearly 70 acres of exposed, impervious parking surfaces largely contributing to stormwater runoff on campus. As discussed, development under the Master Plan Update would require PDF-HWQ-2 to implement effective stormwater management practices where feasible, such as installing inlet basin filters, collecting and treating stormwater runoff in bioretention basins along Bouton Creek, and constructing bioswales. These types of infrastructure would allow for stormwater to be contained and treated on-site, then released to Bouton Creek, ensuring that additional sources of polluted runoff would not occur. Additionally, implementation of PDF-HWQ-3 would ensure that the Master Plan Update would produce less or the same amount of runoff than pre-development conditions.

Furthermore, the potential for development sites to generate polluted runoff would be minimized through mandatory compliance with the Construction General Permit and Small MS4 Permit and implementation of PDF-HWQ-1. Development under the Master Plan Update that would disturb more than one acre of land would also be required to develop a project-specific SWPPP, which

may include stormwater runoff monitoring, and implement BMPs for post-construction. All development under the Master Plan Update regardless of acreage would be required to develop project-specific BMPs to minimize erosion or siltation as required by PDF-HWQ-1. Additionally, development under the Master Plan Update would not involve the alteration of a stream or river, and would not be expected to substantially increase runoff compared to existing conditions because all development projects that create and/or replace 5,000 square feet or more of impervious surface under the Master Plan Update would be required to implement LID practices. In addition, the Sustainability and Resilience Framework of the Master Plan Update outlines goals to implement LID practices. Therefore, with the implementation of LID features and compliance with all applicable permits and plans, operation associated with the Master Plan Update would not result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

As discussed in Threshold HWQ-1, the following near- and mid-term projects would require only interior renovations: Lecture Hall 150-151 Renovation, Fine Arts 1/2 Renovation, Fine Arts 4 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Nursing Building Renovation, and Engineering Tech Renovation. These projects would not require earthmoving activities that would alter the existing drainage pattern of the individual project site or area. Therefore, impacts related to the existing drainage pattern with construction of these near- and mid-term projects would be less than significant.

Construction activities associated with some of the near- and mid-term development projects would include site preparation and earthmoving activities, and demolition and replacement of some existing structures, which may temporarily alter drainage patterns and result in impacts related to erosion and stormwater runoff. The projects that would involve such activities include the replacement projects (Engineering Replacement Building and New Parkside Housing Village), new projects (Faculty and Staff Housing, New 7th St. Community Outreach Facility), and renovation projects that include additions and/or renovations to the exterior of existing facilities (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Liberal Arts 5 Renovation, Student Health Services Addition, Corporation Yard Renovations, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, University Music Center Renovation/Addition, and Redefining the Campus Quad). However, as discussed above, construction associated with these projects would be required to comply with PDFs, the Construction General Permit, Small MS4 Permit, project specific- SWPPPs, associated BMPs, and the CSULB SWMP, as applicable. Compliance with permit requirements and implementation of BMPs would avoid or minimize erosion and changes in surface runoff.

Therefore, the proposed near- and mid-term development projects would have less than significant impacts with regard to substantial erosion or siltation, increase in the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or increase in runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Operation

Similar to the activities described under the program level analysis above, operation and routine maintenance of the near- and mid-term development projects would occur within existing paved/developed areas. Therefore, the amount of impervious surfaces and associated stormwater runoff would not be expected to substantially increase with these developments. Additionally, implementation of PDF-HWQ-3would ensure that the Master Plan Update would produce less or the same amount of runoff than pre-development conditions. Furthermore, compliance with the post-construction requirements of the Construction General Permit, Small MS4 Permit, site-specific SWPPPs, and implementation of LID features would minimize the potential for erosion or increase in runoff rates or volumes. Therefore, operation associated with the proposed near- and mid-term development projects would not result in substantial erosion or siltation on- or off-site, substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

HWQ-4 Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Program-Level Analysis for Master Plan Update

The Los Angeles RWQCB's Basin Plan is the water quality control plan for the region. As provided in Table 3.7-1, San Gabriel River Watershed Impaired Waters, the portions of the San Gabriel River that are impaired with various pollutants and some TMDLs are not located in the vicinity the CSULB main campus or Beachside Village property. Therefore, development from the Master Plan Update would not impact impaired waterbodies, and through compliance with existing regulations, would be consistent with the Basin Plan.

Additionally, as discussed, construction activities associated with projects under the Master Plan Update would be required to comply with the Construction General Permit and project-specific SWPPPs that would include typical BMPs for erosion control, sediment control, and waste management. Operational activities associated with development projects under the Master Plan Update would be required to meet Small MS4 Permit requirements and implement LID standards, as applicable.

The Central Basin which underlies the CSULB main campus and Beachside Village property is classified as a very low priority groundwater basin, and thus, is not subject to a sustainable groundwater management plan. Nonetheless, as discussed in Threshold HWQ-2, by 2040, LBWD is projected to have a water surplus that would offset the extra increased water demand generated by the total population increase of the campus. LBWD has the rights to pump 32,692 acre-feet per year of groundwater and an additional amount of groundwater if needed; groundwater supplies from the aquifer are reliable even during multiyear droughts. No on-site groundwater wells currently exist within the campus and none are proposed as part of the Master Plan Update. In addition, although the Central Basin underlies the CSULB campus and Beachside Village property, the majority of the campus is developed and therefore, does not have much groundwater recharge potential. Therefore, implementation of the Master Plan Update would not conflict with a water quality control plan or sustainable groundwater management plan and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Similar to the analysis for the program-level for the Master Plan Update above, operation of and

routine maintenance for the near- and mid-term development projects would be required to comply with the post-construction requirements of the Construction General Permit, project-specific SWPPPs that would include BMPs, the Small MS4 Permit, and LID standards. These requirements would ensure that the near- and mid-term development projects would not significantly degrade water quality. In addition, the Central Basin which underlies the CSULB main campus and Beachside Village property is not subject to a sustainable groundwater management plan. Nonetheless, implementation of the near- and mid-term development projects would not significantly impact groundwater supplies as LBWD would have sufficient water supplies by 2040. Therefore, implementation of the of the near- and mid-term development projects under the Master Plan Update would not conflict with a water quality control plan or sustainable groundwater management plan and impacts would be less than significant.

3.7.5 Mitigation Measures

No mitigation measures would be required.

3.7.6 Level of Significance After Mitigation

Impacts would be less than significant.

3.7.7 Cumulative Impacts

The development projects associated with the Master Plan Update, in combination with other projects requiring ground-disturbing activities in the vicinity of the campus or resulting in additional water demand in the region could result in cumulative impacts to hydrology and water quality. Significant impacts to hydrology and water quality resulting from the implementation of the Master Plan Update are not anticipated. As discussed in Section 3.7.4 above, all future development under the Master Plan Update would be subject to the requirements of the Construction General Permit, compliance with the Small MS4 Permit, and PDF-HWQ-1 through PDF-HWQ-3. Through compliance with PDFs and existing permits, plans, and regulations, such as the General Permit, Small MS4 Permit, SWPPPs, associated BMPs, and the CSULB SWMP, implementation of the Master Plan Update would not violate any water quality standards or waste discharge requirements, or substantially alter the existing drainage pattern of future project sites or areas.

Furthermore, as evaluated in Section 3.7.4 above, LBWD would have sufficient water supply to meet water demand generated by the increase in total campus population that would be served by the Master Plan Update, and future groundwater supplies from the Central Basin Aquifer would remain reliable. Therefore, impacts related to groundwater supply or recharge and applicable water quality control plans would be less than significant.

Further, related projects in the campus vicinity would also be required to comply with the requirements of the NPDES. Depending on the project type and scope, related projects may also be required to implement a SWPPPs and/or BMPs. As a result, implementation of the Master Plan Update, taking into account related projects, would not result in a considerable contribution to significant cumulative impacts. Cumulative impacts on hydrology and water quality would be less than significant.

3.8 NOISE

This section presents an analysis of the potential noise and vibration impacts associated with development and implementation of the Master Plan Update. This section includes a summary of applicable regulations related to noise and vibration, a description of ambient-noise conditions, an analysis of potential short-term construction and long-term operational noise impacts from implementation of the Master Plan Update, and identifies mitigation measures for those impacts determined to be significant. This section is based, in part, on the Noise and Vibration Calculations included as Appendix H.

As discussed further in Section 3.8.3, Methodology, the CEQA Guidelines Appendix G checklist question for noise impacts related to nearby airports was found to have no impact in the Initial Study prepared for the project, and thus, is not discussed in detail in this EIR.

Public comments related to noise were received during the public scoping period in response to the NOP. These comments address the project's potential to generate noise based on the heights of the proposed buildings. For a complete list of public comments received during the public scoping period, refer to Appendix A.

Noise Overview

Typical terms related to noise and vibration used throughout this section are defined below.

- Decibel (dB): a logarithmic unit used to measure the loudness of sound.
- A-weighted decibel (dBA): A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
- Equivalent sound level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period.
- Minimum sound level (L_{min}): The lowest individual dBA occurring over a given time period.
- Maximum sound level (L_{max}): The highest individual dBA occurring over a given time period.
- Day-Night Average (L_{dn}): The energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours between 10:00 PM and 7:00 AM.
- Community Noise Equivalent Level (CNEL): A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM.
- Noise contour: a line drawn on a map representing equal levels of noise exposure. For example, a 60 dBA noise contour indicates the distances from a noise source at which the noise levels would be 60 dBA.
- Peak particle velocity (PPV): A measurement of vibration amplitude using the maximum instantaneous positive or negative peak of the vibration wave in inches per second.

3.8.1 Regulatory Setting

Federal

Noise Control Act of 1972

The Federal Noise Control Act of 1972 established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, the U.S. Environmental Protection Agency (EPA) administrators determined that subjective issues such as noise would be better addressed at more local levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to specific federal agencies, and state and local governments. However, noise control guidelines and regulations contained in the EPA rulings in prior years remain in place. The EPA has identified acceptable noise levels for various land uses to protect the public, with an adequate margin of safety, as described in its "Levels Document" guidance.[1] In the absence of local noise regulations, the EPA public-protecting guideline of 55 dBA L_{dn} would be assessed at the exterior of any existing noise sensitive land use where the existing outdoor ambient sound level is not already in excess of this value. Noise sensitive land uses are understood to include but are not limited to residences.

Department of Housing and Urban Development Noise Standards

The Department of Housing and Urban Development standards define day-night average sound levels (L_{dn}) below 65 dBA outdoors as acceptable for residential areas. Outdoor levels up to 75 dBA L_{dn} may be made acceptable through the use of insulation in buildings.[2]

Federal Transit Administration Noise and Vibration Standards

The Federal Transit Administration (FTA) has published guidelines for the analysis of ground-borne noise and vibration relating to transportation and construction-induced vibration. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the United States, is referenced as vibration decibels (VdB). With respect to human response within residential uses (i.e., annoyance), FTA recommends a maximum acceptable vibration standard of 80 VdB.

State

California Code of Regulations

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for residential buildings (California Code of Regulations Title 24, Part 2, Chapter 12, Section 1207.11.2). Title 24 establishes standards for interior room noise attributable to outside noise sources. Title 24 also specifies that acoustical studies should be prepared whenever a residential building or structure is proposed to be located in areas with exterior noise levels 60 dB L_{dn} or greater. The acoustical analysis must show that the building has been designed to limit intruding noise to an interior level not exceeding 45 dB for any habitable room.

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1 U.S. Environmental Protection Agency, updated September 2016, EPA Identifies Noise Levels Affecting Health and Welfare, available at: https://www.epa.gov/archive/epa/aboutepa/epa-identifies-noise-levels-affecting-health-and-welfare.html#:~:text=Likewise%2C%20levels%20of%2055%20decibels,of%20the%20daily%20human%20condition, accessed March 2, 2022.

2 Code of Federal Regulations, Title 24, Part 51.

Section 1092 of Title 25, Chapter 1, Subchapter 1, Article 4, of the California Administrative Code includes noise insulation standards which detail specific requirements for new multi-family structures (hotels, motels, apartments, condominiums, and other attached dwellings) located within the 60 CNEL contour adjacent to roads, railroads, rapid transit lines, airports, or industrial areas. An acoustical analysis is required showing that these multi-family units have been designed to limit interior noise levels, with doors and windows closed to 45 CNEL in any habitable room. Title 21 of the California Administration Code (Subchapter 6, Article 2, Section 5014) also specifies that noise levels in all habitable rooms shall not exceed 45 CNEL. A community's sensitivity to noise may be evaluated by starting with the general guidelines developed by the state of California, and then applying adjustment factors. These allow acceptability standards to be set which reflect the desires of the community and its assessment of the relative importance of noise pollution and are below the known levels of health impairment.

Office of Planning and Research General Plan Noise Element Guidelines

California Government Code Section 65302(f) mandates that the legislative body of each county, town, and city adopt a noise element as part of their comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services. The State of California General Plan Guidelines, published by the State Governor's Office of Planning and Research (OPR), provides guidance for the acceptability of specific land use types within areas of specific noise exposure. Table 3.8-1, Land Use Compatibility for Community Noise Environments, presents guidelines for determining acceptable and unacceptable community noise exposure limits for various land use categories. The guidelines also present adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. OPR guidelines are advisory in nature. Local jurisdictions such as the City of Long Beach have the responsibility to set specific noise standards based on local conditions.

As depicted in Table 3.8-1, the range of noise exposure levels assumes overlap between the normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable categories. OPR's State General Plan Guidelines note that noise planning policy needs to be flexible and dynamic to reflect not only technological advances in noise control, but also economic constraints governing application of noise-control technology and anticipated regional growth and demands of the community. In project-specific analyses, each community must decide the level of noise exposure its residents are willing to tolerate within a limited range of values below the levels of known health impairment. Therefore, local jurisdictions may use their discretion to determine which noise levels are considered acceptable or unacceptable, based on land use, project location, and other project factors.

Table 3.8-1: Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (CNEL)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential-Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 – 70	70 – 75	75 – 85
Residential – Multiple Family	50 – 65	60 – 70	70 – 75	70 – 85
Transient Lodging – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 – 70	NA	65 – 85
Sports Arenas, Outdoor Spectator Sports	NA	50 – 75	NA	70 – 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 77.5	72.5 – 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 – 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 – 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 – 80	75 – 85	NA

Notes: CNEL = community noise equivalent level; NA = not applicable

NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

NORMALLY UNACCEPTABLE: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise-insulation features must be included in the design.

CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

Source: Office of Planning and Research, General Plan Guidelines and Technical Advisories, available at: https://opr.ca.gov/planning/general-plan/guidelines.html, accessed March 2, 2022.

California State University

As an entity of the state of California, the CSU has requirements that contractors must adhere to if awarded development contracts. The CSU's "Contract General Conditions for Collaborative Design-Build Major-Build Major Projects" construction guidebook includes the following Sound Control Requirements for construction of major projects:

- The Design-Builder shall comply with all sound control and noise level rules, regulations and ordinances which apply to the work. In the absence of any such rules, regulations and ordinances, the Design-Builder shall conduct its work to minimize disruption to others due to sound and noise from the workers and shall be responsive to the Trustees' requests to reduce noise levels.

- Design-Builder shall not cause or allow sounds to be produced in excess of 65 decibels measured at the job site between the hours of 7:00 p.m. and 7:00 a.m. Design-Builder shall not cause or allow sounds to be produced in excess of 85 decibels measured at the job site between the hours of 7:00 a.m. and 7:00 p.m. without the consent of the University.
- Each internal combustion engine, used for any purpose on the project or related to the project, shall be equipped with a muffler or a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without a muffler.
- Loading and unloading of construction materials will be scheduled so as to minimize disruptions to University activities. Construction activities will be scheduled to minimize disruption to the University and to University users.

Local

CSULB is an entity of the CSU, a state agency, and the campus is state-owned property; therefore, development on the campus is not subject to local plans, policies, regulations, or ordinances governing noise and vibration. However, the noise and vibration analysis considers the following local plans, polices, and ordinances as guidance in developing appropriate noise and vibration significance thresholds for assessing impacts.

City of Long Beach

General Plan Noise Element

The City of Long Beach General Plan (General Plan) Noise Element was adopted in 1975 and provides a description of existing and projected future noise levels, and incorporates comprehensive goals, policies, and implementing actions. The following goals related to construction noise are applicable to the Master Plan Update:

- Respond to demands for a reasonably quiet environment which is compatible with both existing ambient noise levels and continued building and industrial development.
- Reduce the level of noise exposure to the population caused by demolition and construction activities.
- Reduce the level of outdoor noise exposure to the population generated by industries.

The General Plan suggests stationary noise levels[3] that, at present, average maximum noise levels outside the nearest building at the window of the occupied room closest to the site boundary, should not exceed 75 dBA in areas near main roads and heavy industries.

The City of Long Beach is currently in the process of updating the Noise Element of the General Plan. Although not yet adopted, the following construction noise policies from the Draft Noise Element are listed for informational purposes:

- Policy N 12-1: Reduce construction, maintenance, and nuisance noise at the source, when possible, to reduce noise conflicts.
- Policy N 12-2: Limit the allowable hours for construction activities and maintenance operations near sensitive uses.

[3] Stationary noise sources includes equipment or facility, fixed or moveable, that is capable of emitting a sound beyond the property boundary of the property on which it is used.

- Policy N 12-3: As part of the City's Municipal Code, establish noise level standards based on Place Type and time of day, to which construction noise shall conform.
- Policy N 12-4: Encourage off-site fabrication to reduce needed onsite construction activities and corresponding noise levels and duration.
- Policy N 12-5: Encourage the following construction best practices:
    - Schedule high-noise and vibration-producing activities to a shorter window of time during the day outside early morning hours to minimize disruption to sensitive uses.
    - Grading and construction contractors should use equipment that generates lower noise and vibration levels, such as rubber-tired equipment rather than metal tracked-equipment.
    - Construction haul truck and materials delivery traffic should avoid residential areas whenever feasible.
    - The construction contractor should place noise- and vibration-generating construction equipment and locate construction staging areas away from sensitive uses whenever feasible.
    - The construction contractor should use on-site electrical sources to power equipment rather than diesel generators where feasible.
    - All residential units located within 500 feet of a construction site should be sent a notice regarding the construction schedule. A sign legible at a distance of 50 feet should also be posted at the construction site. All notices and the signs should indicate the dates and durations of construction activities, as well as provide a telephone number for a "noise disturbance coordinator."
    - A "noise disturbance coordinator" should be established. The disturbance coordinator should be responsible for responding to any local complaints about construction noise. The disturbance coordinator should determine the cause of the noise complaint (e.g., starting too early, bad muffler) and should be required to implement reasonable measures to reduce noise levels.
- Policy N 12-6: Continue to provide information bulletins dispersing information on municipal code requirement and recommended best practices.
- Policy N 12-7: Work together with the Air Quality Management District to encourage the retirement of older construction equipment in favor of newer, quieter, and less polluting equipment.[4]

Long Beach Municipal Code, Noise Ordinance, Chapter 8.80

Chapter 8.80, *Noise*, of the Long Beach Municipal Code (LBMC) sets forth all noise regulations controlling unnecessary, excessive, and annoying noise and vibration in the City. As outlined in Section 8.80.150 of the LBMC, maximum exterior noise levels are based on land use districts. According to the Noise District Map in the LBMC, the CSULB main campus and the Beachside Village property and surrounding uses are located within Noise District One. District One is defined as "predominantly residential with other land use types also present"; District Two is defined as "predominantly commercial with other land use types present"; and Districts Three and Four are defined as "predominantly industrial with other land types use also present." Table 3.8-2, City of Long Beach Noise Limits, summarizes the exterior and interior noise limits for the various

[4] City of Long Beach, October 2022, *General Plan – Noise Element*.

land use districts within the City. The following noise limits are applicable while evaluating stationary noise impacts.

Table 3.8-2: City of Long Beach Noise Limits

Land Use District	Exterior Noise Level (L_{eq})		Interior Noise Level (L_{eq})	
	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.	10 p.m. to 7 a.m.
District One	50	45	45	35
District Two	60	55	-[a]	-[a]
District Three[b]	65	65	-[a]	-[a]
District Four[b]	70	70	-[a]	-[a]

a. Interior noise limits vary for different uses within this district.
b. Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within the district.

Source: City of Long Beach, December 2022, Long Beach Municipal Code Section 8.80.160 and Section 8.80.170.

LBMC Section 8.80.250, Exemption - Emergencies, exempts performance of emergency work from the noise standard.

LBMC Section 8.80.202, Construction Activity - Noise Regulations, applies to construction activities where a building or other related permit is required and issued by the Building Official. LBMC Section 8.80.202 includes the following restrictions:

- Weekdays and Federal holidays: No person shall operate any tool or equipment used for construction, which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. and 7:00 a.m. of the following day on weekdays, except for emergency work authorized by the Building Official. For purposes of this section, Federal holidays shall be considered weekdays.
- Saturdays: No person shall operate or permit the operation of any tools or equipment used for construction, which produces loud or unusual noise that annoys or disturbs a reasonable person of normal sensitivity between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, except for emergency work authorized by the Building Official.
- Sundays: No person shall operate any tool or equipment used for construction at any time on Sunday, except for emergency work authorized by the Building Official or except for work authorized by permit issued by the Noise Control Officer.

LBMC Section 8.80.200 prohibits the operation of any device that creates vibration that is above the vibration perception threshold of an individual or at 150 feet from the source if on a public space or public right-of-way. The perception threshold as defined by the LBMC is 0.001 g's (gravity) in the frequency range of 0-30 hertz (Hz) and 0.003 g's in the frequency range of 30-100 Hz.

3.8.2 Environmental Setting

Noise Scales and Definitions

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the dB. Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The dBA performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Typical A-weighted noise levels for various noise sources are shown in Table 3.8-3.

Table 3.8-3: Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Garbage disposal at 3 feet
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Dishwasher in next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation, September 2013, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*.

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Human Response to Changes in Noise Levels

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. However, many factors influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed".

The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories, including noise-induced hearing loss, interference with communication, effects of noise on sleep, effects on performance and behavior, extra-auditory health effects, and annoyance.

Interference with communication has proven to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and non-occupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depends on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high and the task sufficiently complex for effects on performance to occur.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the United States Department of Transportation, the effects of annoyance to the community were quantified.[5] In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community is highly annoyed. When levels exceed 65 dBA CNEL, that percentage rises to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is clear that noise can affect human health. Most of the effects are, to a varying degree, stress related.

Ground-Borne Vibration

Sources of ground-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

[5] Federal Transit Administration, September 2018, *Transit Noise and Vibration Impact Assessment Manual*, Figure 3.7 Community Annoyance Due to Noise.

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration. Typically, ground-borne vibration, generated by man-made activities, attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source. Both construction and operation of development projects can generate ground-borne vibration.

Table 3.8-4, Human Reaction and Damage to Buildings from Continuous Vibration Levels, displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in Table 3.8-4 should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where ground borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Table 3.8-4: Human Reaction and Damage to Buildings from Continuous Vibration Levels

Peak Particle Velocity (inch/second)	Human Reaction	Effect on Buildings
0.006–0.019	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings[a]
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

a. Historic and some old buildings have a threshold of 0.25 PPV (in/sec).
Source: California Department of Transportation, April 2020, *Transportation and Construction Vibration Guidance Manual*, Table 20.

Existing Noise Environment

Existing noise sources in the area surrounding the CSULB main campus and Beachside Village property consist of stationery and transportation sources typical of urban environments. Typical stationary sources of noise include airports; industrial and construction activities; air conditioning and refrigeration units; high level radio, stereo, or television usage; power tools; lawnmowers; appliances used in the home; and barking dogs. Transportation-related noise sources include aircrafts, automobiles, trucks, and buses.

Mobile Noise Source

The primary noise source in the area surrounding the CSULB main campus and Beachside Village property is vehicle traffic along State Route 22, as well as local roads including North Bellflower Boulevard, Palo Verde Avenue, North Studebaker Road, East Campus Drive, East Anaheim Road, and East 7th Street. Noise is also generated by students and people at various events on campus.

To assess the potential for mobile noise impacts, it is necessary to determine the existing noise generated by vehicles traveling through the surrounding area. The existing roadway noise levels in the surrounding area were modeled using the Federal Highway Administration's (FHWA) Highway Noise Prediction Model (FHWA RD-77-108). The model uses a typical vehicle mix for urban/suburban areas in California and requires parameters, including traffic volumes, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The results are shown in Table 3.8-5, Existing Traffic Noise Levels. These noise levels assume that no shielding is provided between the traffic and the location where the noise contours are drawn. As shown in Table 3.8-5, traffic noise on these roadways ranges from approximately 55.7 to 71.8 dBA CNEL when measured 100 feet from the roadway centerline. The highest noise level is at State Route 22.

Table 3.8-5: Existing Traffic Noise Levels

Roadway Segment	Existing					
	ADT	dBA at 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	55 CNEL Noise Contour
North Bellflower Boulevard						
Between Interstate 405 and East 23rd Street	31,784	64.8	--	97	209	451
Between Garford Street and East Atherton Street	22,920	65.3	--	105	227	489
Between Atherton Street and Beach Drive	22,500	63.9	--	85	182	393
Between Beach Drive and East 7th Street	23,103	63.0	--	73	158	341
Palo Verde Avenue						
Between East Stearns Street and East Atherton Street	19,650	62.1	--	64	138	297
Between East Atherton Street and East Anaheim Road	12,465	60.1	--	--	102	219

Table 3.8-5: Existing Traffic Noise Levels

Roadway Segment	Existing					
	ADT	dBA at 100 Feet from Roadway Centerline	Distance from Roadway Centerline to: (Feet)			
			70 CNEL Noise Contour	65 CNEL Noise Contour	60 CNEL Noise Contour	55 CNEL Noise Contour
North Studebaker Road						
Between East Willow Street and East Stearns Street	21,183	62.7	--	71	152	328
Between East Stearns Street and East Atherton Street	17,911	63.0	--	--	158	339
Between East Anaheim Road and CA-22	24,021	64.2	--	88	189	408
East Atherton Street						
Between Ximeno Avenue and Clark Avenue	11,191	59.5	--	--	93	200
Between Clark Avenue and North Bellflower Boulevard	14,914	60.9	--	--	114	246
Between North Bellflower Boulevard and Merriam Way	14,211	58.1	--	--	74	160
Between Merriam Way and Palo Verde Avenue	15,396	58.7	--	--	82	176
Between Palo Verde Avenue and North Studebaker Road	7,910	55.8	--	--	--	113
East Anaheim Road						
Between Palo Verde Avenue and North Studebaker Road	8,339	55.7	--	--	51	111
East 7th Street						
Between Bellflower Boulevard and East Campus Drive	69,364	67.5	68	146	314	676
Between East Campus Drive and North Studebaker Road	72,534	69.7	96	206	443	955
State Route 22						
East of Studebaker Road	100,443	71.8	131	282	608	1,309

Notes:

ADT = average daily traffic; dBA = A-weighted decibels; CNEL = community noise equivalent level.

"--" = contour is located within the road right-of-way.

Roadway noise levels and contours were calculated using the FHWA highway traffic noise prediction model (FHWA RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Sources: Fehr & Peers modeling for the Transportation Impact Analysis for the Master Plan Update (2023); refer to Appendix H, Noise and Vibration Calculations.

Existing Noise Levels

Noise measurements were conducted on November 2, 2022, to quantify existing ambient noise levels in the project area. Noise measurements are listed in Table 3.8-6 and noise measurement locations are shown in Figure 3.8-1. The noise measurement sites are representative of typical existing noise exposure within and immediately adjacent to the CSULB main campus and the Beachside Village property. Short-term measurements were taken at each site between 10:00 a.m. and 12:30 p.m. As shown in Table 3.8-6, short-term noise levels during the daytime ranged from 53.0 to 69.4 dBA L_{eq}. The peak noise sources were traffic noise along the nearby roadways. Noise monitoring equipment used to record ambient noise levels consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring equipment complies with applicable requirements of the American National Standards Institute for Type I (precision) sound level meters. The results of the recorded ambient noise measurements are included in Appendix H.

Table 3.8-6: Existing Ambient Noise Levels

Measurement Location Number	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBA)[a]	Time
NM-1-SFH	Northeast corner of Palo Verde Avenue and East Anaheim Road	63.8	49.4	83.0	99.2	10:06 a.m.
NM-2-SFH	Northwest of the intersection of North College Place and East Atherton Street	64.5	48.0	81.9	98.3	10:23 a.m.
NM-3-SFH	Northwest corner of the intersection of Lave Avenue and East Atherton Street	69.4	49.2	81.2	98.2	10:40 a.m.
NM-4-SFH	Along the Alleyway at East of 1230 Los Altos Avenue	64.3	49.9	79.1	96.7	10:58 a.m.
NM-5-MFH	In front of the garage gate of 630-103 Brocton Court	53.1	41.2	64.8	90.4	11:21 a.m.
NM-6-SFH	Along East Campus Drive, West of 875 Hills Drive	62.9	45.0	79.9	99.3	11:45 a.m.
NM-7-SFH	In front of 1560 Park Avenue, along the sidewalk	53.0	43.5	75.0	89.0	12:06 p.m.

Notes: L_{eq} = Equivalent Sound Level; L_{min} = Minimum Noise Level; L_{max} = Maximum Noise Level

a. The peak noise levels represent the highest instantaneous levels measured at each location, whereas the L_{max} is the highest weighted noise level.

Source: Refer to Appendix H, Noise and Vibration Calculations.

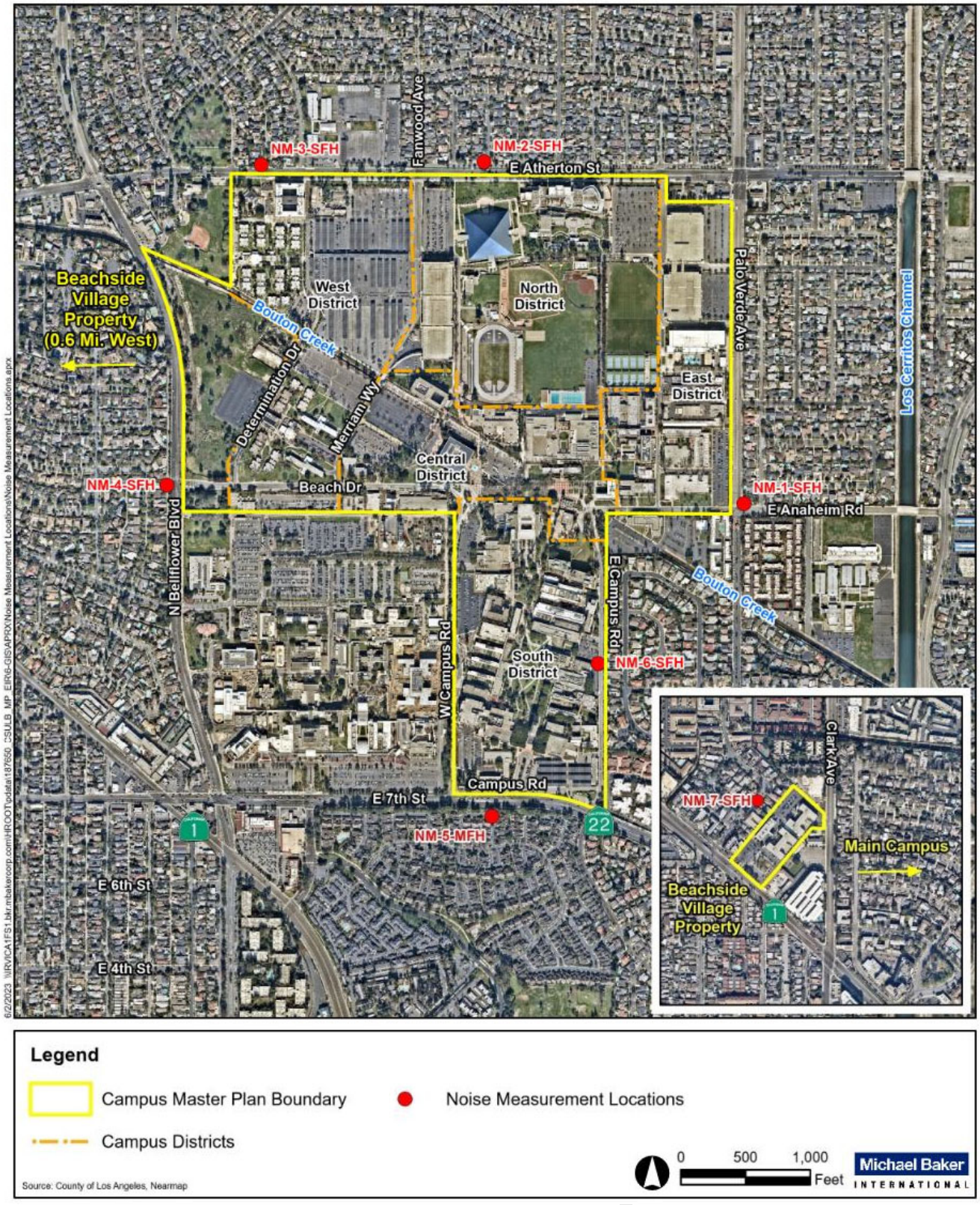

Figure 3.8-1: Noise Measurement Locations

Existing Vibration Environment

Vibration sources in urban environments are typically generated by heavy construction equipment and traffic on rough roads. Neither the CSULB main campus and the Beachside Village property, or the surrounding properties, contain any heavy construction equipment or other facilities or activities, such as heavy industrial uses, that would result in perceptible ground borne vibration. Several heavily traveled roadways are located adjacent to and near the boundaries of the CSULB main campus and the Beachside Village property, including Atherton Street, 7th Street, Bellflower Boulevard, and Pacific Coast Highway. According to the FTA, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. As such, there are no existing sources of perceptible vibration at the CSULB main campus or the Beachside Village property or in the surrounding areas.

3.8.3 Methodology

The noise and vibration impact analysis in this section includes a program-level analysis and a project-level analysis of the most impactful near- and mid-term development projects in terms of noise during construction. Both construction and operation of development under the Master Plan Update and the near- and mid-term development projects are considered in the impact analysis, where relevant. In the event significant adverse environmental impacts would occur with the implementation of the Master Plan Update even with incorporation of applicable regulations, mitigation measures have been identified to reduce impacts to less than significant, where feasible.

Sensitive Receptors

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack thereof, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours.

The area surrounding the CSULB main campus and the Beachside Village property is predominantly composed of commercial, institutional, and residential uses. The closest noise-sensitive receptors to the near- and mid-term development projects, for the purposes of this noise analysis, are summarized in Table 3.8-7. It should be noted that the sensitive receptors identified are a representative subset of the sensitive receptors closest to the boundaries of the CSULB main campus and the Beachside Village property. The representative sites, which were used for assessing noise impacts in this analysis, were selected due to proximity to existing on-campus noise-sensitive receptors and the proposed near- and mid-term development projects. As such, the potential for noise and vibration impacts is based, in part, on the representative distances to the nearest sensitive receptors shown in Table 3.8-7.

Table 3.8-7: Sensitive Receptors Closest to Near- and Mid-Term Development Projects

Project	Nearest Sensitive Receptors	Land Use	Direction	Distance to Nearest Sensitive Receptors (feet)
Beachside Housing	Multi-family Residence	Residential	Northwest	140
College of the Arts Replacement Building	Single-family Residence	Residential	East	145
Faculty and Staff Housing	Multi-family Residence	Residential	Southeast	170
New 7th St. Community Outreach Facility	Multi-family Residence	Residential	South	225
Walter Pyramid Renovation	Single-family Residence	Residential	North	430
USU Renovation/Addition and Cafeteria Replacement	Single-family Residence	Residential	Southeast	580
New Parkside Housing Village	Preschool	Institutional	Northwest	670
Engineering Replacement Building	Single-family Residence	Residential	East	810
Hillside College Renovations/Addition	Single-family Residence	Residential	West	885
Aquatics Center and Pool Renovation	Single-family Residence	Residential	East	1,200
Jack Rose Track/Commencement Facilities	Single-family Residence	Residential	North	1,270

Construction Noise and Vibration

A review of the near- and mid-term development projects described in Chapter 2, Project Description, was conducted to determine their distance to the closest sensitive receptor and to determine the likely construction scenarios, including construction duration, equipment, existing and/or new building square footage, and demolition requirements. This information is shown in Table 3.8-8. Among the near- and mid-term development projects, the Faculty and Staff Housing project and the New Parkside Housing Village were selected as representative projects for modeling, as they were determined to be the most impactful and represent the worst-case noise modeling scenario. As such, it can reasonably be assumed that construction of the remainder of the near- and mid-term development projects would result in reduced noise levels from those modeled for the representative projects.

Table 3.8-8: Near- and Mid-Term Project Construction Specifications for Noise Analysis

Project	Construction Specifications (Gross Square Feet)				Distance to Nearest Sensitive Receptors (feet)
	Demolition	New Construction	Renovation	Demolition Plus New Construction	
Beachside Housing	-	-	122,000	-	140
College of the Arts Replacement Building	22,910	114,100	-	137,010	145
Faculty and Staff Housing	44,678	388,000	-	432,678	170
New 7th St. Community Outreach Facility	47,684	100,000	-	147,684	225
Walter Pyramid Renovation	-	-	157,400	-	430
USU Renovation/Addition and Cafeteria Replacement	35,305	50,000	160,000	85,305	580
New Parkside Housing Village	99,408	200,000	-	299,408	670
Engineering Replacement Building	65,692	71,000	-	136,692	810
Hillside College Renovations/Addition	-	20,000	96,124	20,000	885
Aquatics Center and Pool Renovation	-	20,000	38,000	20,000	1,200
Jack Rose Track/Commencement Facilities	-	5,000	-	5,000	1,270

To evaluate potential noise and vibration impacts from construction activities associated with implementation of the Master Plan Update as described in the analysis, five typical construction phases are evaluated, with anticipated equipment from the default CalEEMod equipment list applied to the near- and mid-term development projects and reference equipment noise and vibration levels from industry-accepted FHWA and FTA sources. The program-level analysis includes a qualitative analysis to evaluate the potential noise and vibration impacts to the nearby sensitive receptors. The project-level analysis used the FHWA's Roadway Construction Noise Model to estimate the potential noise levels based on the equipment type and number and distances between sensitive receptors and the representative near- and mid-term development projects.

Operational Noise

Crowd Noise

Noise generated by groups of people (i.e., crowds) is dependent on several factors including vocal effort, impulsiveness, and the random orientation of the crowd members. Crowd noise is estimated at 60 dBA at one meter (3.28 feet) away for raised normal speaking. This noise level would have a +5 dBA adjustment for the impulsiveness of the noise source, and a -3 dBA

adjustment for the random orientation of the crowd members.[6] Therefore, crowd noise would be approximately 62 dBA at one meter from the source (i.e., outdoor courtyards and/or other outdoor common space). Noise has a decay rate due to distance attenuation, which is calculated based on the Inverse Square Law. Based upon the Inverse Square Law, sound levels decrease by 6 dBA for each doubling of distance from the source.[7] Crowd noise, for example, would be reduced to 56 dBA at two meters from the source. The noise level from one source is generally imperceptible if it is equal to or lower than the ambient noise level, such that crowd noise at one meter from the source (62 dBA) would be imperceptible if the ambient noise level is 62 dBA or higher.

Roadway Noise

The FHWA-RD-77-108 model was used to estimate existing and future roadway noise levels for the nearest major roadways and freeway. Noise levels were modeled for each of the following scenarios: (1) baseline condition; (2) baseline with project condition; (3) cumulative condition; and (4) cumulative with project condition.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to noise are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to noise if it would:

- Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; or
- Result in generation of excessive ground borne vibration or ground borne noise levels.

In analyzing potential noise and vibration impacts associated with the Master Plan Update, pertinent noise standards introduced in the regulatory section have been considered and utilized to develop the following quantified significance thresholds.

- Temporary Construction Noise: For temporary construction activities associated with development under the Master Plan Update, a significant impact would result when construction noise exceeds 75 dBA between the hours of 7:00 a.m. and 7:00 p.m. at nearby sensitive receptors on adjacent parcels based on the recommended threshold listed in the City's General Plan, which is more conservative than the maximum construction noise levels outlined in the CSU construction guidebook. Additionally, in the absence of a City-established nighttime construction noise level limit, per the CSU construction guidebook, a significant construction noise impact would result in a significant impact if construction noise exceeds 65 dBA at the construction site boundary between the hours of 7:00 p.m. and 7:00 a.m. Project-level construction would be anticipated to be carried out as sequential phases but could have concurrent activities across the project site.
- Operational/Permanent Noise – Stationary Sources – Mechanical Equipment: For stationary noise source emissions associated with HVAC system noise, exceedance of 50 dBA during the day and 45 dBA during the night would be considered significant, per the City's exterior noise level limits (refer to Table 3.8-2).

[6] M.J. Hayne, et al, November 2006, *Prediction of Crowd Noise, Acoustics*.
[7] Cyril M. Harris, 1994, *Noise Control in Buildings*.

- Operational/Permanent Noise – Mobile Sources and Crowd Noise: For project-attributed increases to local roadway traffic volumes and crowd noise from outdoor gathering spaces and events at the proposed Jack Rose Track/Commencement Facilities, a significant permanent increase to the outdoor sound environment (either described with CNEL or L_{dn}) would be defined as an increase of 3 dBA or greater, where exterior noise levels would already exceed 65 dBA CNEL (an outdoor noise level considered "normally acceptable") based on OPR guidance. An increase of 3 dBA is perceived by the average healthy human ear as barely perceptible.[8,9]
- Vibration: Due to the lack of quantified vibration regulation or policy guidance at the local level, a 0.2 inch-per-second PPV is used as the threshold for an impact related to human annoyance to vibration based on California Department of Transportation guidance (refer to Table 3.8-4). Additionally, the FTA threshold of 0.2 inch-per-second PPV is used as the construction vibration damage criteria of the non-engineered timber and masonry buildings, such as residential buildings. For reinforced-concrete, steel or timber (no plaster) buildings, the criteria would be less stringent – on the order of 0.5 inch-per-second PPV.

Issues Not Evaluated Further

The Master Plan Update would not result in a significant impact related to the following CEQA Guidelines Appendix G checklist question, as determined in the Initial Study (Appendix A), and therefore is not evaluated further in this Draft EIR.

- *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

  The CSULB main campus and Beachside Village property are not located within an airport land use plan; however, they are located within 2 miles of Long Beach Airport. According to the Long Beach Airport Noise Office, CNEL Contour Map, the CSULB main campus and Beachside Village property are located outside of the 60 decibel CNEL contours of the Long Beach Airport and is not affected by aircraft noise.[10] The City of Long Beach also has an Airport Noise Compatibility Ordinance (Municipal Code Chapter 16.43) which regulates Maximum SENEL (Single Event Noise Exposure Limits) limits, prohibited activities, cumulative noise limits (CNEL) and noise budgets, compliance with noise budgets, violation enforcement, general exemptions, and flight limits among other things.[11] Additionally, Long Beach Airport only permits increases in the number of air carrier flights if, as a group, the air carriers are below the noise budget, which was established based on noise data for the baseline year of 1989-1990.[12] As the Master Plan Update would involve proposed improvements to

8 A 3.0 dB difference in noise level is generally the point at which the human ear will perceive a difference in noise level. As such, 3.0 dB is considered a conservative and reasonable threshold of significance, as neither the City of Long Beach or California State University has an adopted threshold.

9 California Department of Transportation, September 2013, *Technical Noise Supplement to the Traffic Noise Analysis Protocol.*

10 City of Long Beach, 2005, Exhibit 3.6-14, Year 2004 CNEL Contours With 11 Additional Air Carrier and 25 Additional Commuter Flights.

11 Long Beach Airport, Long Beach Airport Noise Office, Noise Abatement Frequently Asked Questions, available at: https://www.longbeach.gov/lgb/community-information/noise-abatement/faq/, accessed March 2, 2022.

12 Ibid.

campus facilities within the existing boundaries of the main campus and the Beachside Village property, no impact would occur related to excessive noise for people residing or working in the project area.

3.8.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus, through at least 2035. For the project level analysis, the most impactful near- and mid-term development projects in terms of noise that would be implemented under the Master Plan Update are analyzed, with the analysis focusing on those projects that would be developed near sensitive residential uses.

NOI-1 Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Program-Level Analysis for Master Plan Update

Construction

Typical activities associated with construction are a highly noticeable, but short-term, noise source. Noise from construction activities is generated by two primary sources: (1) the transport of workers and equipment to construction sites and (2) the noise related to active construction equipment. These noise sources can range from being a nuisance for local residents and businesses to being unbearable for sensitive receptors (i.e., residences, hospitals, senior centers, schools, day care facilities, etc.).

Implementation of the Master Plan Update would result in development within the CSULB main campus and Beachside Village property, which would generate noise during construction activities. Construction associated with development under the Master Plan Update could temporarily increase the ambient noise environment in the vicinity of construction activities. Construction noise levels are dependent upon the specific locations, site plans, and construction details of individual projects. Construction would be localized and would occur intermittently for varying periods of time. Typical construction activities would include site preparation, excavation, grading, backfilling and compaction of soils, installation of utility infrastructure, as needed, and construction of proposed new facilities. Typical maximum noise levels generated by construction equipment likely to be used for development under the Master Plan Update are shown in Table 3.8-9.

Operating cycles of the construction equipment listed in Table 3.8-9 may consist of one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance during construction would be due to random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). Noise levels depicted in Table 3.8-9 represent maximum sound levels (L_{max}), which are the highest individual sound occurring during an individual time period. At a distance of 100 feet, construction noise levels would range between approximately 69 dBA and 84 dBA.

Table 3.8-9: Typical Noise Levels for Construction Equipment

Equipment	Acoustical Use Factor[a] (percent)	L_{max} at 50 feet (dBA)	L_{max} at 100 feet (dBA)
Backhoe	40	78	72
Concrete Mixer Truck	40	79	73
Concrete Saw	20	90	84
Crane	16	81	75
Dozer	40	82	76
Excavator	40	81	75
Forklift	20	75	69
Generator	50	81	75
Grader	40	85	79
Loader	40	79	73
Paver	50	77	71
Roller	20	80	74
Tractor	40	84	78
Water Truck	40	75	69
General Industrial Equipment	50	85	79

[a] The Acoustical Use Factor expresses the fraction of time in percent that a piece of construction equipment is anticipated to be operating at full power (i.e., the noisiest condition) during construction activities.

Source: Federal Transit Administration, January 2006, Roadway Construction Noise Model *(FHWA-HEP-05-054)*.

During times when multiple pieces of construction equipment are operating at the same time at areas nearest to sensitive receptors, adjacent residential receptors could be exposed to temporary and intermittent noise levels exceeding the daytime construction noise threshold of 75 dBA, which would result in a significant impact. Additionally, while the majority of construction activities are anticipated to occur during daytime hours, generally 7:00 a.m. to 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday, it is anticipated that some work outside of these hours may be required in order to maintain construction schedules. As such, nighttime construction activities could result in noise levels exceeding the 65 dBA nighttime construction noise level limit established in the CSU construction guidebook. Therefore, Mitigation Measure NOI-A would be required to minimize impacts from construction noise as it would require all construction equipment to be equipped with noise-reducing features (i.e., exhaust mufflers, engine shrouds, etc.), use electrical power when feasible, locate stationary construction equipment far away from the sensitive receptors, reduce idling, and install noise wall or portable barriers when feasible. Additionally, Mitigation Measure NOI-B would require specific techniques to reduce noise levels below 65 dBA during nighttime construction activities. With implementation of Mitigation Measure NOI-A and NOI-B, short-term construction noise impacts associated with development under the Master Plan Update would be less than significant.

Operation

Development under the Master Plan Update has the potential to change the campus outdoor ambient noise environment due to the creation of new stationary and/or mobile noise sources. Stationary noise sources include mechanical equipment, such as rooftop HVAC systems; crowd noise associated student social activities at academic and administrative facilities and campus housing; and parking activities. Mobile noise sources would be associated with vehicular traffic noise on roadways adjacent to the CSULB main campus and Beachside Village property during operation.

Stationary Sources

Mechanical Equipment

The Master Plan Update proposes to renovate, replace, and construct several facilities on the CSULB main campus. Typical mechanical equipment associated with stationary sources includes HVAC units. Actual HVAC activity levels would vary from season to season and day to day, however, noise level reference data for the HVAC units are only available for high activity levels, which occur during daytime hours on a warm summer day. HVAC units for campus facilities typically operate in unoccupied mode throughout the nighttime period, using a temperature threshold for cooling that is unlikely to be triggered during those hours. HVAC related noise levels would be substantially lower during the nighttime hours than during the loudest daytime hour. It is reasonable to expect that, for at least a single daytime hour during warmer times of the year, all or nearly all of the HVAC units on proposed new facilities developed under the Master Plan Update could be operating simultaneously and nearly continuously.

Proposed development under the Master Plan Update that may include HVAC systems would be the proposed academic and administrative facilities, housing, student and campus support facilities, and enclosed athletic facilities (i.e., facilities that include buildings and not open athletic fields). HVAC systems typically result in noise levels that average 60 dBA at 20 feet from the source.[13] As shown in Table 3.8-7, the nearest sensitive receptors to the CSULB main campus are single-family residences located approximately 145 feet to the east. Additionally, while sensitive residential uses are located adjacent to the northwestern boundary of the Beachside Village property, the Master Plan Update proposes partial renovations of the student residence halls, which are located 140 feet from the nearest sensitive receptors.

At 140 feet, HVAC noise levels would attenuate to 43 dBA. Additionally, new buildings and mechanical equipment would be designed to comply with the most current Title 24 and the California Green Building Standards Code that have the most current noise shielding or noise canceling features, such as parapet walls surrounding stationary noise sources, which would further reduce noise levels from HVAC units. Furthermore, due to advances in technology, the new mechanical equipment would be quieter than the existing systems. Therefore, HVAC noise levels would not exceed the City's 50 dBA threshold for stationary sources during the day or the 45 dBA threshold during the night (refer to Table 3.8-2). Furthermore, HVAC noise levels would be much lower than the existing equivalent (L_{eq}) ambient noise levels in the areas surrounding the CSULB main campus and Beachside Village property (53.0 dBA to 69.4 dBA), as shown in Table 3.8-6. Thus, implementation of the Master Plan Update would not result in noise impacts to nearby receptors from HVAC units, and the nearest receptors would not be directly exposed to substantial noise from on-site mechanical equipment. Impacts would be less than significant with implementation of the Master Plan Update.

Crowd Noise

The Master Plan Update proposes renovation, replacement, and/or new construction of administrative and academic facilities and housing. Some proposed improvements would increase outdoor student gathering spaces. Additionally, increases in campus housing facilities would allow for an increase in student and faculty residents, which could increase the potential for crowd noise associated with outdoor student and campus resident activities. Student and campus resident activities associated with proposed improvements to academic and administrative facilities and housing would be consistent with the existing operations at the

[13] Elliot H. Berger, Rick Neitzel, and Cynthia A. Kladden, July 2015, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*.

CSULB main campus and Beachside Village property and would occur in the same locations as similar facilities. Thus, development under the Master Plan Update would generate similar noise levels from outdoor student activities to the existing condition. Furthermore, student gathering spaces are generally concentrated toward the interior of the CSULB main campus and the Beachside Village property and would not be located near sensitive receptors. The nearest sensitive receptors are located approximately 145 feet from the CSULB main campus and approximately 140 feet from the proposed improvements at the Beachside Village property. At 140 feet, crowd noise at the nearest sensitive receptor would be 29 dBA, which would not exceed the 65 dBA CNEL threshold during the day or the City's 45 dBA threshold during the night. Thus, if it were conservatively assumed that student activities would take place at the closest point to the nearest sensitive receptor, the applicable threshold would not be exceeded. Therefore, impacts associated with crowd noise from proposed academic and administrative facilities and housing development under the Master Plan Update would be less than significant.

Parking Activities

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys may be an annoyance to adjacent noise-sensitive receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Noise from parking activities is currently generated at the existing surface parking lots and parking structures at the CSULB main campus and at the surface parking lot at the Beachside Village property. As further discussed in Section 3.9, Population and Housing, proposed improvements at the Beachside Village property would result in an overall reduction in the number of student beds at that location. As such, noise associated with parking activity at the Beachside Village property would not increase over existing conditions. Noise generated by parking activities is already existing in parking facilities provided across the CSULB main campus. As discussed in Chapter 2, Project Description, implementation of the Master Plan Update is anticipated to result in a net increase in the on-campus population of 5,466 FTES, FTE employees, auxiliary employees, and faculty/staff household members[14] through the horizon year, many of whom would drive their personal vehicles and park at the CSULB main campus. However, this increase in the total campus population would increase gradually such that parking activities would not be anticipated to substantially change in any given year through the horizon year 2035. Additionally, several mobility and circulation improvements are proposed under the Master Plan Update that would enhance connections to transit services and bicycle and pedestrian facilities and promote the use of non-auto travel modes, which would minimize noise levels associated with parking activities. Therefore, implementation of the Master Plan Update would not result in substantially greater noise levels than currently exist in parking facilities. Therefore, noise impacts from parking activities would be less than significant with implementation of the Master Plan Update.

Mobile Sources

The most prominent sources of mobile traffic noise in the vicinity of the CSULB main campus are along North Bellflower Boulevard, East 7th Street, and State Route 22. As implementation of the Master Plan Update would result in an increased campus population, it would result in some additional traffic on adjacent roadways, thereby potentially increasing vehicular noise in the vicinity of existing land uses. Table 3.8-10 shows the existing traffic noise levels in the "Baseline" scenario in year 2019 compared to the predicted increases in traffic noise levels resulting from

[14] Due to the provision of housing for faculty and staff as part of the Master Plan Update, it is anticipated that a small number of faculty and staff would reside on campus with other members of their household.

implementation of the Master Plan Update in the "Baseline plus Project" scenario. Under the "Baseline" scenario, noise levels at 100 feet from the roadway centerline currently range from approximately 55.7 dBA to 71.8 dBA, with the highest noise levels occurring along State Route 22. The "Baseline Plus Project" scenario noise levels at 100 feet from the roadway centerline would range from approximately 56.4 dBA to 71.9 dBA, with the highest noise occurring along the same roadway segment. As shown in Table 3.8-10, the noise levels would result in a maximum increase of 0.7 dBA with implementation of the Master Plan Update. This increase in noise would occur along East Anaheim Road between Palo Verde Avenue and North Studebaker Road and East Atherton Street between North Bellflower Boulevard and North Studebaker Road. As this noise level increase would be well below the 3.0 dBA threshold, noise impacts from mobile sources would be less than significant with implementation of the Master Plan Update.

Table 3.8-10: Predicted Increases in Traffic Noise Levels

Roadway Segment	Baseline		Baseline Plus Project		Difference in dBA Between Baseline and Baseline Plus Project
	ADT	dBA at 100 Feet from Roadway Centerline	ADT	dBA at 100 Feet from Roadway Centerline	
North Bellflower Boulevard					
Between Interstate 405 and East 23rd Street	31,784	64.8	33,559	65.0	0.2
Between Garford Street and East Atherton Street	22,920	65.3	24,949	65.7	0.4
Between Atherton Street and Beach Drive	22,500	63.9	23,514	64.1	0.2
Between Beach Drive and East 7th Street	23,103	63.0	23,991	63.2	0.2
Palo Verde Avenue					
Between East Stearns Street and East Atherton Street	19,650	62.1	22,237	62.6	0.5
Between East Atherton Street and East Anaheim Road	12,465	60.1	13,733	60.5	0.4
North Studebaker Road					
Between East Willow Street and East Stearns Street	21,183	62.7	22,071	62.9	0.2
Between East Stearns Street and East Atherton Street	17,911	63.0	19,306	63.3	0.3
Between East Anaheim Road and CA-22	24,021	64.2	25,302	64.4	0.2
East Atherton Street					
Between Ximeno Avenue and Clark Avenue	11,191	59.5	12,256	59.9	0.4
Between Clark Avenue and North Bellflower Boulevard	14,914	60.9	16,119	61.2	0.3
Between North Bellflower Boulevard and Merriam Way	14,211	58.1	16,747	58.8	0.7
Between Merriam Way and Palo Verde Avenue	15,396	58.7	18,059	59.4	0.7

Table 3.8-10: Predicted Increases in Traffic Noise Levels

Roadway Segment	Baseline		Baseline Plus Project		Difference in dBA Between Baseline and Baseline Plus Project
	ADT	dBA at 100 Feet from Roadway Centerline	ADT	dBA at 100 Feet from Roadway Centerline	
Between Palo Verde Avenue and N Studebaker Road	7,910	55.8	9,343	56.5	0.7
East Anaheim Road					
Between Palo Verde Avenue and North Studebaker Road	8,339	55.7	9,835	56.4	0.7
East 7th Street					
Between Bellflower Boulevard and East Campus Drive	69,364	67.5	70,632	67.5	0.1
Between East Campus Drive and North Studebaker Road	72,534	69.7	73,891	69.8	0.1
State Route 22					
East of Studebaker Road	100,443	71.8	103,017	71.9	0.1

Notes:

ADT = average daily trips; dBA = A-weighted decibels; CNEL = community noise equivalent level.

"-" = contour is located within the roadway right-of-way.

Roadway noise levels and contours were calculated using the FHWA highway traffic noise prediction model (FHWA RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Sources: Fehr & Peers modeling for the Transportation Impact Analysis for the Master Plan Update (2023); refer to Appendix H, Noise and Vibration Calculations.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

As discussed in Section 3.8.3, Methodology, the proposed Faculty and Staff Housing project and New Parkside Housing Village project were selected for detailed construction noise analysis as they represent the worst-case construction noise scenarios due to their construction duration, equipment, and intensity, and the distance to the nearest sensitive receptors. The nearest sensitive receptors to the proposed site of the Faculty and Staff Housing project is the multi-family residential building located approximately 170 feet southeast of the project site. The nearest sensitive receptor to the proposed site of the New Parkside Housing Village is the Discovery Preschool located approximately 670 feet northwest (refer to Table 3.8-7).

The estimated construction noise levels at the nearest noise-sensitive receptors are presented in Table 3.8-11. To present a conservative impact analysis, the estimated noise levels were calculated for a scenario in which all heavy construction equipment (e.g., concrete saws, excavators, and dozers) was assumed to operate simultaneously and be located at the construction area nearest to the affected receptors.

Table 3.8-11: Construction Noise Levels at Adjacent Residential Receptors

Project Name	Distance to the nearest sensitive receptor	Construction Phase (L_{max}, dBA)[a]				
		Demolition	Grading	Building Construction	Paving	Architectural Coating
Faculty and Staff Housing	170 feet	79	74	74	79	67
New Parkside Housing Village	670 feet	67	61	71	67	55

a. These noise levels conservatively assume the simultaneous operation of all heavy construction equipment (e.g., concrete saws, excavators, and dozers) at the same precise location.

Source: Federal Highway Administration, 2006, *Roadway Construction Noise Model (RCNM)*; refer to the Noise and Vibration Calculations in Appendix H.

As shown in Table 3.8-11, adjacent residential receptors could be exposed to temporary and intermittent noise levels up to 79 dBA for the most intensive project, the proposed Faculty and Staff Housing project, which would exceed the Long Beach General Plan construction noise standard of 75 dBA during daytime hours. As previously noted, noise levels presented in Table 3.8-11 are conservative, as these noise levels assume the simultaneous operation of all heavy construction equipment (e.g., concrete saws, excavators, and dozers) at the same time in the same precise location. In reality, construction equipment would be used throughout the project site and would not be concentrated at the point closest to the sensitive receptors. It should also be acknowledged that construction activities would occur during daytime hours, generally 7:00 a.m. to 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday, to avoid noise disturbances at nearby receptors. However, it is anticipated that work outside these hours may be required in order to maintain construction schedules and minimize any potential road detours. The noise levels shown in Table 3.8-11 would exceed the Long Beach General Plan 75 dBA daytime construction noise level limit and the 65 dBA nighttime construction noise level limit established in the CSU construction guidebook for most construction activities. As such, noise levels resulting from construction activities would be significant. Implementation of Mitigation Measure NOI-A would minimize impacts from construction noise as it would require all construction equipment to be equipped with noise-reducing features, use electrical power when feasible, locate stationary construction equipment far away from the sensitive receptors, reduce idling, and install noise wall or portable barriers when feasible. Mitigation Measure NOI-B requires specific techniques to reduce noise levels below 65 dBA during nighttime construction activities. With implementation of Mitigation Measures NOI-A and NOI-B, noise levels associated with construction of the near- and mid-term development projects would be less than significant.

Operation

Similar to the program-level analysis for the Master Plan Update, the near- and mid-term development projects have the potential to change the campus outdoor ambient noise environment due to the creation of new stationary and/or mobile noise sources. Stationary noise sources include mechanical equipment, or rooftop HVAC systems; crowd noise associated with the proposed Jack Rose Track/Commencement Facilities project and outdoor social activities at the proposed New Parkside Housing Village project and Faculty and Staff Housing project; and parking activities. Mobile noise sources would be associated with vehicular traffic noise on roadways adjacent to the CSULB main campus and Beachside Village property during operation.

Stationary Sources

Mechanical Equipment

Mechanical equipment associated with the near- and mid-term development projects would consist of HVAC units. As previously discussed, HVAC systems typically result in noise levels that average 60 dBA at 20 feet from the source.[15] The nearest sensitive receptors to the near- and mid-term development projects are the single-family residential uses located approximately 140 feet from the proposed Beachside Housing improvements at the Beachside Village property. At 140 feet, HVAC noise levels would attenuate to 43 dBA. The closest sensitive receptors to the remainder of the near- and mid-term development projects are further than 140 feet. At distances greater than 140 feet, noise from HVAC units would attenuate to less than 43 dBA. Additionally, new buildings and mechanical equipment would be designed to comply with the most current Title 24 and the California Green Building Standards Code that have the most current noise shielding or noise canceling features, such as parapet walls surrounding stationary noise sources, which would further reduce noise levels from HVAC units. Furthermore, due to advances in technology, the new mechanical equipment would be quieter than the existing systems. Therefore, HVAC noise levels generated at the near- and mid-term development projects would not exceed the 50 dBA threshold during the day or the 45 dBA threshold during the night (refer to Table 3.8-2). Furthermore, HVAC noise levels would be much lower than the existing equivalent ambient noise levels in the areas surrounding the CSULB main campus and Beachside Village property (53.0 to 69.4 dBA) as shown in Table 3.8-6. Thus, operation of the near- and mid-term development projects would not result in noise impacts to nearby receptors from HVAC units, and the nearest receptors would not be directly exposed to substantial noise from on-site mechanical equipment. Impacts would be less than significant during operation of the near- and mid-term development projects.

Crowd Noise

Near- and mid-term development projects that could include potential crowd noise sources are the proposed Jack Rose Track/Commencement Facilities project and the proposed housing projects that would result in a net increase in campus residents at outdoor gathering spaces at their respective locations, including the proposed New Parkside Housing Village project and the proposed Faculty and Staff Housing project.

Jack Rose Track/Commencement Facilities

Improvements proposed at the existing Jack Rose Track include expanded bleachers on the east side of the facility, permanent flood lighting, and permanent concessions that could double as food venue for academic programs nearby. There is also a need for locker room space for Track and Field and Cross Country. The proposed additional bleachers would add approximately 3,570 more seats than the existing bleachers, for a new total of approximately 5,100 seats, and would generate additional spectator noise from the stadium during sporting and special events, such as commencement. It should be noted that existing noise levels currently generated by events at the Jack Rose Track facility also include the use of a public announcement (PA) system and speakers, which would remain in use following the renovations. As such, noise generated by the existing PA system is anticipated to substantially increase with implementation of the proposed renovations. Additionally, the Jack Rose Track is located on the interior of the CSULB main campus and the nearest sensitive receptor is located approximately 1,270 feet north of this facility. Nonetheless, the increase in crowd noise generated by the additional seating capacity at the Jack

[15] Elliot H. Berger, Rick Neitzel, and Cynthia A. Kladden, June 2015, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*.

Rose Track/Commencement Facilities could exceed the threshold of a 3 dBA increase over ambient noise level at the nearest sensitive receptor, resulting in a potentially significant impact. Mitigation Measure NOI-C would require a noise assessment prior to final design and incorporation of all recommended noise reduction measures to reduce noise levels at nearby noise sensitive residential land uses to not cause a 3 dBA increase over ambient noise and exceed the applicable land use compatibility standard during events held at the Jack Rose Track/Commencement Facilities. With implementation of Mitigation Measure NOI-C, impacts from crowd noise during operation of the Jack Rose Track/Commencement Facilities project would be less than significant.

Housing

Of the near- and mid-term development projects involving campus housing, the New Parkside Housing Village project creates the most potential for elevated levels of noise from outdoor gathering spaces located near a sensitive receptor. The New Parkside Housing Village would also create new courtyards that offer students outdoor social areas, which could be used by students to socialize intermittently for outdoor events. Although the existing Parkside Housing Village currently includes student beds and provides outdoor courtyards for student social activities, the proposed New Parkside Housing Village would result in a net increase in student beds of approximately 2,085 beds, as compared to the existing 1,387 beds. As such, the New Parkside Housing Village project would result in a higher concentration of student residents at that location on the CSULB main campus and is, thus, considered the most intensive potential crowd noise source among the mid- and near-term housing projects. The nearest sensitive receptor is the Discovery Preschool located approximately 670 feet northwest of the proposed site of the New Parkside Housing Village. Crowd noise at the nearest sensitive receptor would be 16 dBA, which would not exceed the 65 dBA CNEL threshold during the day or the City's 45 dBA threshold during the night.

Although less intensive with approximately 570 beds, the proposed Faculty and Staff Housing project would develop housing at a distance of approximately 170 feet from the nearest sensitive receptor on a site that does not currently contain housing. Crowd noise at the nearest sensitive receptor would be 28 dBA, which would not exceed the 65 dBA CNEL threshold during the day or the City's 45 dBA threshold during the night.

As further discussed in Section 3.9, Population and Housing, the proposed Hillside College Renovations/Addition project and the Beachside Housing project would result in an overall reduction in the number of student beds at each of their respective locations. As such, crowd noise associated with Hillside College Renovations/Addition Project and the Beachside Housing project would not increase over existing conditions.

As none of the proposed near- or mid-term housing projects would result in crowd noise that would exceed the applicable day- or nighttime thresholds, impacts related to crowd noise would be less than significant.

Parking Activities

As discussed, traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards. However, the sudden maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys may be an annoyance to adjacent noise sensitive- receptors. Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. The only near- or mid-term development project that includes parking is the proposed Faculty and Staff Housing project, which would include two levels of podium parking.

This parking area would be located adjacent to existing Parking Lot E6 near the northwest corner of Palo Verde Avenue and State University Drive. The podium parking levels would be surrounded by screening on the exterior of the building and the entrance to the parking area would be located on the north side of the Faculty and Staff Housing building facing the interior of the CSULB main campus and away from sensitive receptors to the southeast. Both the screening and the location of the parking area entrance would help minimize noise associated with parking activities at the new Faculty and Staff Housing project. Additionally, parking lot noise is currently generated at the adjacent Parking Lot E6. As such, the proposed podium parking at the Faculty and Staff Housing project would not significantly increase parking lot noise over the existing conditions. Therefore, impacts associated with noise from parking activities would be less than significant during operation of the proposed Faculty and Staff Housing project.

Mobile Sources

The evaluation of the potential for increases in noise from mobile sources related to implementation of the Master Plan Update in the program-level analysis determined that impacts would be less than significant. The program-level analysis of mobile noise sources above accounts for all development across the CSULB main campus and the Beachside Village property through the horizon year, as it is based on total population, rather than individual development projects. As such, the near- and mid-term development projects are accounted for in the program-level mobile source noise analysis and would also be expected to have a less than significant impact during operation.

NOI-2 Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Program-Level Analysis for Master Plan Update

Construction

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

Construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. The vibration level at which human annoyance is perceived is 0.2 inch-per-second PPV. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. The residential structures that make up the sensitive uses near the CSULB main campus and Beachside Village property are non-engineered timber and masonry buildings. For buildings, the FTA architectural damage criterion for continuous vibrations is 0.2 inch-per-second PPV.

Development associated with the Master Plan Update would generate vibration during construction activities. Vibration levels are dependent upon the specific equipment and location of the activities. Construction would be localized and would occur intermittently for varying periods of time. Vibration velocities for typical construction equipment that would be used for development under the Master Plan Update are shown in Table 3.8-12.

Table 3.8-12: Typical Vibration Levels for Construction Equipment

Equipment	Reference peak particle velocity at 25 feet (inch-per-second)	Approximate peak particle velocity at 130 feet (inch-per-second)[a]
Pile driver (impact) – typical	1.518	0.1280
Pile driver (sonic) – typical	0.644	0.0619
Vibratory Roller	0.210	0.0177
Large Bulldozer	0.089	0.0075
Caisson Drilling	0.089	0.0075
Loaded Trucks	0.076	0.0064
Jackhammer	0.035	0.0030
Small Bulldozer	0.003	0.0003

a. Calculated using the following formula:
PPV equip = PPVref x (25/D)1.5
where: PPV (equip) = the peak particle velocity in inch-per-second of the equipment adjusted for the distance
PPV (ref) = the reference vibration level in inch-per-second from Table 7-4 of the FTA Transit Noise and Vibration Impact Assessment Manual
D = the distance from the equipment to the receiver

Source: Federal Transit Administration, September 2018, *Transit Noise and Vibration Impact Assessment Manual*.

The ground-borne vibration generated during construction activities would primarily impact existing sensitive uses that are located near construction activities. Ground-borne vibration decreases rapidly with distance. As indicated in Table 3.8-12, based on the FTA data, vibration velocities from typical heavy construction equipment that would be used during project construction range from 0.003 to 0.089 inch-per-second PPV at 25 feet from source of activity. As shown in Table 3.8-7 in Section 3.8.3, Methodology, above, the closest representative sensitive receptors are located 145 feet from the CSULB main campus and 140 feet from the Beachside Village property. For a conservative analysis, vibration levels were estimated at 130 feet from sensitive receptors. The vibration velocities for construction equipment at a distance of 130 are shown in Table 3.8-12. At 130 feet from construction equipment, vibration levels would be below the 0.2 inch-per-second PPV threshold for human annoyance and building damage. Additionally, while heavy-duty trucks would travel through roadways adjacent to the CSULB main campus and the Beachside Village property during construction, according to the FTA, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Therefore, vibration impacts during construction activities associated with development under the Master Plan Update would be less than significant.

Operation

Implementation of the Master Plan Update would involve renovation of existing buildings, demolition and replacement of existing buildings in the same physical location, and construction of some new buildings, all of which would be consistent with the existing university facilities. As such, development under the Master Plan Update would not introduce new land uses to the CSULB main campus or Beachside Village property that could result in perceptible groundborne vibration. Therefore, impacts would be less than significant during operation.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in impacts similar to the program-level impacts of implementation of the Master Plan Update. Construction activities and equipment associated with the near- and mid-term development projects would generate vibration. Vibration levels are dependent upon the specific equipment and location of the activities. Construction would be localized and would occur intermittently for varying periods of time. Vibration velocities for typical construction equipment that would be used for construction of the near- and mid-term development projects are shown in Table 3.8-12.

The ground-borne vibration generated during construction activities would primarily impact existing sensitive uses that are located near construction activities associated with the near- and mid-term development projects. Ground-borne vibration decreases rapidly with distance. The closest sensitive receptors to the near- and mid-term development projects are located 145 feet from the CSULB main campus and 140 feet from the Beachside Village property. As shown in Table 3.8-12, construction equipment vibration levels would not exceed the 0.2 inch-per-second PPV threshold for human annoyance or building damage. Additionally, while heavy-duty trucks would travel through roadways adjacent to the CSULB main campus and the Beachside Village property during construction, according to the FTA, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Therefore, vibration impacts during construction of the near- and mid-term development projects would be less than significant.

Operation

The near- and mid-term development projects include replacement, renovation, and new development projects consistent with existing university uses. The near- and mid-term development projects would not introduce new land uses that could result in perceptible groundborne vibration. Therefore, impacts would be less than significant impact during operation.

3.8.5 Mitigation Measures

The following mitigation measures would be required to reduce noise and vibration impacts during construction and operation.

NOI-A The following measures shall be implemented to minimize construction noise:

1. Construction activity shall generally be limited to the daytime between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday. Construction activities shall be prohibited on Federal holidays. Loud construction (e.g., asphalt removal, large-scale grading operations) shall not be scheduled on Sundays or during finals week and preferentially shall be scheduled during school breaks, summer/winter break, etc.
2. All construction equipment shall be properly maintained and equipped with noise-reducing air intakes, exhaust mufflers, and engine shrouds in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

3. Electrical power, rather than diesel equipment, shall be used to run compressors and similar power tools and to power any temporary structures, such as construction trailers.
4. All stationary construction equipment (e.g., electrical generators, pumps, refrigeration units, and air compressors) and equipment staging areas shall be located as far as feasible from occupied residences adjacent to the CSULB main campus and the Beachside Village property or the Discovery Preschool located 5550 East Atherton Street.
5. When anticipated construction activities are expected to occur less than 140 feet from an existing off-campus residential land use, one or more of the following techniques shall be employed to keep noise levels below a threshold of 75 dBA at potentially affected sensitive receptors:
    a. Reduce construction equipment and vehicle idling and active operation duration.
    b. Install or erect on-site a temporary, solid noise wall (or acoustical blanket having sufficient mass, such as the incorporation of a mass-loaded vinyl skin or septum) of adequate height and horizontal extent so that it linearly occludes the direct sound path between the noise-producing construction process(es) or equipment and the sensitive receptor(s) of concern.
    c. Where impact-type equipment is anticipated onsite, apply noise-attenuating shields, shrouds, portable barriers or enclosures, to reduce the magnitudes of generated impulse noises.

NOI-B If nighttime construction is required, noise levels shall not exceed 65 dB L_{max} when measured at the construction site boundary between the hours of 7:00 p.m. and 7:00 a.m. One or more of the following techniques shall be employed:

1. The construction contractor shall limit haul truck deliveries to the same hours specified for construction activities (between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday and Sunday). The haul route exhibit shall design delivery routes to minimize the exposure of sensitive land uses or residential dwellings to delivery truck-related noise.
2. The on-site speed limit for all vehicles and construction equipment shall be limited to 15 mph on any construction site.

NOI-C Jack Rose Track/Commencement Facilities Crowd Noise: To minimize operational noise levels generated during events at the Jack Rose Track, a noise assessment shall be conducted by a qualified acoustical engineer or noise specialist to evaluate potential increases in noise levels associated with crowd noise from events at the proposed Jack Rose Track/Commencement Facilities project, including the collection of new ambient noise measurements. The assessment shall be conducted prior to final design. All recommended noise reduction measures shall be incorporated into the design to reduce increases in existing operational noise levels at nearby noise-sensitive land uses to not cause a 3 dBA increase over ambient noise levels and exceed the applicable land use compatibility standard. Such measures may include, but are not limited to, the incorporation of structural shielding and revised placement for amplified sound system speakers.

3.8.6 Level of Significance After Mitigation

Implementation of Mitigation Measures NOI-A, NOI-B, and NOI-C would ensure that noise impacts during construction and operation would be less than significant.

3.8.7 Cumulative Impacts

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered cumulatively considerable. “Related projects” refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

Short-term Construction Noise

The CSULB main campus and Beachside Village property are located within an existing highly-urbanized area that is fully developed. Construction activities associated with development under the Master Plan Update would be intermittent and temporary and would be spread across the planning horizon to 2035. Additionally, few improvements are proposed at the CSULB main campus boundaries, with the majority of activities taking place on the interior of the main campus. Short-term construction noise is a localized activity and would affect only land uses that are immediately adjacent to a specific project site. Mitigation Measures NOI-A and NOI-B would be implemented to reduce construction noise impacts associated with development under the Master Plan Update to less than significant. As such, construction activities associated with development under the Master Plan Update are not anticipated to combine with construction noise from related projects in the surrounding area. Furthermore, related project would be required to comply with City of Long Beach and other applicable requirements for construction noise limits. Therefore, implementation of the Master Plan Update would not contribute to cumulatively significant noise impacts during construction.

Long-term Operational Noise

Cumulative stationary noise sources would generally be less than significant with compliance with the City’s Noise Ordinance. However, as traffic noise tends to be the main source of noise at the CSULB main campus and Beachside Village property and surrounding areas, the analysis below considers whether the increase in traffic noise would be noticeable and significant per the applicable criteria shown below.

Mobile Source

A project’s contribution to a cumulative traffic noise increase would be considered significant if the combined effect exceeds the perception level (i.e., auditory level increase) threshold. The combined effect compares the “Cumulative With Project” condition to “Existing” conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by related projects in the project vicinity. The following criterion has been utilized to evaluate the combined effect of the cumulative noise increase.

- Combined Effects. The cumulative with project noise level (“Cumulative With Project”) would cause a significant cumulative impact if a 3.0 dB increase over existing conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use.

Although there may be a significant noise increase due to implementation of the Master Plan Update in combination with other related projects (combined effects), it must also be demonstrated that implementation of the Master Plan Update has an incremental effect. In other words, a significant portion of the noise increase must be due to implementation of the Master Plan Update. The following criterion has been utilized to evaluate the incremental effect of the cumulative noise increase.

- Incremental Effects. The "Cumulative With Project" causes a 1.0 dBA increase in noise over the "Cumulative Without Project" noise level.

A significant cumulative impact would result only if both the combined and incremental effects criteria have been exceeded. Noise is a localized phenomenon and reduces as distance from the source increases. Consequently, only the Master Plan Update and development in the general vicinity would contribute to cumulative noise impacts. Table 3.8-13, Cumulative Traffic Noise Levels, provides traffic noise effects along roadway segments in the project vicinity for "Existing," "Cumulative Without Project," and "Cumulative With Project" conditions, including incremental and net cumulative impacts. As indicated in Table 3.8-13, noise levels would not exceed the combined effects criterion of 3.0 dBA or the incremental effects criterion of 1.0 dBA. Therefore, there would not be any roadway segments that would be subject to significant cumulative impacts, as they would not exceed both the combined and incremental effects criteria. Therefore, implementation of the Master Plan Update, in combination with cumulative background traffic noise levels, would result in less than significant cumulative impacts.

The mobile source noise analysis is inherently cumulative as the Master Plan Update is a long-term planning document for CSULB as a whole. As indicated in Table 3.8-10 and Table 3.8-13, development assumed under the Master Plan Update would not generate a significant audible noise level increase along any of the roadway segments. Thus, implementation of the Master Plan Update would result in a less than significant cumulative noise impact.

Table 3.8-13 Cumulative Traffic Noise Levels

Roadway Segments	Existing: *dBA at 100 Feet from Roadway Centerline*	Cumulative (2035) Without Project: *dBA at 100 Feet from Roadway Centerline*	Cumulative (2035) With Project: *dBA at 100 Feet from Roadway Centerline*	Combined Effects: *Difference In dBA Between Existing and Cumulative With Project*	Incremental Effects: *Difference in dBA Between Cumulative Without Project and Cumulative With Project*	Cumulatively Significant Impact?
North Bellflower Blvd						
Between Interstate 405 and East 23rd Street	64.8	64.6	64.8	0.0	0.2	No
Between Garford Street and East Atherton Street	65.3	65.1	65.5	0.1	0.4	No
Between Atherton Street and Beach Drive	63.9	63.7	63.9	0.0	0.2	No
Between Beach Drive and East 7th Street	63.0	62.8	63.0	0.0	0.2	No
Palo Verde Ave						
Between East Stearns Street and East Atherton Street	62.1	61.6	62.2	0.1	0.6	No
Between East Atherton Street and East Anaheim Road	60.1	59.9	60.3	0.2	0.4	No
North Studebaker Road						
Between East Willow Street and East Stearns Street	62.7	62.8	63.0	0.3	0.2	No
Between East Stearns Street and East Atherton Street	63.0	62.8	63.2	0.2	0.3	No
Between East Anaheim Road and CA-22	64.2	63.9	64.1	-0.1	0.2	No
East Atherton Street						
Between Ximeno Avenue and Clark Avenue	59.5	59.5	59.9	0.3	0.4	No

Table 3.8-13 Cumulative Traffic Noise Levels

Roadway Segments	Existing: *dBA at 100 Feet from Roadway Centerline*	Cumulative (2035) Without Project: *dBA at 100 Feet from Roadway Centerline*	Cumulative (2035) With Project: *dBA at 100 Feet from Roadway Centerline*	Combined Effects: *Difference In dBA Between Existing and Cumulative With Project*	Incremental Effects: *Difference in dBA Between Cumulative Without Project and Cumulative With Project*	Cumulatively Significant Impact?
Between Clark Avenue and North Bellflower Boulevard	60.9	60.7	61.1	0.2	0.3	No
Between North Bellflower Boulevard and Merriam Way	58.1	57.8	58.6	0.5	0.8	No
Between Merriam Way and Palo Verde Avenue	58.7	58.5	59.2	0.6	0.7	No
Between Palo Verde Avenue and North Studebaker Road	55.8	56.1	56.8	1.0	0.7	No
East Anaheim Road						
Between Palo Verde Avenue and North Studebaker Road	55.7	55.5	56.2	0.5	0.7	No
East 7th Street						
Between Bellflower Boulevard and East Campus Drive	67.5	67.4	67.5	0.1	0.1	No
Between East Campus Drive and North Studebaker Road	69.7	69.6	69.7	0.0	0.1	No
State Route 22						
East of Studebaker Road	71.8	71.6	71.7	0.0	0.1	No

Notes:
dBA = A-weighted decibels
Roadway noise levels and contours were calculated using the FHWA highway traffic noise prediction model (FHWA RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.

Sources: Fehr & Peers modeling for the Transportation Impact Analysis for the Master Plan Update (2023); refer to Appendix H, Noise and Vibration Calculations.

Stationary Sources

New stationary noise sources associated with development under the Master Plan Update would include HVAC systems, crowd noise, and parking activities. HVAC systems included in new facilities would generally replace existing systems. Additionally, due to advances in technology, the new mechanical equipment would be quieter than the existing systems. Thus, mechanical equipment noise from HVAC systems would not contribute to a cumulatively considerable noise impact.

Crowd noise associated with proposed housing improvements under the Master Plan Update would not generate noise levels exceeding the measured ambient noise levels at nearby noise sensitive receptors. Proposed improvements at the Jack Rose Track/Commencement Facilities would include increased seating capacity, which could lead to increased crowd noise at nearby sensitive receptors during events. Crowd noise associated with events at the Jack Rose Track/Commencement Facilities would be minimized through implementation of Mitigation Measure NOI-C, requiring a noise assessment and incorporation of noise reduction measures. Additionally, there are no related projects that could combine with development under the Master Plan Update to generate significant sources of crowd noise. As such, implementation of the Master Plan Update, taking into account related projects, would not contribute to a cumulatively considerable crowd noise impact.

Parking noise associated with development under the Master Plan Update would be similar to existing parking activities at the CSULB main campus and the Beachside Village property. Additionally, there are no significant parking facilities that could combine with development under the Master Plan Update. Therefore, implementation of the Master Plan Update would not contribute to a cumulatively considerable noise impact from parking activities.

In addition, all new stationary noise sources proposed in the vicinity would be required to comply with the provisions and noise standards contained in the City's Noise Ordinance and other applicable noise regulations. Therefore, impacts related to cumulative stationary noise exposure would be less than significant.

Short-term and Long-term Vibration

As discussed above, development under the Master Plan Update would not generate substantial groundborne vibration during construction or operation. Groundborne vibration generated from cumulative development projects would be reviewed on a project-by-project basis and required to minimize ground-borne vibration pursuant to City of Long Beach policies and other applicable regulations. Therefore, implementation of the Master Plan Update would not contribute to a cumulatively significant vibration impact.

3.9 POPULATION AND HOUSING

This section evaluates the potential impacts related to population and housing that would result from implementation of the Master Plan Update. This section presents the regulatory setting, environmental setting, methodology for determining potential impacts, impact analysis, and an analysis of potential cumulative impacts pertaining to population and housing. The information in this section is based on the proposed Master Plan Update, 2020 U.S. Census data, State of California Department of Finance estimates, the Southern California Association of Governments (SCAG) Regional Growth Forecasts, and the City of Long Beach General Plan Housing Element. This section is also based, in part, on the Campus Population Projections Memorandum, which is included as Appendix B. Potential growth-inducing impacts of the Master Plan Update are further addressed in Chapter 4, Other CEQA Considerations.

Changes in population and housing demand are considered social and economic effects, not environmental effects. Section 15382 of the CEQA Guidelines states: "An economic or social change by itself shall not be considered a significant effect on the environment." According to CEQA, these effects should be considered in an EIR only to the extent that they create adverse impacts on the physical environment. This section of the EIR examines the potential for the proposed Master Plan Update to result in a substantial increase in unplanned population growth and/or a resultant demand for housing that cannot be met by the existing and/or projected housing supply, thus requiring construction of new housing; or substantial displacement of people or housing such that construction of replacement housing would be required.

No comments related to population and housing were received in response to the NOP. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.9.1 Regulatory Setting

State

California Education Code

The California Education Code contains several provisions mandating CSU enrollment access levels to ensure the CSU system accommodates all eligible California resident students. Code Section 66011(a) of the California Education Code states that "all resident applicants to California institutions of public higher education, who are determined to be qualified by law or by admission standards established by the respective governing boards, should be admitted to either (1) a district of the California Community Colleges, in accordance with Section 76000, (2) the California State University, or (3) the University of California." Furthermore, Section 66202.5 of the Education Code states the following:

> The State of California reaffirms its historic commitment to ensure adequate resources to support enrollment growth, within the systemwide academic and individual campus plans to accommodate eligible California freshmen applicants and eligible California Community College transfer students, as specified in Sections 66202 and 66730.
>
> The University of California and the California State University are expected to plan that adequate spaces are available to accommodate all California resident students who are eligible and likely to apply to attend an appropriate place within the system. The State of California likewise reaffirms its historic commitment to ensure that resources are provided to make this expansion possible and shall commit resources to ensure that students from enrollment categories designated in subdivision (a) of Section 66202 are accommodated in a place within the system.

Section 66220 of the California Education Code requires the CSU to conduct a needs assessment to determine the projected student housing needs for each university for the 2022-2023 fiscal year by July 1, 2022. The CSU is also required to create a student housing plan focusing on affordable student housing and outlining how projected student housing needs will be met.

Section 66741 of the California Education Code requires acceptance of qualified transfer students at the advanced standing level.

California State University

California State University Enrollment and Operating Budget

As discussed in Chapter 2, Project Description, the CSU Board of Trustees requires each university to have a master plan showing existing and anticipated facilities necessary to accommodate a specified enrollment at an estimated target date or planning horizon, in accordance with approved educational policies and objectives. Each year, the CSU submits a request for funding for consideration by the state legislature to support planned enrollment growth as part of the annual budget process. The annual state budget identifies anticipated enrollment growth systemwide for the CSU. Following negotiation, the CSU allocates enrollment growth funding for California residents according to an enrollment projection for each of the 23 CSU universities. Universities are expected to manage their enrollments within a small margin of error around that projection as they receive state/CSU funding only for the targeted number. According to the 2019-2020 California State Budget, the state expects the CSU to accommodate growth in enrollment of 10,000 FTES systemwide during that period. In general, enrollment growth at each university is driven by a directive from the CSU to absorb a reasonable proportion of the enrollment increases across the CSU system as a whole. Enrollment growth is also affected by campus-specific factors such as physical capacity, availability of and interest in specific academic programs, and the individual decisions of potential students. As also discussed in Chapter 2, Project Description, Master Plans are based on FTES enrollment projections prepared by each university in consultation with the CSU Office of the Chancellor.

California State University, Long Beach Housing Capacity Expansion Plan

In 2019, CSULB completed the Housing Capacity Expansion Plan, which outlines a strategy for the redevelopment of housing and residential life facilities on campus. The study focuses on potential opportunity sites for Beachside, Parkside, and Hillside student residential villages, and includes a college-wide strategy for current and future student housing at CSULB, including a physical framework by village for the campus. The strategy is based on several criteria, including connection to the core of the campus; equitable distribution of housing choices; variety of open spaces; enhanced activity along Bouton Creek and Beach Drive; enhanced wayfinding at the intersection of Determination Drive and Bouton Creek; linked colleges; distinctive college identities; minimizing the beds temporarily offline at any given time; and potential cost. The goal for the 15-year timeline of the Housing Capacity Expansion Plan is to increase the number of beds for the University from 3,000 to 4,000. To achieve this goal, CSULB aims to right-size existing units, remove facilities in poor condition, replace planned apartments with pods and suites, and provide apartments for faculty and staff.

California State University, Long Beach First Year Housing Intention Policy

As of Fall 2020, incoming first-year students are not required to live on campus. However, first-year students are required to inform University Housing where they will be living during their first year at CSULB.

Regional

Southern California Association of Governments 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG is a metropolitan planning organization, Regional Transportation Planning Agency, and a Council of Governments that encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in an area covering more than 38,000 square miles. The agency develops long-range regional transportation plans, including sustainable communities strategy and growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the Air Quality Management Plans for the South Coast Air Basin.

On September 3, 2020, SCAG adopted the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2020-2045 RTP/SCS, also known as Connect SoCal, is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The 2020-2045 RTP/SCS includes projections for growth in employment, population, and households in the region through 2045.

Regional Housing Needs Assessment

The State of California requires each local jurisdiction to periodically develop a new Regional Housing Needs Assessment (RHNA) to plan for its share of the state's housing need for people of all income levels. The Regional Housing Need Allocation process requires the California Department of Housing and Community Development to determine the total housing need for each region in the state for an eight-year planning period, and each region's Council of Governments is then responsible for distributing this need (i.e., each jurisdiction's "fair share") to local governments. Each jurisdiction's housing element must include a strategy to meet its share of the region's housing need for four income categories that encompass all levels of housing affordability and must be certified by the California Department of Housing and Community Development.

In March 2020, SCAG adopted the 6th Cycle Regional Housing Needs Assessment Allocation Plan for the planning period October 2021 through October 2029, which identifies the housing needs determination for the SCAG region during the planning period. SCAG's RHNA allocation is 1,341,827 housing units.[1] Within the SCAG region, Los Angeles County is responsible for 812,060 units and Orange County is responsible for 183,861 units.[2] Each jurisdiction is responsible for demonstrating their ability to meet their fair share of the regional housing need in their respective housing elements. The RHNA allocation plan allocates housing units within the region based, in part, on the growth projections in the RTP/SCS.[3]

3.9.2 Environmental Setting

The study area for the evaluation of population and housing impacts includes the CSULB main campus and Beachside Village, the City of Long Beach, and the entire SCAG region, which includes Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. The SCAG region is the basis for growth forecasts and various regional plans that relate to population and housing impacts. Due to the CSULB campus's location within Los Angeles County and

1 Southern California Association of Governments, Regional Housing Needs Assessment, available at: https://scag.ca.gov/rhna, accessed November 28, 2022.
2 Ibid.
3 Ibid.

proximity to Orange County, the two counties within the SCAG region are presented separately for comparison purposes.

As discussed in Chapter 2, Project Description, the COVID-19 pandemic (beginning March 2020) has led to increases in telework and remote/online learning that have affected the number of people on campus or traveling to and from campus. As such, 2019-2020 academic year data serves as the baseline for existing conditions throughout this section as it is the most recent year of pre-pandemic, in-person campus operations.

Population and Population Growth

Regional Population

According to the 2020-2045 RTP/SCS, annual population growth in the region is anticipated to follow the trend of slowing growth shown in the national population. In the SCAG region, annual population growth is projected to be approximately 0.61 percent through 2045, which is slower than the 0.82 percent growth rate of the previous SCAG planning period (2000 to 2016), and slower than the historical growth rate for the region, which reached 1.65 percent from 1970 to 2000.[4] The slowing growth rate is a function of declining birth rate and increased population age, resulting in fewer births and more deaths per year.[5]

According to California Department of Finance, the total population in 2019 was approximately 19,043,952 residents in the SCAG region, of which, Los Angeles County had approximately 10,210,966 residents, and Orange County had approximately 3,195,197 residents.[6] Table 3.9-1 shows the population projections from 2020 to 2045 for the SCAG region as well as for Los Angeles and Orange counties based on the SCAG Connect SoCal 2020-2045 RTP/SCS. The population in the Master Plan Update horizon year of 2035 is projected to be 21,443,000 residents in the SCAG region, 11,174,000 residents in Los Angeles County, and 3,499,000 residents in Orange County. The increase in population between 2019 and 2035 is anticipated to be approximately 12.6 percent for the SCAG region, 9.4 percent for Los Angeles County, and 9.5 percent for Orange County.

Table 3.9-1: Regional Population Projections

Location	2019[a]	2020[b]	2035[b]	2045[b]
SCAG Region	19,043,952	19,518,000	21,443,000	22,504,000
Los Angeles County	10,210,966	10,407,000	11,174,000	11,674,000
Orange County	3,195,197	3,268,000	3,499,000	3,535,000

Source: [a] California Department of Finance, Population Projections, P-1: State Population Projections (2010-2060), Table P-2A Total Population for California and Counties, available at: https://dof.ca.gov/forecasting/demographics/projections/, accessed November 21, 2022; [b] Southern California Association of Governments, September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast.*

City of Long Beach Population

The City of Long Beach is located in southern Los Angeles County. According to the City of Long

4 Southern California Association of Governments, Adopted September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.

5 Ibid.

6 California Department of Finance, Population Projections, P-1: State Population Projections (2010-2060), Table P-2A Total Population for California and Counties, available at: https://dof.ca.gov/forecasting/demographics/projections/, accessed November 21, 2022.

Beach General Plan Housing Element, Long Beach is the seventh largest city in the State and had a population of 466,766 residents in 2019.[7] The City's 2019 population accounted for approximately 4.6 percent of the population of Los Angeles County, and approximately 2.5 percent of the population of the SCAG region. Population projections for the City of Long Beach are shown in Table 3.9-2. The 2020-2045 RTP/SCS does not include an interim population projection for the City of Long Beach for the Master Plan Update horizon year of 2035. As such, the City of Long Beach 2035 population projection from the previous 2016-2040 RTP/SCS is shown in Table 3.9-2. In 2035, it is estimated that the City of Long Beach population would represent approximately 4.3 percent of the population of Los Angeles County and 2.2 percent of the population of the SCAG region. The SCAG Connect SoCal 2020-2045 RTP/SCS projects the population of the City of Long Beach to reach approximately 489,600 residents by 2045, representing approximately 4.2 percent of the Los Angeles County population and 2.2 percent of the total population of the SCAG region.

Table 3.9-2: City of Long Beach Population Projections

Location	2019[a]	2035[b]	2045[c]
City of Long Beach	466,766	481,500	489,600

Sources: [a] City of Long Beach, February 2022, *General Plan - Housing Element*; [b, c] Southern California Association of Governments, September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast.*

CSULB Population

For purposes of the analysis in this section, the campus population consists of FTES, FTE (full-time-equivalent) employees, and auxiliary employees. As discussed in Chapter 2, Project Description, students at CSULB can be part-time or full-time and each has different in-person class attendance patterns. Thus, one student who takes 15 units is considered one FTES. For the purposes of this EIR, FTES is the most appropriate measure of student population at the campus, as opposed to headcount, because FTES provides a more accurate representation of the population that will be on-campus at a given time. Headcount totals assume that every enrolled student is on-campus full-time, which can lead to an overstatement of the campus's student population and, consequently, the associated environmental impacts. Potential impacts associated with the on-campus population are analyzed proportionate to the amount of time any one student or faculty member may be on campus based on their unit loads, or staff based on their responsibilities. FTE employees include the following occupational groups who are assumed to be on campus most of the time: faculty, professional/technician, office/administrative support, service occupations, management, and construction/maintenance/transportation.[8] Auxiliary employees who are assumed to be on campus most of the time include those who are employed at Associated Students, Inc., the 49er Shops, the CSULB 49er Foundation, and the CSULB Research Foundation.[9] Table 3.9-3 shows the population totals for each group based on AY 2019-2020 data.

7 City of Long Beach, February 2022, *General Plan - Housing Element*.

8 The California State University, Faculty and Staff, Employee Profile, Previous Year's Reports, Employee Profile 2009-2019, available at: https://www.calstate.edu/csu-system/faculty-staff/employee-profile/Pages/past-reports.aspx, accessed June 29, 2022.

9 California State University, Long Beach, Auxiliaries, available at: https://www.csulb.edu/auxiliaries, accessed July 27, 2022.

Table 3.9-3: Total Campus Population (AY 2019-2020)

Population Group	Academic Year 2019-2020
Full-Time-Equivalent Students (On-Campus)	28,876
Full-Time-Equivalent Employees	3,295
Auxiliary Employees	528
Total	32,699

Housing

Regional Housing

In March 2020, SCAG adopted the 6th Cycle Regional Housing Needs Assessment Allocation Plan, which covers the planning period from October 2021 through October 2029. Based on the latest RHNA, the housing allocated for the SCAG region is 1,341,827 housing units, of which 812,060 units are allocated for Los Angeles County and 183,861 units are allocated for Orange County.[10] As discussed in the regulatory setting in Section 3.9.1, each jurisdiction is responsible for demonstrating its ability to meet its fair share of the regional housing need in its respective General Plan Housing Element.

The RHNA plans for the need of housing units, which are separate distinct living quarters and can be a house, apartment, mobile home, group of homes, or a single room.[11] One input used to assess the housing unit need is household growth. SCAG projects housing in terms of households, which are defined as occupied housing units and refer to the number of individuals occupying a housing unit.[12] SCAG projects that the region will add approximately 1,621,000 households by 2045. The annual household growth is projected to be approximately 0.83 percent over the RTP/SCS planning horizon (2016-2045), which would outpace the anticipated regional annual population growth of 0.61 percent discussed above.[13] The region's average household size (i.e., the number of persons per household) is anticipated to gradually decrease over the RTP/SCS planning horizon from 3.1 in 2016 to 2.9 by 2045 due to anticipated increases in household formation and housing construction.[14]

Table 3.9-1 shows the housing projections from 2020 to 2045 for the SCAG region as well as for Los Angeles and Orange counties based on the SCAG Connect SoCal 2020-2045 RTP/SCS. The estimated households in 2020 are 6,333,000 for the SCAG region, 3,472,000 in Los Angeles County, and 1,065,000 in Orange County. The households in the Master Plan Update horizon of 2035 are projected to be 7,170,000 in the SCAG region, 3,885,000 in Los Angeles County, and 1,125,000 in Orange County. The increase in housing from 2020 to 2035 is anticipated to be approximately 13.2 percent for the SCAG region, 11.9 percent for Los Angeles County, and 5.6 percent for Orange County.

10 Southern California Association of Governments, Regional Housing Needs Assessment, available at: https://scag.ca.gov/rhna, accessed November 28, 2022.
11 U.S. Census Bureau, Quickfacts, Population Estimates Program, Housing Unit Definition, available at: https://www.census.gov/quickfacts/fact/note/US/HSG010221, accessed December 14, 2022.
12 U.S. Census Bureau, Survey and Programs, Subject Definitions, available at: https://www.census.gov/programs-surveys/cps/technical-documentation/subject-definitions.html#household, accessed December 14, 2022.
13 Southern California Association of Governments, Adopted September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.
14 Ibid.

Table 3.9-4: Regional Housing Projections

Location	2020[a]	2035[a]	2045[a]
SCAG Region	6,333,000	7,170,000	7,633,000
Los Angeles County	3,472,000	3,885,000	4,119,000
Orange County	1,065,000	1,125,000	1,154,000

Sources: [a] California Department of Finance, Population Projections, P-1: State Population Projections (2010-2060), Table P-2A Total Population for California and Counties, available at: https://dof.ca.gov/forecasting/demographics/projections/, accessed November 21, 2022; [b] Southern California Association of Governments, September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast.*

City of Long Beach Housing

Housing projections for the City of Long Beach are shown in Table 3.9-5. The estimated households in the City of Long Beach in 2020 (179,530) accounted for approximately 5.2 percent of the households in Los Angeles County, and approximately 2.8 percent of the households in the SCAG region. In 2035, it is estimated that the City of Long Beach households (188,500) would represent approximately 4.9 percent of the housing in Los Angeles County and 2.6 percent of the housing of the SCAG region. The SCAG Connect SoCal 2020-2045 RTP/SCS projects the housing the City of Long Beach to reach approximately 198,200 households by 2045, representing approximately 4.8 percent of the Los Angeles County housing and 2.6 percent of the total housing in the SCAG region. The RHNA allocation for the City of Long Beach is 26,502 housing units for the 2021-2029 planning period, or 3.3 percent of the total RHNA allocation for Los Angeles County.

Table 3.9-5: City of Long Beach Housing Projections

Location	2020[a]	2035[b]	2045[b]
City of Long Beach	179,530	188,500	198,200

Sources: [a] California Department of Finance, Population Projections, P-1: State Population Projections (2010-2060), Table P-2A Total Population for California and Counties, available at: https://dof.ca.gov/forecasting/demographics/projections/, accessed November 21, 2022; [b] Southern California Association of Governments, September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast.*

CSULB Housing

Existing CSULB housing consists of the Parkside, Hillside, and Beachside Villages (i.e., residential communities). Parkside and Hillside are located on the CSULB main campus while Beachside Village is located approximately 0.6 miles west of the main campus. Currently, there is a total of 3,008 student beds across the three residential communities. Additionally, there are 13 on-campus non-student units for Housing and Residential Life (HRL) staff.[15]

Parkside is located at the northwestern section of the CSULB main campus and comprises nine buildings with a total of 1,387 student beds. A portion of Parkside is reserved for first-year students only, with the remainder open to all academic class levels.[16] Hillside is located at the southwestern

[15] It is assumed each unit includes an average of two people; therefore, 26 beds for Housing and Residential Life are included for planning purposes.

[16] "Academic class level" refers to the classification of students based on units completed. The undergraduate class levels are first-year, sophomore, junior, and senior.

section of the CSULB main campus and comprises seven buildings with a total of 1,005 student beds. Hillside is open to all academic class levels. Beachside Village includes two buildings with a total of 616 student beds. Beachside Village is open to all academic class levels and transfer students. Existing University housing accommodates approximately 10 percent of the total student population. The remaining 90 percent of the student population and the majority of campus faculty/staff reside off-campus. Table 3.9-6 shows the number of student beds per housing community for the 2019-2020 academic year, which totals 3,008 student beds. The 13 on-campus non-student units for HRL staff are not included in the table.

Table 3.9-6: Campus Student Housing (AY 2019-2020)

Housing Community	Number of Student Beds
Parkside	1,387
Hillside	1,005
Beachside Village	616
Total	3,008

3.9.3 Methodology

As discussed in Section 3.9.1, Regulatory Setting, the State of California budget is the primary factor that determines enrollment levels, and in turn, the CSU allocates enrollment growth funding for California residents according to a specific enrollment growth target for each of the 23 universities. In the past, when the state has experienced a financial crisis, the enrollment funding for the CSU was reduced, and universities had to reduce their enrollment until additional funding became available in subsequent years. During the past 30 years, enrollment reductions have occurred four times.

Master Plans are intended to identify, describe, and provide a framework to implement proposed improvements to accommodate a projected change (generally an increase) in student enrollment and corresponding campus population (which includes student, faculty, and staff) through an identified planning horizon year. The projections serve as the basis for determining a campus's long-term space and infrastructure needs. The proposed Master Plan Update makes reasonable assumptions about projected student enrollment through the 2035 horizon year and assumes annual compounded growth of one percent throughout the life of the Master Plan Update, reflecting typical annual growth per the CSU's Office of the Chancellor, which consults with the state legislature regarding the funding needed to support enrollment growth.

As discussed in Section 3.9.2, the COVID-19 pandemic has affected the number of people on campus or traveling to and from campus with increases in remote work. As such, the 2019-2020 academic year data is being used for baseline data in this EIR as it is the most recent year of pre-pandemic in-person campus operations. Therefore, 2019 and 2020 population and housing data is included throughout this section.

Potential impacts of the Master Plan Update on population and housing were evaluated by comparing the existing campus population and housing to population and housing projected under the Master Plan Update. The projected Master Plan Update population and housing was then compared to the projected population and housing in the SCAG region, as identified in the 2020-2045 RTP/SCS, through the Master Plan Update horizon year 2035 to determine whether the projected gradual increase in the on-campus population and housing was accounted for in regional plans for the area.

As previously discussed, SCAG's 2020-2045 RTP/SCS includes projections for growth in population and households in the region through 2045. This most current RTP/SCS does not break down population projections for each local jurisdiction (i.e., city) throughout the planning horizon and, instead, provides a comparison of projections from the start of the previous planning period (2016) to the current planning period horizon year 2045. As such, the City of Long Beach 2035 population projection was obtained from the previous 2016-2040 RTP/SCS.

As previously stated in Section 3.9.2 above, for the purposes of the analysis in this Draft EIR, FTES is used as the most appropriate measure of student population at the campus, as opposed to headcount, because it provides a more accurate representation of the population that will be on-campus at a given time. FTE is also used to account for employees in certain occupational groups. Auxiliary employees and faculty/staff household members are shown in terms of headcount since they are assumed to be present on the campus most of the time.

SCAG accounts for college dormitory-style residences as "group quarters" in their regional housing projections.[17] While the university displays student housing as "beds", the number of student beds does not directly correlate to number of student housing units, since a single campus student housing unit can contain multiple beds. Additionally, the number of beds per campus student housing unit may not be comparable to the household size (i.e., the number of individuals occupying a housing unit) estimated in SCAG's housing growth forecast. For a conservative analysis that overcounts student housing as a percentage of SCAG's housing allotment, it was assumed that one student bed is equal to one housing unit and one household.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to population and housing are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to population and housing if it would:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.9.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of projects developed over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below focuses on type of use, and specifically, housing.

[17] Southern California Association of Governments, Adopted September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.

POP-1 Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Program-Level Analysis for Master Plan Update

The Master Plan Update would result in direct population growth through the development of student facilities and services that allow for increased student enrollment and increased campus population. The Master Plan Update would result in indirect population growth if associated infrastructure, such as roadways and utilities, are extended into off-campus areas that do not currently support that infrastructure, or if the capacity of the associated infrastructure is exceeded and new infrastructure facilities are required.

Direct Growth

The Master Plan Update proposes new campus facilities, including student housing, to accommodate existing students and the projected gradual increase in the on-campus population through the horizon year. New housing developed under the Master Plan Update would result in net increases of approximately 1,602 new student beds and approximately 285 new faculty and staff housing units. Additionally, although the Master Plan Update aims to minimize net new square footage, development under the Master Plan Update would include both renovation and/or replacement of campus facilities to accommodate the projected 723 net new employees.

As discussed in Section 2.5, Campus Population Projections, and Appendix B, Campus Population Projections Memorandum, the Master Plan Update projects student enrollment to be approximately 36,000 FTES by 2035. Supported by historical data for the campus, enrollment projections for the Master Plan Update assume that approximately 7.44 percent of the total enrollment in 2035, or 3,000 FTES, would be accommodated by virtual learning modes or not otherwise accommodated on campus, such as through clinical nursing or student teaching supervision. Additionally, based on historical data of employee profiles from 2009 to 2019,[18] the Master Plan Update assumes that the number of FTE employees would increase proportionately with the student population at a rate of approximately 1.16 percent annually through horizon year 2035. Table 3.9-7 shows the existing and projected campus population.

Table 3.9-7: Existing and Projected Campus Population

Population Group	Academic Year 2019-2020	Master Plan Update Horizon Year 2035	Net Change in Population
Full-Time-Equivalent Students (On-Campus)	28,876	33,334	4,458
Full-Time-Equivalent Employees	3,295	3,918	623
Auxiliary Employees	528	628	100
Faculty/Staff Household Members[a]	0	285	285
Total	32,699	38,165	5,466

[a] "Faculty/Staff Household Members" accounts for persons in faculty/staff households who are not employed by CSULB (e.g., family members, domestic partners, etc.).

[18] California State University, Faculty and Staff, Employee Profile, Previous Year's Reports, Employee Profile 2009-2019, available at: https://www.calstate.edu/csu-system/faculty-staff/employee-profile/Pages/past-reports.aspx, accessed June 29, 2022.

The Master Plan Update uses the projected future student enrollment and total campus population through the 2035 horizon year to establish the development program and space planning requirements to support that projected future campus population. As shown in Table 3.9-7, the Master Plan Update is anticipated to result in a net increase in the on-campus population of 5,466 FTES, FTE employees, auxiliary employees, and faculty/staff household members[19] through the horizon year. As an urban commuter campus, it is anticipated that most of the net new on-campus student and employee population would come from within the SCAG region. Additionally, SCAG collects college enrollment estimates and accounts for university students in their population projections.[20] The net increase in the campus population resulting from the proposed Master Plan Update would represent approximately 0.03 percent of the population in the SCAG region, 0.05 percent of the population in Los Angeles County, and 0.16 percent of the population in Orange County in the horizon year 2035. As the campus population is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS, the net increase in the on-campus population resulting from the Master Plan Update would not be considered unplanned growth. Faculty and staff employment growth, which anticipates 723 additional employees by 2035, is also accounted for in the 2020-2045 RTP/SCS, which projects a net increase of 9,304,000 jobs in the SCAG region by the year 2035.[21] Therefore, the proposed Master Plan Update would not directly induce substantial unplanned population growth in the area and no impact would occur.

Indirect Growth

As discussed in Chapter 2, Project Description, the purpose of the Master Plan Update is to optimize the existing physical assets of the campus, enhance the efficiency of facilities throughout the campus, and allow the existing buildings and programs to evolve to accommodate future campus needs. Development under the Master Plan Update would consist of renovation and redevelopment of existing facilities and new, infill development within the existing campus boundaries to accommodate the projected net increase in campus population through the horizon year.

Proposed mobility and parking improvements would consist of enhancements to increase pedestrian and bicyclist safety and comfort. These mobility improvements would renovate and improve connections to existing facilities within and through the main campus to support the existing and projected campus population through the horizon year and would not extend the capacity of existing roadways.

Utilities required to operate the proposed development under the Master Plan Update would be constructed as part of the Master Plan Update and would connect to the existing utility infrastructure network serving the CSULB main campus and Beachside Village property. Proposed utility projects would be sized adequately to serve the projects under the Master Plan Update and would not result in additional infrastructure capacity that would induce unplanned growth.

Therefore, the renovation, replacement, and development of new projects under the Master Plan Update would not indirectly induce substantial unplanned population growth in the area and no

[19] Due to the provision of housing for faculty and staff as part of the Master Plan Update, it is anticipated that a small portion of faculty and staff would reside on campus with other members of their household. Based on historic data of non-student residents living on the CSULB campus, it is anticipated that an additional 285 individuals associated with faculty and staff households would also be living on-campus.

[20] Southern California Association of Governments, Adopted September 2020, *Connect SoCal 2020-2045 RTP/SCS Demographics and Growth Forecast*.

[21] Ibid.

impact would occur.

Project-Level Analysis for Near- and Mid-Term Development Projects

Direct Growth

One of the objectives of the proposed Master Plan Update is to increase the number of student beds on campus. The increase of approximately 1,602 student beds and approximately 285 faculty and staff housing units would be achieved through the proposed campus housing projects which include right-sizing existing housing units in the Hillside and Beachside housing communities to include common/shared living spaces within the buildings (Hillside College Renovations/Addition and Beachside Housing projects); increasing the number of beds available through a proposed increase in units at Parkside (New Parkside Housing Village project); and providing 285 faculty and staff housing units in a proposed new apartment housing building (Faculty and Staff Housing project). Table 3.9-8 shows the existing and proposed number of beds and units associated with the proposed campus housing projects.

Table 3.9-8: Proposed Campus Housing Improvements

Campus Housing	Existing	To Be Demolished	Net New	Proposed At Buildout
Student Beds				
Parkside	1,387 beds	1,387 beds	2,085 beds	3,472 beds
Hillside	1,005 beds	311 beds	0 beds	694 beds
Beachside	616 beds	172 beds	0 beds	444 beds
Total	3,008 beds	1,870 beds	2,085 beds	4,610 beds
			Net Change	*+1,602* beds
Non-Student Beds/Units[a]				
Housing and Residential Life	26 beds/ 13 units	0	0	26 beds/ 13 units
Faculty and Staff Housing	0	0	570 beds/ 285 Units	570 beds/ 285 Units
Total	26 beds/ 13 units	0	596 beds/ 298 Units	596 beds/ 298 Units
			Net Change	*+570 beds/ +285 Units*

a. It is assumed each unit would accommodate an average of two people; therefore, 26 beds for Housing and Residential Life and 570 beds for Faculty and Staff Housing are included for planning purposes.

b. Existing Housing and Residential Life units are dispersed throughout Parkside, Hillside, and Beachside and are not included in the student bed count.

As shown in Table 3.9-8, the proposed campus housing projects are anticipated to result in a net increase of approximately 1,602 student beds on the campus and 285 units for faculty and staff housing. These net new beds and units would accommodate the projected net increase in the campus population discussed for the Master Plan Update at the program level above.

As previously discussed, SCAG accounts for college dormitory-style residences as “group quarters” in their regional housing projections, but the number of student beds does not directly correlate to number of student housing units, and the number of beds per campus student housing unit may not be comparable to SCAG’s household size. However, if it is conservatively assumed

that each student bed equates to one housing unit and one household, the net new student beds and faculty/staff housing units proposed in the campus housing projects would represent approximately 0.03 percent of the housing in the SCAG region, 0.06 percent of the housing in Los Angeles County, and 0.19 percent of the housing in Orange County in the horizon year 2035. The projected campus housing is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS, which are also used to determine the RHNA allocation for each local jurisdiction within the SCAG region. Additionally, the net increase of approximately 1,602 new student beds proposed under the Master Plan Update would support the goal of the CSULB Housing Capacity Expansion Plan to increase the total number of student beds by 1,000 by 2035. As such, the net increase in the student beds and faculty/staff housing units provided by the proposed campus housing projects would not be considered unplanned growth. Therefore, the proposed campus housing projects under the Master Plan Update would not directly induce substantial unplanned population growth in the area. The impact would be less than significant.

Indirect Growth

Similar to the program-level analysis for the development under the Master Plan Update, neither the proposed campus housing projects nor mobility improvements would expand the capacity of existing roadways. Additionally, as discussed in Chapter 2, Project Description, utilities required to operate the proposed housing projects would be constructed as part of the Master Plan Update and would connect to the existing utility infrastructure network serving the CSULB main campus and Beachside Village property. Proposed utility projects would be sized adequately to serve the projects under the Master Plan Update and would not result in additional infrastructure capacity that would induce unplanned growth. Therefore, development of the proposed campus housing projects under the Master Plan Update would not indirectly induce substantial unplanned population growth in the area. The impact would be less than significant.

POP-2 Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Program-Level Analysis for Master Plan Update

As previously discussed, one of the objectives of the proposed Master Plan Update is to increase the number of student beds on campus by approximately 1,602. These beds would accommodate the projected gradual increase in the on-campus population through the horizon year. As discussed in more detail in the project-level analysis below, several campus housing improvements are proposed under the Master Plan Update. Although some existing student housing facilities would be demolished and replaced with new student housing facilities, these improvements would be implemented in phases such that the level of campus housing availability would not decrease year to year over the planning horizon. Additionally, the existing units at CSULB include traditional doubles with two beds per unit; semi-suites with four or five beds per unit; or full-suite-designed doubles that have been modified to remove the common living space areas to accommodate more beds per unit. The Master Plan Update would involve right-sizing units to include common space. Development under the Master Plan Update would be phased to convert common living space to accommodate additional beds, if needed, until construction of additional housing units is completed. In this way, the number of beds could be shifted between the available housing communities to ensure that an adequate number of beds is always available to accommodate the projected gradual increase in the campus's residential population. Therefore, development under the Master Plan Update would not displace substantial numbers of existing people or housing. The impact would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Four near-term campus housing projects are proposed to achieve the net increase in the number of beds on campus. These projects include establishment of a Parkside residential community that replaces the existing Parkside Residence Halls (New Parkside Housing Village project); renovations/addition to the existing Hillside College housing community (Hillside College Renovations/Addition project); renovation of the existing Beachside Village property (Beachside Housing project); and construction of a new Faculty and Staff Housing residence (Faculty and Staff Housing project). Table 3.9-8 shows the existing beds and proposed number of beds associated with the proposed campus housing projects. Together, the proposed campus housing projects would result in a net increase of approximately 1,602 student beds, for a total of 4,610 student beds, and 285 new faculty/staff units (570 beds).

Proposed redevelopment of the Parkside residential community would demolish existing residence halls at the Parkside site and construct of new buildings to accommodate approximately 2,085 student beds. Proposed redevelopment at Hillside would involve expanding six buildings within this housing community to add communal space and remove 311 student beds at Hillside. Renovation at the Beachside Village property would right-size the units in this housing community to restore common living spaces that have been converted to accommodate additional beds, resulting in a net decrease of approximately 172 student beds at Beachside. While the proposed improvements at Hillside and Beachside would reduce the number of beds at these housing communities (a decrease of 483 beds), the new Parkside residential community would provide a net increase in beds (increase of 1,602 beds). As discussed under the program-level analysis for the Master Plan Update, the proposed housing projects would be implemented in phases to ensure that adequate number of beds are available to accommodate the projected campus population. Additionally, as discussed under the program-level analysis for the Master Plan Update, development of the proposed near-term housing projects would be phased to convert common living space to accommodate additional beds, if needed, until construction of the additional housing units at Parkside is completed. The number of beds would be shifted between the available housing communities to ensure that an adequate number of beds would be available to accommodate the projected gradual increase in the campus population. Therefore, implementation of the proposed improvements at the Parkside, Hillside, and Beachside housing communities would not displace substantial numbers of existing people or housing.

The proposed Faculty and Staff Housing building would involve demolition of the existing Design Building and construction of a new building at the site to accommodate faculty and staff housing, which would result in a net increase of approximately 285 faculty and staff units (570 beds). This project would develop new housing accommodations at a site that does not currently contain housing units or beds. As such, the proposed Faculty and Staff Housing project would not displace existing housing or people, and no impact would occur. No changes would occur to the 13 existing on-campus non-student units for HRL staff. Therefore, implementation of the housing projects under the Master Plan Update would not displace substantial numbers of existing people or housing. The impact would be less than significant.

3.9.5 Mitigation Measures

No mitigation measures are required.

3.9.6 Level of Significance After Mitigation

Development under the Master Plan Update would result in less than significant impacts to population and housing.

3.9.7 Cumulative Impacts

As discussed in Section 3.9.2, annual population growth in the SCAG region is projected to be approximately 0.61 percent through 2045. The population and housing in the Master Plan Update horizon year of 2035 is projected to be 21,443,000 residents and 7,170,000 households in the SCAG region, respectively. The net increase in the campus population resulting from the proposed Master Plan Update would represent approximately 0.03 percent of the population in the SCAG region. The net new student beds and faculty and staff housing units proposed in the housing projects under the Master Plan Update would represent approximately 0.03 percent of the housing in the SCAG region. Both the projected campus population and housing are accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS, which are also used in the determination of the RHNA allocation for the region, and thus, would not be considered unplanned growth. Similarly, other anticipated growth in the SCAG region from existing approved general plans and housing elements is also accounted for the 2020-2045 RTP/SCS and the RHNA allocation. As such, implementation of the Master Plan Update would help offset the housing need identified in the RHNA and contribute to a cumulatively beneficial impact to housing in the SCAG region.

It is possible that updates to general plans or projects requiring general plan and/or zoning changes could result in unplanned population growth. Nonetheless, because the projected campus population and housing is included in the regional population and housing projections, the proposed Master Plan Update would not contribute to a cumulatively considerable impact. Additionally, all development under the Master Plan Update would occur within the boundaries of the existing CSULB main campus and the Beachside Village property. As such, development under the Master Plan Update, considered together with other related projects, would not contribute to the displacement of substantial numbers of existing people or housing in the area, necessitating the construction of replacement housing elsewhere. Therefore, implementation of the Master Plan Update would result in less than significant cumulative impacts related to population and housing.

3.10 PUBLIC SERVICES AND RECREATION

This section evaluates the potential for implementation of the Master Plan Update to impact the provision of public services, including fire protection and emergency services, police protection, schools, libraries, and recreational facilities and parks. Public utilities, including water, wastewater, solid waste, and energy, are addressed in Section 3.13, Utilities and Energy. This section presents the applicable regulatory setting, environmental setting, methodology for determining potential impacts, analysis of the potential impacts to public services and recreation resulting from the Master Plan Update, and an analysis of potential cumulative impacts.

One public comment related to public services and recreation was received during the public scoping period in response to the NOP. This comment addresses the project's potential impacts on the provision of adequate recreational facilities, particularly playgrounds for children, in proportion to the community's needs. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.10.1 Regulatory Setting

State

California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR), known as the California Building Standards Code, outlines building standards and requirements throughout the state. All occupancies in California are subject to national model codes adopted into Title 24, and occupancies are further subject to amendments adopted by state agencies and ordinances implemented by local jurisdictions' governing bodies. Chapter 9 of Title 24 is known as the California Fire Code, which establishes minimum requirements for fire protection and prevention, public health and safety, and provides safety and assistance to fire fighters and emergency responders during emergency operations. The California Fire Code provides building standards to increase fire resistance and regulates minimum fire safety requirements for new and existing buildings, facilities, storage, and processes, including the storage and handling of hazardous materials.

California Health and Safety Code

Sections 13000 et seq. of the California Health and Safety Code set the state regulations for fires and fire protection, which includes building standards, use of fire equipment such as fire extinguishers, fire protection and notification systems, smoke alarms, high-rise building and childcare facility standards, and fire-suppression training.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) sets and enforces standards for the protection of worker health and safety. Cal/OSHA has established minimum standards for fire suppression and emergency medical services in accordance with CCR, Title 8, Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment".

California State University

California State University Office of Fire Safety

Within the CSU Office of the Chancellor, the Office of Fire Safety is authorized to enforce all fire and panic safety provisions in the CCR as adopted by the Office of the State Fire Marshal

(OSFM).[1,2] CCR Health and Safety Code Sections 13108 and 13146 authorize the OSFM to enforce fire and life safety provisions in the following areas:

- Plan review and approval, permitting and subsequent construction inspections of all new construction, remodel, renovation, and tenant improvement projects on/in state-owned, -leased, or -operated properties (CCR Title 24)
- Inspection of existing state-owned, -leased or -operated properties for compliance with all applicable fire and panic safety regulations (CCR Title 19)
- Investigation of origin and cause of fires/explosions in state-owned, -leased, or -operated facilities (CCR Title 19)

A Memorandum of Understanding between the CSU and the OSFM will incrementally grant the Office of Fire Safety personnel responsibility to exercise enforcement for plan review and approval and subsequent construction inspections on behalf of the OSFM and in accordance with the CSU policies.[3]

California State University Emergency Management Policy

The CSU Emergency Management Policy requires CSU universities to develop and maintain an emergency management program that can be utilized when hazardous conditions and natural or man-made disasters may occur beyond the capacity of routine university operations. The policy designates the President of each CSU university responsible for the emergency management program, which includes additional persons as emergency coordinators, as well as extensive training for faculty, staff, and students for the emergency operations center.[4]

CSULB has an Emergency Operations Plan that details how the university will manage and coordinate resources and personnel responding to emergency situations in response to large scale, multi-jurisdictional, and multi-agency emergencies or disasters.

California State University Campus Law Enforcement Policies

The CSU Campus Law Enforcement Policies govern law enforcement activities at each CSU university. The CSU system has an agreement with the State University Police Association and has implemented systemwide and university policies that act as a public safety policy manual. Systemwide policies are law enforcement policies that must be adopted at all 23 universities, while university policies are law enforcement policies that may be adopted by the President of each university to meet specific university needs. The public safety policy manual covers the topics of law enforcement role and authority, organization and administration, general operations, patrol operations, investigation operations, equipment, support services, and personnel.[5]

1 The California State University, Doing Business with the CSU: Capital Planning, Design, and Construction: Permitting and Review, available at : https://www.calstate.edu/csu-system/doing-business-with-the-csu/capital-planning-design-construction/operations-center/Pages/permitting-and-review.aspx, accessed March 15, 2023.

2 CAL FIRE, June 2022, *Memorandum of Understanding Between CAL FIRE - Office of the State Fire Marshal and The Board of Trustees of the California State University Designated Campus Fire Marshal Program*.

3 The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9232, Building Code Enforcement, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-x65bw, accessed July 15, 2022.

4 The California State University, PolicyStat, Executive Order 1056: California State University Emergency Management, available at: https://calstate.policystat.com/policy/10865012/latest/, accessed July 15, 2022.

5 The California State University, PolicyStat, Section 4000: Campus Law Enforcement Policies, available at: https://calstate.policystat.com/policy/12062316/latest/, accessed July 15, 2022.

CSULB has a dedicated University Police Department (UPD) which implements its own policies. The CSULB UPD has total authority as law enforcement officers under California Penal Code Section 830.2 and has a written agreement and mutual aid agreement with the Long Beach Police Department (LBPD) which governs operational authority.[6]

California State University, Long Beach, Campus Safety Plan 2022

The Campus Safety Plan provides a general overview of UPD availability, location, and methods to summon UPD assistance; special safeguards for facilities or activities such as special event safety planning and access to campus facilities; and recent actions and future proposed changes to improve safety on-campus. Recent actions to improve safety include but are not limited to providing safety drills, workshops, and trainings to students and faculty and staff; fire alarm upgrades to housing facilities; and hardware upgrades for locks.[7]

Local

CSULB is an entity of the CSU system, a state agency, and the campus is state-owned property; therefore, development on the campus is not subject to local policies, regulations, or ordinances governing public services or recreational facilities. Nonetheless, City regulations related to off-campus public services and recreational facilities are described below for informational purposes, and not as the basis for the determination of significant impact for purposes of CEQA.

City of Long Beach General Plan Public Safety Element

The Public Safety Element of the City of Long Beach General Plan identifies public safety considerations, including fire protection (e.g., organizations, types of fires, fire stations) and crime prevention (e.g., crime and the police department), and incorporates these into the planning process. The Public Safety Element evaluates plans to meet fire protection needs resulting from changing conditions within the community. A major factor in evaluating the need for new stations or the relocation of existing stations is based on travel distance from the station to the focal points of fire demand zones (also measured as response times). Fire demand zones are identified by areas of large concentrations of people or major industrial or commercial establishments and evaluated by efficient travel times. The desired response time is then compared to current travel times from the existing fire stations and evaluated for additional stations or relocations.

City of Long Beach General Plan Open Space and Recreation Element

The Open Space and Recreation Element of the City of Long Beach General Plan includes the requirements of open space planning with a focus on planning for public recreation. The City has a goal of achieving a ratio of 8.0 acres of publicly owned recreation open space per 1,000 residents (Goal 4.2).

3.10.2 Environmental Setting

This section describes the public services that serve the CSULB main campus and Beachside Village property within the City of Long Beach. UPD and the University Library primarily serve the campus population while the Long Beach Fire Department (LBFD), LBPD, Long Beach Unified School District (LBUSD), and Long Beach Public Library (LBPL) serve the campus population in addition to all residents of the City of Long Beach. In addition, the study area for the evaluation of impacts on recreation includes the CSULB main campus, Beachside Village property, and the

[6] California State University, Long Beach, 2022, Enforcement Authority, available at: https://www.csulb.edu/university-police/enforcement-authority, accessed July 15, 2022.

[7] City of Long Beach, 2022, *Fiscal Year 2022 Adopted Budget*.

parks and recreational facilities managed by the Long Beach Parks, Recreation and Marine Department (LBPRM).

Fire Protection

Long Beach Fire Department

The LBFD is the primary provider of fire emergency services for CSULB. The department responds to fire, medical, beach, and waterway emergencies and provides fire prevention, education, and preparedness services for the City of Long Beach. The LBFD also handles hazardous materials and non-emergency response services. The LBFD comprises four bureaus that report to the Fire Chief, including the Operations Bureau, Fire Prevention Bureau, Support Services Bureau, and Administration Bureau.[8] Within the City, the Bureau of Fire Prevention is responsible for fire code enforcement and plan checks (although as noted in Section 3.10.1, Regulatory Setting, the State Fire Marshal and the CSU Office of Fire Safety, not local fire departments, are responsible for these functions within the CSU), fire investigation, arson prosecution, environmental investigations, and records management.

The LBFD is staffed with over 500 employees, including 209 firefighters, amongst other fire personnel.[9] The LBFD operates 24 fire stations throughout the City, as well as one Fire Headquarters location and one Beach Operations location.[10] Fire Station 22, located at 6340 Atherton Street on the northeast corner of the CSULB main campus, services the CSULB main campus. Fire Station 17 services the Beachside Village property and is located approximately 0.8 miles north of the property, at 2241 Argonne Avenue.[11]

The LBFD has several ways to measure department performance. A critical measure of performance and a direct measure of the response capability of first responders is response time. Response time is impacted by several factors, including increasing call volume and station location. The LBFD's performance measures for Fiscal Year (FY) 2021 included:

- Percent of on-scene arrival of first appropriate unit for structure fire calls within 6 minutes, 20 seconds or less, estimated at 83 percent;
- Percent of structure fires confined to room of origin, estimated at 75 percent; and
- Number of emergency medical responses, estimated at 51,155.[12]

The LBFD responded to over 76,000 fire, marine safety, and other emergency incidents equating to over 157,000 unit responses in FY 2021.[13]

Law Enforcement

University Police Department

CSULB is under the primary jurisdiction of the CSU-operated UPD, which provides police protection services to the entire campus and the surrounding area within one mile.[14] As discussed,

8 Long Beach Fire Department, Organization Chart, available at: https://www.longbeach.gov/fire/about-us/organization-chart/, accessed July 15, 2022.
9 Ibid.
10 Long Beach Fire Department, Station Locations, available at: https://www.longbeach.gov/fire/about-us/station-locations/, accessed July 15, 2022.
11 City of Long Beach, May 2021, *Fire Response Zones*.
12 City of Long Beach, 2022, *Police*.
13 City of Long Beach, 2022, *Fire*.
14 California State University, Long Beach, Police Department, *Authority and Purpose*.

CSULB's UPD has total authority as law enforcement officers, meaning officers have the authority to apprehend and arrest those involved in illegal acts on campus and areas adjacent to the campus. The CSU officers undergo special training designed to meet the needs of a contemporary university community.

UPD has a written agreement with LBPD which defines and details operational authority between the two departments and has a mutual aid agreement with LBPD that enables each department to supplement the other during mutual investigations, arrests, and prosecutions.[15] The UPD also provides programs for community service officers and safety escorts, as well as services such as LiveScan fingerprinting and safety trainings. The CSULB's Annual Security Report includes statistics for Clery crimes[16] and hate crimes, with a total of over 120 on-campus Clery crimes and zero hate crimes reported for the years 2018-2020.[17]

The UPD main station is located at 1250 Bellflower Boulevard, within the CSULB main campus's East District near the intersection of Palo Verde Avenue and E Deleon Street, and operates with officers patrolling the campus 24 hours a day, 7 days a week. The UPD has 26 police officers and serves both the main campus and Beachside Village property. The UPD is currently meeting its response time goals of 2 minutes or less for priority calls.

Long Beach Police Department

The LBPD serves the City of Long Beach and supports the UPD in serving CSULB. The LBPD provides law enforcement services, including response to 911 emergencies and general service calls, criminal investigations, victim support, police contract services, and work related to federal and state legislative mandates. In addition, the LBPD provides programs for public safety, such as the Neighborhood Walks and Community Liaison Officer programs. The LBPD provides services to CSULB and the City of Long Beach, as well as contracted law enforcement services to the Port of Long Beach, Long Beach Airport, Long Beach Transit, and Long Beach City College.

The LBPD operates with 800 sworn officers and a total staffing of over 1,200 personnel, working across seven Bureaus, comprised of the Chief of Police, Internal Affairs, Administration, Financial Bureau, Investigations Bureau, Patrol Bureau, and Support Bureau.[18] The Patrol Bureau is the department's largest bureau, requiring more than 50 percent of its personnel, divided into four geographical divisions: north, east, south, west, as well as a special Field Support Division. The CSULB main campus and the Beachside Village property are located geographically within the East Division, which is overseen by the East Patrol Division and Juvenile Investigations station, located at 3800 E. Willow Street, approximately 1.8 miles northwest of the CSULB main campus and 1.3 miles northwest of the Beachside Village property.[19] The East Division also provides law enforcement services to approximately 170,000 residents within the City of Long Beach.[20]

15 California State University, Long Beach, 2022, Enforcement Authority, available at: https://www.csulb.edu/university-police/enforcement-authority, accessed July 15, 2022.
16 Clery crimes include homicide, manslaughter, robbery, aggravated assault, sex offense, sexual battery, burglary, motor vehicle theft, arson, domestic violence, dating violence, and stalking.
17 California State University, Long Beach, 2021, *2021 Annual Security Report*.
18 Long Beach Police Department, 2022, About the LBPD, available at: https://www.longbeach.gov/police/about-the-lbpd/, accessed July 15, 2022.
19 City of Long Beach, 2017, *Police Reporting Districts*.
20 Long Beach Police Department, 2022, East Patrol Division, available at: https://www.longbeach.gov/police/about-the-lbpd/bureaus/patrol-bureau/east-patrol-division/, accessed July 15, 2022.

The LBPD's performance measures for FY 2021 included:

- Response times, estimated at an average of 5 minutes or less;
- Violent crime rate, estimated at 5.8 violent crimes per 1,000 residents; and
- Officer response to calls for service, estimated at 590,013 calls.[21]

Schools

Long Beach Unified School District

The LBUSD provides educational services to the cities of Long Beach, Lakewood, Signal Hill, and Avalon on Catalina Island. CSULB staff, faculty, and/or students with children may enroll their children in the LBUSD to receive educational services. The LBUSD has an enrollment of 8,000 students in 85 public schools spanning from the preschool to high school level. The staff for the school district totals more than 12,000 full-time and part-time employees.[22] Since 2004, the LBUSD has experienced steady enrollment decline for nearly 20 years, with less than 70,000 students currently attending LBUSD's schools. Demographic studies indicate that this 1.6 percent annual decline will continue, with total district enrollment dipping below 60,000 students within the next 10 years. This decline has and will continue to be experienced at most LBUSD schools. By the 2026-27 school year, it is projected that LBUSD's schools will operate at 75 percent of permanent capacity, with over 23,000 total surplus capacity in permanent buildings and an additional 26,000 surplus capacity in portables.[23]

The LBUSD schools that serve the CSULB main campus are listed in Table 3.10-1.[24] Additionally, a summary of the existing enrollment for 2019 to 2020 for the LBUSD schools that serve the CSULB main campus is provided in Table 3.10-1.

21 City of Long Beach, 2022, *Police*.
22 Long Beach Unified School District, 2022, About, available at: https://www.lbschools.net/District/, accessed July 15, 2022.
23 Long Beach Unified School District, July 2022, *Long Beach Unified School District 2022 Facility Master Plan*.
24 Long Beach Unified School District, 2022, School Finder, available at: https://www.lbschools.net/Schools/finder.cfm, accessed July 15, 2022.

Table 3.10-1: Long Beach Unified School District Schools Serving the CSULB Campus

School	Location	Approximate Distance from the CSULB Main Campus	Enrollment[a]	Capacity[b]	Remaining Capacity (Capacity minus Enrollment)
Gant Elementary School	1854 Britton Drive	Adjacent to the northwest border	576	941	365
Rogers Middle School	365 Monrovia Avenue	1.4 miles southwest	869	903	34
Wilson High School	4400 East 10th Street	1.5 miles southwest	3,704	3,781	77

a. Enrollment numbers are based on LBUSD 2019-2020 data.
b. Capacity numbers are based on LBUSD 2021-2022 data from the LBUSD 2022 Facility Master Plan. The factored capacity includes both permanent and temporary capacity.
Source: California Department of Education, DataQuest, available at: https://data1.cde.ca.gov/dataquest/, accessed August 15, 2022; Long Beach Unified School District, July 2022, *LBUSD 2022 Facility Master Plan*.

Libraries

University Library

The University Library is CSULB's main library and is located in the campus's South District. The University Library was established to provide direct support for the educational mission of the university through selecting, organizing, preserving, and disseminating recorded knowledge in all its formats and manifestations. The library opened in 1972 and experienced a major remodel completed in 2008. With six stories and nearly 150,000 square feet of space, the University Library is the largest library facility in the CSU system and has a seating capacity of approximately 4,000. The University Library provides the following services: online and physical access to library collections, access to magazine and journal articles through a research database, and the Spidell Technology Center, a 200-seat computer lab that offers software applications.[25]

Long Beach Public Library

The LBPL system includes 12 libraries throughout the City of Long Beach, which provide library services such as physical and digital collections of resources and materials, family learning centers, and technological resources including computers and internet. The closest library to the CSULB main campus is the Los Altos Neighborhood Library, located at 5614 Britton Drive and approximately 0.73 miles northwest of the campus. The Los Altos Neighborhood Library includes the following amenities: public computers, free Wi-Fi, wireless printing, a copier, community meeting room, and a family learning center. The Los Altos Neighborhood Library opened in January 1957 and occupies a total space of 6,750 square feet.[26] The closest library to the Beachside Village property is the Brewitt Neighborhood Library, located at 4036 E. Anaheim Street, approximately 0.6 miles to the southwest. The Brewitt Neighborhood Library includes the following amenities: public computers, free Wi-Fi, wireless printing, a copier, and community meeting room. The Brewitt Neighborhood Library opened in 1948 and occupies a total space of

25 California State University, Long Beach, Library Profile and History, available at: https://www.csulb.edu/university-library/profile-and-history, accessed July 15, 2022.
26 Long Beach Public Library, Los Altos Neighborhood Library, available at: https://www.longbeach.gov/library/locations/losaltos/, accessed July 15, 2022.

5,225 square feet.[27]

Parks and Recreational Facilities

On-Campus

The CSULB main campus includes open space and numerous recreational facilities, providing both active and passive recreation to support students, faculty, and staff. The existing landscape and open spaces throughout the campus create a park-like setting. The proposed Open Space Framework for the Master Plan Update aims to build upon the existing structure of open space within the campus. The Open Space Framework is centered around three key themes: providing a sense of place within each district to create a connected network of activity across the campus; increasing programmable space to provide flexibility to adapt to the evolving needs of the university and the community; and enhancing the campus's urban forest, which is tied to CSULB's resiliency goals.

The types of open space offered on campus include the quads, courtyards, plazas, open lawns, the Earl Burns Miller Japanese Garden, and athletic fields. The campus contains a total of over 6,800 trees, providing an urban forest throughout CSULB. Athletic and recreational facilities are concentrated in the North District of the main campus, including the George H. Allen Field, Aquatics Center, Jack Rose Track, Walter Pyramid, baseball and softball fields, rugby field, tennis courts, and beach volleyball court. The East district of the main campus includes the Student Recreation and Wellness Center, while the West District features the Earl Burns Miller Japanese Garden. The Bouton Creek Channel runs diagonally in a northwest/southeast orientation across the main campus.

Off-Campus

The LBPRM provides the City of Long Beach with recreation programs and services that are offered at 169 parks with 26 community centers, two historic sites, and two major tennis centers. Additionally, LBPRM manages a municipal golf system with five courses, the Long Beach Animal Care Services Bureau, the largest municipally operated marina system in the nation, and six miles of beaches. The programs and services provided throughout these facilities include but are not limited to sports leagues, fitness zones, skate parks, youth and teen programs, and senior citizen programs.

More than 3,100 acres within the City's 50 square miles are developed for recreation. LBPRM manages over 172 acres of estuaries, featured at the El Dorado Nature Center, Golden Shores Marine Biological Preserve, Jack Dunster Marine Biological Preserve, Colorado Lagoon, and the DeForest Park Nature Trail.[28] Table 3.10-2 lists fives parks and recreational facilities, location, size, and amenities within half-mile of the CSULB main campus. Half a mile is generally the distance that people are willing to walk to a destination, including parks and recreational facilities.[29] Additionally, the 322-acre El Dorado Regional Park is within 0.8 miles of the CSULB main campus.

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27 Long Beach Public Library, Brewitt Neighborhood Library, available at: https://www.longbeach.gov/library/locations/brewitt/, accessed July 15, 2022.

28 Long Beach Parks, Recreation and Marine, About the Department, available at: https://www.longbeach.gov/park/business-operations/about/, accessed July 15, 2022.

29 Los Angeles County Department of Parks and Recreation, May 9, 2016, *Los Angeles Countywide Comprehensive Parks and Recreation Needs Assessment*.

Table 3.10-2: Parks and Recreational Facilities within One Mile of the CSULB Main Campus

Facility Name	Address	Amenities	Size (acres)	Distance from CSULB Main Campus (miles)
Whaley Park	5620 Atherton Street	Sports field, playground equipment, basketball courts, roller hockey practice court, picnic tables and athletic fields	13.5	<0.1 northwest
Rancho Los Alamitos	5400 Bixby Hill Road	Historic gardens, ranch house, and barnyard	7.5	0.2 southeast
Channel View Park	7th Street to Loynes Drive at Los Cerritos Channel	Open space, playground, walking path	5.28	0.4 southeast
Recreation Park	4900 East 7th Street	Baseball field, casting pond, community center, dog park, golf course, lawn bowling green, picnic area, playground, tennis center, restrooms, youth recreation, teen center, adult classes.	210.9	0.4 west
Los Altos Plaza Park	Los Altos Plaza and Anaheim Road	Play equipment, benches, open space	0.71	0.5 west

Source: Long Beach Parks, Recreation and Marine, Park and Facilities Directory, available at: https://www.longbeach.gov/park/park-and-facilities/directory/, accessed July 15, 2023.

3.10.3 Methodology

Evaluation of potential impacts to public services and recreation was based on a review of planning documents identifying current level of service standards for the City of Long Beach, publicly available documents from public service providers, and consultation with UPD. Population data utilized for the analysis of service capacity was from the latest data available. Although the baseline year used for enrollment data for the Master Plan Update is 2019-2020, the latest service provider data is appropriate to use and provides a more accurate projection for this analysis for the Master Plan Update horizon year of 2035. Impacts on public services and recreation that would result from the project were identified by evaluating existing service capacity performance objectives and adequacy of facilities in light of future demand associated with Master Plan Update implementation, considering both the program-level and project-level developments.

The analysis evaluates campus population, new square footage, and new projects for the discussion of fire protection, police protection, and schools; and athletic facilities and mobility, circulation, and open space for the discussion of parks and recreational facilities.

Project Design Features

The following Project Design Feature (PDF) is currently implemented for projects on campus, and would apply to all projects associated with development of the Master Plan Update to minimize impacts to emergency service providers. The PDF will be incorporated into the Mitigation Monitoring and Reporting Program prepared for the Master Plan Update that will be adopted by the CSU Board of Trustees when they consider approval of the Master Plan Update to ensure their implementation.

- PDF-PSR-1: Notify UPD of construction activities that would require any temporary lane closures and alternate routes/detours.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to public services and recreation are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to public services and recreation if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    - Fire protection,
    - Police protection,
    - Schools,
    - Parks, and
    - Other public facilities;
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.10.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed. The analysis of near- and mid-term projects below is organized to separately address renovation projects, which involve renovation of existing facilities and additions to existing facilities; replacement projects, which involve demolition and replacement of existing facilities in the same physical location; and new projects, which involve construction of new facilities with new uses.

PSR-1 Fire Protection. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

Program-Level Analysis for Master Plan Update

As discussed in Section 3.10.1, a major factor in evaluating the need for new fire stations or the relocation of existing stations for the City is based on travel distance from the station to a focal point of fire demand zone, defined as an area with large concentrations of people or major industrial or commercial establishments. The desired response time is then compared to current travel times from the existing fire stations and evaluated for additional stations or relocations. Fire Station 22 and Fire Station 17 currently provide existing fire protection services to the CSULB main campus and Beachside Village property, respectively. Fire Station 22 is located on the northeast corner of the main campus and Fire Station 17 is located less than one mile from the Beachside Village property. The travel distance from the existing fire stations to the CSULB main campus and Beachside Village property would not change with implementation of the Master Plan Update, as the Master Plan Update is considered infill development and would occur within the existing campus boundaries, and would not result in an expansion of the campus beyond its existing boundaries. While many of the projects that would be developed under the Master Plan Update would be renovated or demolished and replaced with higher-density mixed-use buildings, implementation of the Master Plan Update would result in the continuation of existing academic programs, extra-curricular activities, and similar housing and instructional facilities, and thus, would not fundamentally change the nature of campus operations that would result in a substantial increase in the demand for fire protection.

The provision of new or physically altered government facilities for fire protection is typically associated with unplanned population growth or new residential development. As discussed in Section 3.9, Population and Housing, the campus population is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS; therefore, the net increase in the on-campus population resulting from the Master Plan Update would not be considered unplanned growth. Campus growth accommodated by the Master Plan Update would result in an increase in total campus population of approximately 5,466 persons, including FTES, FTE employees, auxiliary employees, and faculty/staff household members, through the Master Plan Update 2035 horizon year. On-campus housing is projected to increase by 2,172 student and faculty and staff beds. The increased campus population could result in an incremental increase in demand for fire protection services. However, an increase in campus population by itself does not determine whether a new or expanded fire facility is needed; rather, additional services and facilities are considered when an expansion of geographic distribution that may impair emergency response times, or new concentrations of people, occurs. The Master Plan Update would not expand the service area of the LBFD and the distance from existing fire stations to fire demand zones would not change, as the Master Plan Update is considered infill development and would occur within the existing campus boundaries. Nor would the Master Plan Update create a new population center where previously none exists. Thus, implementation of the Master Plan Update is not anticipated to result in a substantial increase in on-campus service calls or response times. Furthermore, operational procedures and policies for development included in the Master Plan Update would be addressed through the CSULB Emergency Operations Plan, which outlines the coordination between CSULB and LBFD in the event of an emergency.

Projects implemented under the Master Plan Update include renovation of existing facilities and additions to existing facilities; demolition and replacement of facilities, and construction of new facilities within the existing campus boundaries, in an area currently served by the LBFD and existing fire and emergency infrastructure such as fire hydrants, water lines, and sprinklers. While implementation of the Master Plan Update would increase the net new square footage on campus, and thus, could increase the demand for fire protection, the net new square footage on campus would be minimized as the majority of the projects include renovation or replacement. Additionally, the OSFM enforces fire and life safety provisions for all new construction, remodel, renovation, and tenant improvement projects, including plan review and inspection of facilities for compliance with all applicable fire and panic safety regulations. The California State Fire Marshal reviews development to ensure that necessary fire prevention and emergency response features are incorporated into new facilities and new construction (i.e., additions). All campus and building improvements carried out under the Master Plan Update would be required to comply with the California Building, Fire, and Health and Safety Codes. Specifically, adherence to the California Fire Code would establish minimum requirements for fire protection and prevention, building standards to increase fire resistance, and minimum fire safety requirements for new developments. All developments proposed under the Master Plan Update would be subject to review and approval by the California State Fire Marshal or the CSU Office of Fire Safety prior to building permit and certificate of occupancy issuance. Thus, the demand for fire protection from any net new square footage on campus would be minimized, and would not result in a substantial increase in demand for fire protection. Therefore, implementation of the Master Plan Update would not result in the need for new or physically altered fire protection facilities and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities for the near- and mid-term projects may require asphalt demolition, grading, paving, compaction, restriping of roads, and/or utilities work. As such, temporary lane closures within the boundaries of the CSULB main campus or Beachside Village property may occur during construction of these projects. However, emergency access for LBFD to the CSULB main campus and Beachside Village property would be maintained at all times and construction would not impede the LBFD from maintaining their response times to the campus. No impact related to maintaining acceptable service ratios would occur. Furthermore, construction activities are temporary in nature and full access to all roadways within the CSULB main campus and Beachside Village property would be restored upon completion of the proposed near- and mid-term development projects. As such, construction of the Master Plan Update's near- and mid-term development projects would not require new or physically altered fire protection facilities, and impacts would be less than significant.

Operation

The Master Plan Update's proposed near- and mid-term development projects would include the renovation, replacement, and construction of new buildings. For renovation projects that include interior and exterior renovations (Beachside Housing, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Lecture Hall 150-151 Renovation, Fine Arts 1 / 2 Renovation, Fine Arts 4 Renovation, Liberal Arts 5 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, Central Plant Decarbonization, Nursing Building Renovation, Engineering Tech Renovation, and Redefining the Campus Quad), no substantial changes would occur to those facilities such that

they would result in the need for new or expanded fire protection facilities. For renovation projects that involve additions (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Student Health Services Addition, Corporation Yard Renovations, and University Music Center Renovation/Addition), the additions would be constructed within the existing campus boundaries and would be served by existing fire and emergency infrastructure, including fire hydrants and water lines. The additions would result in net new square footage, which could increase the demand for fire protection. However, the net new square footage would not result in a substantial increase in demand for fire protection as the OSFM enforces fire and life safety provisions for all new construction, remodel, renovation, and tenant improvement projects. Compliance with the fire and life safety provisions, which include plan review and inspection of facilities for compliance with all applicable fire and panic safety regulations, would minimize the demand for fire protection. Moreover, the additions would be constructed to comply with the California Building, Fire, and Health and Safety Codes, and would be subject to review and approval by the California State Fire Marshal or the CSU Office of Fire Safety prior to building permit and certificate of occupancy issuance. Thus, renovation projects would not result in the need for new or expanded fire protection facilities.

Replacement projects involve the demolition and replacement of an existing facility in the same physical location. Replacement projects would include the Engineering Replacement Building, New Parkside Housing Village, Aquatics Center and Pool Renovation, and College of the Arts Replacement Building. The newly constructed facilities would be required to comply with the California Building, Fire, and Health and Safety Codes, with minimum requirements for fire protection and prevention, building standards to increase fire resistance, and minimum fire safety requirements for new developments as well as the OSFM requirements. Replacement projects may also result in increased building occupancy; however, the projects would require review and approval by the California State Fire Marshal prior to building permit and certificate of occupancy issuance. The nature of operations for replacement projects would be similar to existing operations and thus, would have a similar demand for fire protection. Therefore, replacement projects would not result in the need for new or expanded fire protection facilities.

New projects involve construction of a new facility with a new use. New projects would include the Faculty and Staff Housing and New 7th St. Community Outreach Facility. Operation of the New 7th St. Community Outreach Facility would incrementally increase demand for fire protection services but would be considered infill development and would not expand the LBFD's service area. The New 7th St. Community Outreach Facility would also adhere to all applicable building and fire codes and require review and approval for a building permit and certificate of occupancy.

Projects with a new residential component typically increase the demand for fire protection services. The near- and mid-term Housing projects proposed under the Master Plan Update include the New Parkside Housing Village, Faculty and Staff Housing, Hillside College Renovations/Addition, and Beachside Housing. The New Parkside Housing Village and Faculty and Staff Housing projects would result in additional beds on campus while the Hillside College Renovations/Addition and Beachside Housing would right-size units and have fewer beds upon implementation of the Master Plan Update. Overall, the Master Plan Update would increase the number of beds on campus by approximately 2,172 beds, which may incrementally increase the demand on fire protection services. However, similar to the program-level analysis, an increase in beds on campus by itself does not determine whether a new or expanded fire facility is needed; rather, additional services and facilities are considered when an expansion of geographic distribution that may impair emergency response times, or new concentrations of people, occurs. The New Parkside Housing Village and Faculty and Staff Housing projects are considered infill projects and would not expand the service area of the LBFD, and the distance from existing fire

stations to fire demand zones would not change. Nor would the Master Plan Update create a new population center where there previously none exists. Additionally, the New Parkside Housing Village and Faculty and Staff Housing projects would be required to comply with the California Building, Fire, and Health and Safety Codes, which would establish minimum requirements for fire protection and prevention, building standards to increase fire resistance, and minimum fire safety requirements for new developments. The projects would be subject to review and approval by the California State Fire Marshal or the CSU Office of Fire Safety prior to building permit and certificate of occupancy issuance.

Thus, the near- and mid-term development projects are not anticipated to result in a substantial increase in LBFD service calls. Accordingly, operation of the near- and mid-term development projects would not result in the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts. Therefore, impacts on fire protection services would be less than significant.

PSR-2 Police Protection. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

Program-Level Analysis for Master Plan Update

The UPD has jurisdiction over the CSULB main campus and Beachside Village property. Under the Master Plan Update, the UPD would continue to be responsible for responding to and handling calls for service, as well as processing and investigating crimes within the campus. The UPD would also continue to uphold its mutual agreement with LBPD, which enables each department to supplement the other for law enforcement resources.

With the anticipated campus population growth, it is anticipated that the demand for on-campus police services would increase. However, the UPD already has plans to increase the existing police department building by approximately 5,000 square feet in the next five years as part of the Corporation Yard Renovation Project. Additionally, based on the anticipated population growth and increased student beds, UPD is planning to expand its existing facility and increase its workforce by 4 police officers and 1 police dispatcher to maintain response times and service capacity. However, it is not anticipated that any new UPD facilities would be necessary offsite.

With the anticipated campus population growth, it is anticipated that the demand for off-campus police services provided by LBPD could increase incrementally since the additional CSULB population would visit areas of the City outside of the campus. However, the provision of new or physically altered government facilities for police protection is typically associated with unplanned population growth or new residential development. As discussed in Section 3.9, Population and Housing, the campus population is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS; therefore, the net increase in the on-campus population resulting from the Master Plan Update would not be considered unplanned growth. Implementation of the Master Plan Update itself would not result in the need for new or expanded police facilities for LBPD. In addition, because the majority of policing on-campus would continue to be conducted by the UPD, the additional demand on LBPD for response on- and off-campus would be limited. Police and emergency response services for any incidents within the LBPD service areas would continue to be provided by the responsible agency and response services would continue in accordance with the Mutual Aid Agreement.

Implementation of the Master Plan Update would result in an incremental increase in demand for on-campus police protection services from enrollment growth, which would be accommodated by the UPD, and would not require new or expanded police facilities for LBPD. Implementation of the Master Plan Update would also result in the continuation of existing academic programs, extra-curricular activities, and similar housing and instructional facilities and would not fundamentally change the nature of campus operations. In addition, although the Master Plan Update would result in new campus buildings and facilities, development activities would occur within the boundaries of the CSULB main campus and Beachside Village property and would not result in an expansion of the campus beyond its existing boundaries. Thus, the Master Plan Update would not modify or increase the UPD or LBPD's existing service areas and would not result in the need for new or physically altered police protection facilities. Impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

As discussed, construction activities for near- and mid-term projects may require temporary lane closures within the boundaries of the CSULB main campus or Beachside Village property. However, emergency access for UPD and LBPD to the CSULB main campus and Beachside Village property would be maintained at all times, and UPD would be notified of construction activities that would require any temporary lane closures and of alternative routes/detours. Furthermore, construction activities are temporary in nature and full access to all roadways within the CSULB main campus and Beachside Village property would be restored upon completion of the proposed near- and mid-term development projects. As such, construction of the Master Plan Update's near- and mid-term development projects would not require new or physically altered police protection facilities, and impacts would be less than significant.

Operation

The Master Plan Update's proposed near- and mid-term development projects would include the renovation, replacement, and construction of new buildings. For renovation projects that include interior and exterior renovations (Beachside Housing, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Pedestrian/Bike Lane Improvements, Lecture Hall 150-151 Renovation, Fine Arts 1 / 2 Renovation, Fine Arts 4 Renovation, Liberal Arts 5 Renovation, Theatre Arts Renovation, University Theatre Renovation, Microbiology Student Success Center Renovation, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, Central Plant Decarbonization, Nursing Building Renovation, Engineering Tech Renovation, and Redefining the Campus Quad), no substantial changes would occur to those facilities such that they would result in the need for new or expanded police protection facilities. For renovation projects that involve additions (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Student Health Services Addition, and University Music Center Renovation/Addition), the additions would be constructed within the existing campus boundaries and would be served by the UPD. Additionally, the UPD already has plans to increase the existing police department building by approximately 5,000 square feet in the next five years as part of the Corporation Yard Renovation Project.

Replacement projects involve the demolition and replacement of an existing facility in the same physical location. Replacement projects would include the Engineering Replacement Building, New Parkside Housing Village, Aquatics Center and Pool Renovation, and College of the Arts Replacement Building. These facilities would be located within the existing campus boundaries and are already and would continue to be served by the UPD. The nature of operations for

replacement projects would be similar to existing operations and thus, would have a similar demand for police protection. Therefore, replacement projects would not result in the need for new or expanded police protection facilities.

New projects involve construction of a new facility with a new use. New projects would include the Faculty and Staff Housing and New 7th St. Community Outreach Facility. Operation of the New 7th St. Community Outreach Facility would incrementally increase demand for police protection services but would be considered infill development and would not expand the UPD's service area.

Projects with a new residential component typically increase the demand for police protection services. The near- and mid-term Housing projects proposed under the Master Plan Update include the New Parkside Housing Village, Faculty and Staff Housing, Hillside College Renovations/Addition, and Beachside Housing. The New Parkside Housing Village and Faculty and Staff Housing projects would result in additional beds on campus while the Hillside College Renovations/Addition and Beachside Housing would right-size units and have fewer beds upon implementation of the Master Plan Update. Overall, the Master Plan Update would increase the number of beds on campus by approximately 2,172 beds, which may incrementally increase the demand on police protection services. However, the UPD is already planning to expand its existing facility and increase its workforce by 4 police officers and 1 police dispatcher to maintain response times and service capacity within the campus. It is not anticipated that any new UPD facilities would be necessary offsite.

Thus, the near- and mid-term development projects are not anticipated to result in a substantial increase in UPD service calls. Accordingly, operation of the near- and mid-term development projects would not result in the need for new or physically altered police protection facilities, and impacts would be less than significant.

PSR-3 Schools. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?

Program-Level Analysis for Master Plan Update

Campus growth accommodated by the Master Plan Update would result in an increase of approximately 4,458 FTES, 723 faculty and staff, and 285 faculty/staff household members through the Master Plan Update 2035 horizon year. The growth in students, faculty, and staff may introduce school-aged children that may attend local schools, such as those within LBUSD. The schools within the vicinity of the CSULB main campus include Gant Elementary School, Kettering Elementary School, Rogers Middle School, Wilson High School, Tincher Preparatory School, and Sato Academy of Mathematics & Science High School.

For the purposes of this analysis, a conservative approach was used which assumes that all school-aged children associated with the projected increase of 723 faculty and staff would be served by LBUSD. It is assumed that school-aged children associated with the faculty and staff would attend various schools throughout LBUSD and would not impact one individual school.

Table 3.10-3 shows the student generation impacts resulting from implementation of the Master Plan Update. Based on the projected increase of 723 faculty and staff, and the assumption that

all new faculty and staff would occupy single-family residences, implementation of the Master Plan Update is estimated to generate a total of approximately 98 students.

Table 3.10-3: School-Aged Children Generated by Master Plan Update

School Level	Projected Build-Out Single-Family Units	Student Generation Factor	New LBUSD Students from Implementation of Master Plan Update
Elementary School	241	0.1806	44
Middle School	241	0.0895	22
High School	241	0.1310	32
Total	723	-	98

Source: Long Beach Unified School District, October 2022, *Residential and Commercial/Industrial Development School Fee Justification Study*.

Based on LBUSD's future 23,000 total surplus capacity in permanent buildings and additional 26,000 surplus capacity in portables, it is anticipated that LBUSD would have adequate capacity to serve 98 additional students generated from implementation of the Master Plan Update. Therefore, implementation of the Master Plan Update would not result in the need for new or physically altered schools, and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

It is anticipated that construction of the near- and mid-term development projects would utilize construction workers within the local and regional labor force. As such, construction workers are not anticipated to relocate to the area as a result of the construction of the near- and mid-term projects and would not result in the generation of school-aged children. Therefore, construction of the proposed near- and mid-term development projects would not require new or physically altered school facilities, and impacts would be less than significant.

Operation

As discussed under the program-level analysis, assuming the increase of 723 faculty and staff through the Master Plan Update Horizon year would occupy single-family residences, implementation of the Master Plan Update is estimated to generate a total of approximately 98 students, and it is assumed that these school-aged would attend various schools throughout LBUSD and would not impact one individual school.

The increase of faculty and staff would be necessary to support students at CSULB, and thus, is directly associated with the growth in the student population. As such, with the exception of the Faculty and Staff Housing project, none of the individual development projects under the Master Plan Update would directly generate school-aged children.

The Faculty and Staff Housing project could directly generate school-aged children as it would provide new housing for faculty and staff and their household members. The Faculty and Staff Housing project would provide 285 units, which is assumed to include an average of two people (one of whom is the faculty and staff member); therefore, it is assumed that the Master Plan Update would accommodate 285 faculty and staff household members.

Table 3.10-4 shows the student generation impacts resulting from implementation of the Faculty and Staff Housing project. Based on the projected increase of 285 faculty and staff household members, and using the student generation factors for multi-family attached units, implementation of the Faculty and Staff Housing project is estimated to generate a total of approximately 26 students.

Table 3.10-4: School-Aged Children Generated by the Faculty and Staff Housing Project

School Level	Projected Build-Out Single-Family Units	Student Generation Factor	New LBUSD Students from Implementation of Master Plan Update
Elementary School	95	0.1136	11
Middle School	95	0.0614	6
High School	95	0.0847	9
Total	285	-	26

Source: Long Beach Unified School District, October 2022, *Residential and Commercial/Industrial Development School Fee Justification Study*.

It is assumed the school-aged children generated by the Faculty and Staff Housing project would attend the elementary, middle, and high schools nearest to the CSULB main campus. Based on the elementary, middle, and high schools total remaining capacity of 365, 34, and 77, respectively, it is anticipated that LBUSD would have adequate capacity to serve 26 additional students generated from implementation of the Faculty and Staff Housing project. Therefore, implementation of the Master Plan Update would not result in the need for new or physically altered schools, and impacts would be less than significant.

PSR-4 Library Services. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

Program-Level Analysis for Master Plan Update

The University Library serves CSULB students, faculty, and staff. With the planned campus population growth, it is anticipated that the demand for library services would increase. However, a substantial increase in demand is not expected and the performance objectives of the University Library would continue to be met. Additionally, the Master Plan Update would provide for new study space to be included in ground floors of new and renovated academic buildings and outdoor space such as quads and courtyards, as part of its student support network concept. These improvements are designed to accommodate the increased demand associated with the planned increase in the student and faculty/staff population; therefore, additional on-campus library facilities beyond what is proposed in the Master Plan Update would not be necessary. Impacts to on-campus library services would be less than significant.

It is anticipated that most students, faculty, staff, and faculty/staff household members would primarily utilize the University Library as it serves the CSULB population. The increase in the student and faculty/staff population is not anticipated to substantially increase the use of off-campus library services provided by the LBPL system. Additionally, planning for new or

physically altered LBPL facilities is based on an assessment of the cumulative need for new facilities; implementation of the Master Plan Update itself would not result in the need for new or expanded facilities. For example, in the past year, LBPL has piloted expanded operating hours and teen programming at several branch locations to meet community needs. LBPL implements its Strategic Plan to continue to expand resources in response to community needs and continues to receive funding from the state for facility improvements. Therefore, implementation of the Master Plan Update would not result in the need for new or physically altered other public facilities and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction of the Master Plan Update's near- and mid-term development projects would utilize construction workers within the local and regional labor force. As such, construction workers are not anticipated to relocate to the area as a result of the near- and mid-term projects and would not result in the generation of residents that would utilize other local public facilities, such as libraries. Therefore, construction of the Master Plan Update's near- and mid-term development projects would not require other new or physically altered facilities such as libraries, and impacts would be less than significant.

Operation

The near- and mid-term development projects would not involve any changes to the University Library; therefore, operation of the near- and mid-term development projects would not result in direct impacts to on-campus library services. Indirect impacts to library services would result from an increased demand in library services associated with the planned campus growth. However, no specific near- or mid-term development project would impact the performance objectives of the University Library to provide direct support for the educational mission of the university through selecting, organizing, preserving, and disseminating recorded knowledge in all its formats and manifestations. As proposed under the Master Plan Update, study space would be included in ground floors of new and renovated academic buildings and outdoor space such as quads and courtyards, as part of its student support network concept. New and renovated academic buildings that may have ground-floor study space include the following projects: Engineering Replacement Building, College of the Arts Replacement Building, USU Renovation/Addition and Cafeteria Replacement, Fine Arts 1/2 Renovation, Fine Arts 4 Renovation, Liberal Arts 5 Renovation, Microbiology Student Success Center Renovation, Nursing Building Renovation, and Engineering Tech Renovation. Additionally, the Redefining the Campus Quad project may include additional study space. Therefore, the expanded resources resulting from the near- and mid-term development projects would serve the anticipated on-campus population growth.

Due to the proposed expansion of study space and adequate service provided by the University Library, it is not anticipated that the use of off-campus library services provided by the LBPL system would increase. Additionally, planning for new or physically altered LBPL facilities is based on an assessment of the cumulative need for new facilities; implementation of the Master Plan Update's near- and mid-term development projects would not result in the need for new or expanded facilities.

Additionally, a New 7th St. Community Outreach Facility is proposed under the Master Plan Update. Although the details of the project are currently unknown, the proposed building would be used for community engagement. The New 7th St. Community Outreach Facility would be considered infill development, would serve the existing and projected campus population, and would not result in an expansion of the Main Campus beyond its existing boundaries.

Implementation of the New 7th St. Community Outreach Facility would result in the continuation of existing academic programs and campus support facilities that would not fundamentally change the nature of campus operations. Therefore, the New 7th St. Community Outreach Facility would not generate additional demand for other public facilities. Therefore, operation of the near- and mid-term development projects would not result in the need for new or physically altered other public facilities, and impacts would be less than significant.

PSR-5 Parks. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Program-Level Analysis for Master Plan Update

The CSULB main campus contains approximately 149 acres of landscaping and open space. As discussed in 3.10.2, Environmental Setting, the Open Space Framework of the Master Plan Update aims to build upon the existing structure of open space within the campus by providing a sense of place within each district to create a connected network of activity across the campus; increasing open space that can adapt to the evolving needs of the campus users and community; and enhancing the campus' urban forest. Implementation of the Master Plan Update would increase open space within each campus district by adding to the urban forest and creating outdoor environments within the South District, providing open space for student housing and along Bouton Creek within the West District, and integrating a more efficient field layout and open space opportunities within the North District. The outdoor spaces would serve as learning spaces and communal areas to serve the campus population.

Furthermore, the Master Plan Update proposes improvements to landscaping and open space throughout the main campus's quad, courtyards, plazas, corridors, and edges. Open space and landscaping improvements within these areas include but are not limited to increasing social spaces connected by pathways; increasing seating and corridors in courtyards; activating outdoor gathering spaces in the plazas; and planting drought tolerant landscape on the edges of the campus. Overall, implementation of the Master Plan Update would expand and redesign the campus's park-like open space and landscaping to serve the needs of the existing and future campus population. As such, implementation of the Master Plan Update would increase and improve open space within the campus.

In addition to improving open space, the Master Plan Update includes the renovation, expansion, or construction of existing and new recreational facilities, as further discussed in the project-level analysis below. As such, implementation of the Master Plan Update would increase and improve the recreational services available for the existing and future campus population, and the physical impacts of these improvements are analyzed throughout Chapter 3 of this EIR. Given the adequacy and wide range of proposed improvements to open space and recreational facilities to serve the needs of the projected campus population, the Master Plan Update would not result in

substantial physical deterioration of on-campus open space and recreational facilities.

The CSULB population is also served by parks and recreational facilities provided by LBPRM. CSULB students, faculty, and staff may access neighborhood, City, and regional parks and recreational facilities. With the projected campus population growth, it is anticipated that the use of existing off-campus parks and recreational facilities could increase nominally. As discussed above, implementation of the Master Plan Update would include improvements to open space, athletic facilities, and the pedestrian and bike network that would continue to serve the campus population. Additionally, as an urban commuter campus, it is anticipated that a portion of the net new on-campus student and employee population would come from within the region, which is already served by parks and recreational facilities provided by LBPRM. Therefore, the increase in the student and employee population is not anticipated to significantly increase the use of off-campus parks. Given the adequacy and wide range of proposed improvements to open space and recreational facilities, it is not expected that off-campus use of neighborhood, City, or regional parks and recreational facilities would in a manner that would require construction or cause substantial deterioration of such facilities.

Overall, implementation of the Master Plan Update would not result in new or physically altered governmental facilities in order to maintain performance objectives for parks; would not increase the use of local parks or recreational facilities in a manner that would cause substantial deterioration; and would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction of the Master Plan Update's near- and mid-term development projects would utilize construction workers within the local and regional labor force. As such, construction workers are not anticipated to relocate to the area as a result of the near- and mid-term development projects and would not result in the generation of residents that would utilize the local parks and recreational facilities. Therefore, construction of the Master Plan Update's near- and mid-term development projects would not result in substantial adverse physical impacts associated with new park facilities, an increase in the use of existing local parks or recreational facilities leading to substantial physical deterioration, or new or physically altered recreational facilities. Construction impacts related to parks and recreational facilities would be less than significant.

Operation

As discussed under the program-level analysis, implementation of the Master Plan Update would include improvements to landscaping and park-like open space throughout the campus. The following mobility, circulation, and open space projects would renovate the existing pedestrian and bike lane facilities, Friendship Walk, campus entrance, and campus quad on the main campus: Pedestrian/Bike Lane Improvements, Friendship Walk Stairs Revitalization; Improved Campus Entrance and Gateway; Redefining the Campus Quad. The proposed Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, and Redefining the Campus Quad projects would meet the objectives of the Master Plan Update by providing a sense of place within each district. The proposed Pedestrian/Bike Lane Improvements project would improve the connectivity across the campus. Thus, the proposed mobility, circulation, and open space projects would meet the objective of the Master Plan Update to provide a sense of place within each district to create a connected network of activity across the campus.

In addition, other near- and mid-term development projects, such as the New Parkside Housing

Village, Faculty and Staff Housing, Engineering Replacement Building, College of the Arts Replacement Building would create courtyards that offer outdoor social areas and may improve upon and expand open space and landscaping. As such, implementation of the near- and mid-term development projects would increase and improve the open space available for the existing and future campus population.

One of the objectives of the Master Plan Update is to demolish or renovate buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and have critical deferred maintenance issues, including for the campus's recreational facilities. The following near- and mid-term development projects would include the renovation, expansion, or construction of existing and new recreational facilities: Aquatics Center and Pool Renovation, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, Baseball Field Conversion to Multi-Use Field, and Relocated Archery Field. The proposed Aquatics Center and Pool Renovation would upgrade one of the most utilized recreational facilities on campus and may include additional bleachers to serve the projected campus population. The Jack Rose Track/Commencement Facilities projects would include additional amenities and bleachers to serve the projected campus population. The proposed Walter Pyramid Renovation project would renovate aging facilities and include interior improvements to better serve student-athletes and fans, such as an upgraded sound system and expanded concession stands. The proposed Baseball Field Conversion to Multi-Use Field and Relocated Archery Field projects would convert and move the existing fields to better serve the existing and projected campus population. Thus, the proposed athletic facilities projects would meet the objective of the Master Plan Update to renovate buildings to improve operation, maintenance, and user comfort. The physical impacts of these improvements are analyzed throughout Chapter 3 of this EIR. Given the adequacy and wide range of proposed improvements to open space and recreational facilities to serve the needs of the projected campus population, the near- and mid-term development projects would not result in substantial physical deterioration of on-campus open space and recreational facilities.

Due to the proposed improvements to on-campus open space and recreational facilities, it is not anticipated that the use of off-campus parks provided by the LBPRM would increase. Thus, implementation of the Master Plan Update's near- and mid-term development projects would not result in the need for new or expanded parks or recreational facilities or cause substantial deterioration of such facilities.

Overall, operation of the near- and mid-term development projects would not result in new or physically altered governmental facilities in order to maintain performance objectives for parks; would not increase the use of local parks or recreational facilities in a manner that would cause substantial deterioration; and would not require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Impacts would be less than significant.

3.10.5 Mitigation Measures

No mitigation measures would be required.

3.10.6 Level of Significance After Mitigation

Impacts would be less than significant.

3.10.7 Cumulative Impacts

Public services for CSULB are provided by LBFD, UPD and LBPD, LBUSD, and the University Library and LBPL, and parks and recreational facilities are provided by the university and LBPRM.

LBFD, LBPD, LBUSD, LBPL and LBPRM also serve the population of the City of Long Beach. Cumulative development in the City of Long Beach would increase the concentration of people and structures within these local public service jurisdictions which would increase demand for such services. As discussed in Section 3.10.4 above, the projected campus population growth under the Master Plan Update would also increase the demand for public services. However, as evaluated in Section 3.10.4, it is not anticipated that new or expanded public facilities would be required to accommodate development under the Master Plan Update. The Master Plan Update would not expand the service area of public service providers that also provide services to the City of Long Beach, and projects implemented under the Master Plan Update are considered infill development that would occur within the existing campus boundaries. Additionally, implementation of the Master Plan Update would provide improvements to existing university services, such as providing study space and updating recreational facilities, and is not anticipated to increase off-campus use of libraries and parks and recreational facilities.

Further, any new development and growth from related projects would occur within existing developed areas where adequate public services currently exist as the City of Long Beach is completely urbanized. Other related development projects would be required to pay impact fees consistent with local jurisdiction requirements, such as fire facilities, park and recreation facilities, police facilities, and school impact fees, to ensure the adequate provision of public services. Nonetheless, implementation of the Master Plan Update would not expand service areas nor is it anticipated to require additional facilities/services, and therefore the impact of Master Plan Update buildout on public services would not be considered cumulatively considerable. Cumulative impacts to public services would be less than significant.

3.11 TRANSPORTATION

This section evaluates the potential transportation impacts associated with implementation of the Master Plan Update. This section presents the applicable regulatory setting, environmental setting, methodology for determining potential impacts, analysis of the potential transportation impacts resulting from implementation of the Master Plan Update, proposed measures to mitigate any significant or potentially significant impacts if such impacts are identified, and an analysis of potential cumulative impacts. Consistent with CEQA Guidelines, impacts associated with bicycle, pedestrian, and transit facilities; the generation of vehicle miles traveled (VMT); transportation hazards; and emergency access are evaluated as part of this analysis.

Public and agency comments related to transportation received during the public scoping period in response to the Notice of Preparation (NOP) address the project's potential to increase VMT, conflict with adopted plans or policies, potential to increase hazards, or impact emergency access. Comments identify locations for potential review of safety conditions and encourage the use of transportation demand management measures to mitigate potential project impacts should those impacts be found significant, access for campus users and local residents, conditions for people who walk/bike/scooter on campus, and parking conditions on campus and in adjacent neighborhoods. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.11.1 Regulatory Setting

Federal

Americans with Disabilities Act

Titles I, II, III, and IV of the Americans with Disabilities Act (ADA) have been codified in title 42 of the United States Code, beginning at section 12101. Title III prohibits discrimination based on disability in "places of public accommodation" (businesses and non-profit agencies that serve the public) and "commercial facilities" (other businesses). The regulation includes Appendix A to Part 36 (Standards for Accessible Design), establishing minimum standards for ensuring accessibility when designing and constructing a new facility or altering an existing facility. The ADA requires public transit operators to meet its requirements. Transit facilities, intermodal centers, rail stations, and platforms must meet accessibility standards as set by the U.S Department of Transportation (USDOT). Accessibility standards regulate paths of travel, bus stops and shelters, curb ramps, grade crossings, parking areas, passenger drop-off areas, platform edges, etc.

State

Senate Bill 743

SB 743, adopted in 2013 and effective as of July 2020, required the Governor's Office of Planning and Research (OPR) to develop new State CEQA guidelines addressing transportation impact metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by LOS (level of service) or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

In the amended CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric and applied their discretion to recommend its use statewide. The California Natural Resources Agency certified and adopted the amended CEQA Guidelines in December 2018. The amended CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts" and the provisions requiring the use of VMT apply statewide as of July 1,

2020. The adoption of VMT as the appropriate metric of transportation impacts reflects the stated intent of the legislation to "promote the reduction of greenhouse gas emissions, the development of multimodal networks, and a diversity of land uses." Use of LOS alone as an impact criterion can result in many unintended consequences such as more sprawl, less walkability, more vehicle travel, and inefficient public transit. Use of VMT as am impact analysis metric helps to provide a more complete perspective of the potential effects of land use and transportation decisions.

The *Technical Advisory on Evaluating Transportation Impacts in CEQA*[1] (Technical Advisory) provides advice and recommendations to CEQA lead agencies on how to implement SB 743. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

The Technical Advisory also provides guidance on impacts on transit. Specifically, the Technical Advisory suggests that lead agencies generally should not treat the addition of new transit users as an adverse impact. As an example, the Technical Advisory suggests that "an infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network."

California Department of Transportation

The California Department of Transportation (Caltrans) is the state agency responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as the segments of the Interstate Highway System that lie within California. Caltrans District 7 is responsible for the operation and maintenance of State Route 22 (SR-22) and Interstate 405 (I-405) in the study area. As part of these responsibilities, Caltrans reviews local development projects subject to CEQA to assess potential impacts on the State Highway System based on technical guidance from the Caltrans Vehicle Miles Traveled-Focused Transportation Impact Study Guide and the *Traffic Safety Bulletin 20-02-R1: Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance*.

Vehicle Miles Traveled-Focused Transportation Impact Study Guide

The VMT Transportation Impact Study Guide outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and greenhouse gas (GHG) emissions reduction goals. The VMT Transportation Impact Study Guide endorses the *Technical Advisory on Evaluating Transportation Impacts in CEQA*. The Technical Advisory serves as the basis for transportation impact analysis methodology and thresholds including the use of screening to streamline qualified projects because they help achieve the state's VMT/GHG reduction and mode shift goals.

California Department of Transportation Safety Impact Guidance

The Caltrans Safety Impact Guidance provides technical instructions on how to evaluate potential safety impacts on the State Highway System. This guidance largely focuses on the actions of Caltrans district staff in performing the analysis and providing relevant impact information to lead agencies. The interim guidance recommends that safety analyses include a review of three primary elements related to transportation safety: design standard compliance, collision history,

[1] Governor's Office of Planning and Research, April 2018, *Technical Advisory on Evaluating Transportation Impacts in CEQA*.

and collision risk (consistent with the Federal Highway Administration's Systemic Approach to Safety). The interim guidance does not establish specific analysis methods or significance thresholds for determining safety impacts under CEQA. Additionally, Caltrans notes that local agencies may use the interim guidance at their own discretion as a guide for review of local facilities.

Complete Streets Directive

Caltrans enacted *Complete Streets: Integrating the Transportation System* (Complete Streets Directive) in October 2008, which required cities to plan for a "balanced, multimodal transportation network that meets the needs of all users of streets." A complete street is a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit vehicles, trucks, and motorists, appropriate to the function and context of the facility. Every complete street looks different, according to its context, community preferences, the types of road users, and their needs.

Assembly Bill 1358, The Complete Streets Act

Assembly Bill 1358, the Complete Streets Act (Government Code Sections 65040.2 and 65302), was signed into law by Governor Arnold Schwarzenegger in September 2008. As of January 1, 2011, the law requires cities and counties, when updating the part of a local general plan that addresses roadways and traffic flows, to ensure that those plans account for the needs of all roadway users. Specifically, the legislation requires cities and counties to ensure that local roads and streets adequately accommodate the needs of bicyclists, pedestrians, and transit riders, as well as motorists.

At the same time, Caltrans, which administers transportation programming for the State, unveiled a revised version of Deputy Directive 64 (DD-64-R1 October 2008), an internal policy document that explicitly embraces Complete Streets as the policy covering all phases of state highway projects, from planning to construction to maintenance and repair.

Senate Bill 375

Senate Bill (SB) 375 requires metropolitan planning organizations to prepare a sustainable communities strategy (SCS) as part of their regional transportation plans (RTP). The SCS demonstrates how the region could meet its GHG reduction targets through integrated land use, housing, and transportation planning. Specifically, the SCS must identify land use and transportation strategies that combined with the RTP project list will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

California State University

California State University Transportation Impact Study Manual

In response to SB 743, the California State University (CSU) Office of the Chancellor prepared the *California State University Transportation Impact Study Manual*, January 2020. The CSU Transportation Impact Study Manual (TISM) provides guidance for the preparation of CEQA-compliant transportation impact analysis pursuant to SB 743 and is the operative TISM for the analysis presented in this document. The CSU TISM addresses methodology and threshold expectations for transportation impacts related to VMT, transit, bicycles, pedestrians, safety, and emergency access.

California State University Office of Fire Safety

Within the CSU Office of the Chancellor, the Office of Fire Safety is authorized to enforce all fire and panic safety provisions in the California Code of Regulations (CCR) as adopted by the Office of the State Fire Marshal (OSFM).[2,3] CCR Health and Safety Code Sections 13108 and 13146 authorize the OSFM to enforce fire and life safety provisions in the following areas:

- Plan review and approval, permitting and subsequent construction inspections of all new construction, remodel, renovation, and tenant improvement projects on/in state-owned, -leased, or -operated properties (CCR Title 24)
- Inspection of existing state-owned, -leased or -operated properties for compliance with all applicable fire and panic safety regulations (CCR Title 19)
- Investigation of origin and cause of fires/explosions in state-owned, -leased, or -operated facilities (CCR Title 19)

A Memorandum of Understanding between the CSU and the OSFM will incrementally grant Office of Fire Safety personnel responsibility to exercise enforcement for plan review and approval and subsequent construction inspections on behalf of the OSFM and in accordance with CSU policies.[4]

The California State University Owner Controlled Insurance Program Safety Manual

The CSU Owner Controlled Insurance Program Safety Manual (OCIP Safety Manual) includes standard construction management BMPs applicable to development projects on CSU property. The BMPs listed in the OCIP Safety Manual are implemented by the construction contractor and each project requires a written safety program that meets or exceeds all applicable state, county, and city laws, statutes, regulations, codes, ordinances, and order of those agencies with jurisdiction over the construction activities.[5] The OCIP Safety Manual states that worksite traffic controls must conform to the requirements published in the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD).[6]

Regional

Southern California Association of Governments 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments (SCAG) is the designated Municipal Planning Organization (MPO) for six Southern California counties (Los Angeles, Ventura, Orange, San Bernardino, Riverside, and Imperial), and is federally mandated to develop plans for regional transportation, land use and growth management, and air quality. Long Beach is one of many local and regional jurisdictions comprising SCAG. The Regional Transportation Plan (RTP),

2 The California State University, Doing Business with the CSU: Capital Planning, Design, and Construction: Permitting and Review, available at : https://www.calstate.edu/csu-system/doing-business-with-the-csu/capital-planning-design-construction/operations-center/Pages/permitting-and-review.aspx, accessed March 15, 2023.

3 CAL FIRE, June 2022, *Memorandum of Understanding Between CAL FIRE - Office of the State Fire Marshal and The Board of Trustees of the California State University Designated Campus Fire Marshal Program*.

4 The California State University, PolicyStat, Section XI: Project Plan Development for Major Capital Construction Projects, Section 9232, Building Code Enforcement, available at: https://calstate.policystat.com/policy/6654819/latest#autoid-x65bw, accessed July 15, 2022.

5 The California State University, May 2016, *The California State University Owner Controlled Insurance Program Safety Manual*.

6 Ibid.

Regional Comprehensive Plan, and Compass Growth Vision Report identify the transportation priorities for the Southern California region. The policies and goals of the RTP, Regional Comprehensive Plan, and Compass Growth Vision Report focus on the need to coordinate land use and transportation decisions to manage travel demand.

SCAG updates its long-range (i.e., minimum 20 years) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) every four years, per federal law (Title 23 United States Code Section 134 et seq., Title 49, United States Code Section 5303 et seq., and Title 23, Code of Federal Regulations Section 450 et seq.) and state law (SB 375). SCAG's 2020-2045 RTP/SCS, also known as "Connect SoCal", was adopted in May 2020 for federal transportation conformity purposes; the plan in its entirety was formally adopted in September 2020.

The SCS is a required element of the RTP that provides a plan for meeting GHG emissions reduction targets set forth by the California Air Resources Board (CARB). It provides growth forecasts that are used in the development of air quality-related land use and transportation control strategies by the south coast air quality management district (SCAGMD). CARB has determined SCAG's reduction target for per capita vehicular emissions to be 8 percent by 2020 and 19 percent by 2035 relative to the 2005 baseline. Successfully meeting these targets will require substantial effort to reduce VMT. The 2020-2045 RTP/SCS calls for investing $635 billion over the 25-year term of the plan toward over 4,000 transportation projects, which collectively are expected to result in a 5 percent reduction in daily VMT per capita and a more than 25 percent decrease in traffic delay per capita. Investments will focus on maintaining and better managing the existing transportation network, expanding mobility choices, and increasing investment in transit and complete streets.

Of the ten goals presented in the 2020-2045 RTP/SCS, the following five are applicable to transportation:

- Goal #2: Improve mobility, accessibility, reliability, and travel safety for people and goods.
- Goal #3: Enhance the preservation, security, and resilience of the regional transportation system.
- Goal #4: Increase person and goods movement and travel choices within the transportation system.
- Goal #7: Adapt to a changing climate and support an integrated regional development pattern and transportation network.
- Goal #8: Leverage new transportation technologies and data-driven solutions that result in more efficient travel.

Local

CSULB is an entity of the CSU, a state agency, and the campus is state-owned property; therefore, development on the campus is not subject to local policies, regulations, or ordinances governing transportation. Nonetheless, the City's regulations pertinent to transportation are described below for informational purposes only, and not as the basis for the determination of significant impact for purposes of CEQA. Some of the proposed circulation and mobility improvements could, if ultimately implemented, occur on roadways under the City of Long Beach jurisdiction. Therefore, the following City of Long Beach policies and standards would apply to those improvements.

The City of Long Beach General Plan

The Long Beach General Plan (adopted May 2013, as amended) establishes the goals, policies, and directions the City will take to achieve the vision of the community and guide the future development of the City. Select expectations related to CEQA transportation impact analysis for transit, active transportation, and safety that are relevant to this analysis are listed below.

- LU Policy 1-1: Promote sustainable development patterns and development intensities that use land efficiently and accommodate walking.
- LU Policy 5-1: Require safe, attractive and environmentally-sustainable design, construction and operation of all buildings, landscapes and parking facilities in employment and educational centers.
- LU Policy 18-2: Enhance street corridors and spaces between buildings by incorporating small green areas, native and drought-tolerant landscaping and street trees.
- LU Policy 5-2: Connect employment and higher education centers to other activity centers and adjacent neighborhoods via walking, biking and transit routes.
- LU Policy 5-3: Require employment and higher education centers to transition to walkable and bikeable campus environments with wayfinding signage, integrated open spaces and easy accessibility via roadways, transit and bicycle routes.
- LU Policy 5-4: Provide excellent transit connections to California State University at Long Beach, City colleges and all major employment and educational campuses.
- LU Policy 7-6: Promote transit-oriented development around passenger rail stations and along major transit corridors.
- LU Policy 7-11: Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.

The City of Long Beach Design Standards

The City of Long Beach maintains design standards for the transportation network related to engineering and planning. These standards are compiled in the City of Long Beach Residential Development Standards[7] and the City of Long Beach Engineering Standard Plans.[8] The design standards are used to construct a transportation network that has consistent features. This consistency provides common expectations for users to minimize potential conflicts and to establish clear right-of-way practices.

The City of Long Beach Bicycle Master Plan

The City of Long Beach Bicycle Master Plan (2016) aims to create an environment that is active, healthy, and prosperous place to live, work, and play. The Plan expands upon the Mobility Element of the Long Beach General Plan by providing further details on bicycle planning and design. Developing this system is expected to increase travel choices that contribute to active lifestyles that produce public health and environmental benefits. Policy and planned improvement

[7] City of Long Beach Development Services Department, Chapter 21.64 Transportation Demand and Trip Reduction Measures, available at: https://www.longbeach.gov/lbds/planning/current/zoning/residential-development-standards/, accessed March 15, 2023.

[8] City of Long Beach Public Works Department, City of Long Beach Engineering Standard Plan, available at: https://longbeach.gov/pw/resources/standard-plans/, accessed March 15, 2023.

expectations relevant to this transportation impact analysis are listed below.

- Goal #1: Design bicycle facilities that are accessible and comfortable for people of all ages and abilities
  - Strategy 1: Develop a comprehensive bikeway network
  - Strategy 2: Implement citywide bicycle support facilities
  - Strategy 3: Develop a multimodal transportation network that provides for local and regional mobility to meet the challenges of climate change
- Goal #2: Increase awareness and support of bicycling through programs and social equity
  - Strategy 4: Increase awareness of bicycle safety practices
  - Strategy 5: Strive for social equity
  - Strategy 6: Promote bicycle riding as a fun and easy way to travel
- Goal #3: Identify, develop, and maintain a complete and convenient bicycle network
  - Strategy 7: Identify and pursue all potential funding sources for bicycle enhancements funding
  - Strategy 8: Enhance standard operating practices for bicycle facility maintenance
  - Strategy 9: Conduct ongoing planning and evaluation for bicycle facilities

Long Beach Vision Zero

The City of Long Beach's City Council utilizes the Vision Zero traffic safety approach, approved in 2016 and local initiatives led by Safe Streets Long Beach to address roadways and pedestrian networks. Safe Streets Long Beach uses a process of data collection to mitigate traffic fatalities while promoting safe and healthy mobility for all community members. The transportation network is designed and built to comply with engineering design standards that provide common expectations to users to minimize conflicts and the potential for collisions. Traffic enforcement and education reinforce traveler expectations while emergency services respond to collisions and other safety calls.

- Goal #1: Dedicating Resources to Vision Zero Actions: Addressing the real costs of human life as a result of traffic fatalities and serious injuries. Allocating additional City resources to prevent fatal and serious collisions will save human lives and makes financial sense.
- Goal #2: Building Safe Streets: Designing streets to promote safe interactions between all road users and to minimize the severity of collisions when they do occur is paramount to achieving Long Beach's Vision Zero goal. The City of Long Beach is committed to building and operating streets that are safe for all-regardless of age, ability, or mode of transportation.
- Goal #3: Improving Data and Transparency: Collision data informed the actions this plan and will continue to play an important role in crafting effective strategies to eliminate traffic fatalities and serious injuries. The more complete and accurate the data is, the better we can respond, track, and communicate our progress.
- Goal #4: Promoting a Safety Culture: We must all contribute to a safety culture that values human life over expediency and empathy over self-interest. Everyone must think about their role in contributing to a safe transportation system.

- Goal #5: Enhancing Processes and Partnerships: There are many entities that affect and are impacted by the transportation system. This complexity demands a coordinated approach to ensure that all voices and interests are considered and that we are fully leveraging partnerships with local and regional organizations and agencies, as well as forge new ones. The City will also reexamine its own processes and identify needed changes for a more coordinated and effective approach to road safety.
- Goal #6: Equity: We will prioritize infrastructure investments in disadvantaged communities and where people are disproportionately impacted by traffic collisions. Furthermore, we will ensure that enforcement efforts, which are an important component of Vision Zero, do not have unintended consequences in low-income communities or communities of color.

3.11.2 Environmental Setting

This section describes the existing environmental setting, which is the baseline scenario upon which project-specific impacts are evaluated. The environmental setting for transportation includes baseline descriptions for roadway, transit, bicycle, and pedestrian facilities.

Roadway System

The roadway system in the vicinity of CSULB is shown in Figure 2-2 in Chapter 2, Project Description, and described below:

- Bellflower Boulevard: A north-south arterial providing access to I-405 to the north and the Pacific Coast Highway to the south. Bellflower Boulevard has five travel lanes, with a median turn lane and several segments providing on-street parking on one or both sides of the street near CSULB. Bellflower Boulevard also includes a bikeway on both sides of the street that includes a painted buffer and vertical separation through a combination of plastic bollards and parked cars. Approaching and departing intersections the protected bike lane shifts to a shared lane, with some intersections including green skip striping for mixing zones.
- Palo Verde Avenue: A north-south arterial providing access to I-405 to the north. It provides four travel lanes, with on-street parking, median turn lanes, and bike lanes on both sides of the street near campus. South of Atherton Street, Palo Verde Avenue provides access to CSULB Parking Structures 2 and 3, each of which provide approximately 1,300 parking spaces in the north campus.
- Studebaker Road: A north-south arterial providing access to I-405 northbound to the north with interchanges serving vehicles traveling to/from the north on I-405 and providing access to/from SR-22 to the south. Studebaker Road has four travel lanes in the vicinity of CSULB with limited on-street parking that is typically found along the Studebaker Road frontage road.
- Atherton Street: An east-west roadway that serves as the University's northern border and providing access to the north campus. Atherton Street has four travel lanes, alternating buffered and standard bike lanes, a raised median with turn lanes at intersections, and limited on-street parking in the vicinity of CSULB.
- 7th Street: An east-west roadway that serves as the University's southern border, providing access to the south campus. This roadway has six travel lanes, bike lanes west of West Campus Drive (the eastbound bike lanes drop between West Campus Drive and East Campus Drive), and no on-street parking. Most of 7th Street along the CSULB frontage includes a raised median with turn lanes at intersections (there is a minor

segment with a painted median between West Campus Drive and East Campus Drive). In the vicinity of CSULB, 7th Street is designated as State Route 22 (SR-22) and provides regional access to the east via the Garden Grove Freeway (SR-22), the north and south via the San Diego Freeway (I-405), and to the north via the San Gabriel River Freeway (I-605).

- Anaheim Road: An east-west roadway providing access to the center of the university's main campus to/from the east and ends at the San Gabriel River (on-campus this becomes State University Drive). This roadway has four travel lanes and no on-street parking. Most of Anaheim Road is fronted by residential land uses. East of CSULB, this street connects with Palo Verde Avenue and Studebaker Road.
- Pacific Coast Highway (PCH): A northwest-southeast arterial southwest of campus providing local and regional access. PCH has five to six travel lanes, with a median turn lane. The five-lane segment north of 7th Street includes on-street vehicle parking and bike lanes. In the vicinity of CSULB, PCH is designated as State Route 1 (SR-1).

Internal Vehicular Circulation

The internal roadway system at the campus is comprised of the following roadways:

- Merriam Way: A north-south roadway providing internal access within CSULB. Between Atherton Street and Parking Structure 1, Merriam Way has four travel lanes and then narrows to two lanes south of the parking structure (there is a short three lane segment fronting parking lot E1). North of Atherton Street, Merriam Way becomes Fanwood Avenue and provides access to the residential neighborhood north of the University. Parking is not allowed along this roadway.
- Determination Drive: A three to four-lane north-south roadway providing internal access within CSULB and surface parking lots in the north campus. Parking is not allowed along this roadway.
- Beach Drive: A four-lane east-west roadway providing internal access within CSULB. A primary campus gateway is at the Beach Drive and Bellflower Boulevard intersection at the western edge of campus. Beach Drive curves to the south and becomes West Campus Drive near the center of campus. Parking is not allowed along this roadway.
- Deukmejian Way: A two-lane north-south roadway, connecting to State University Drive just west of Palo Verde Avenue, and then shifting to an east-west roadway near the tennis courts and connecting to parking lot E3. This roadway provides internal access within CSULB and surface parking lots in the east campus. Parking is not allowed along this roadway.
- West Campus Drive: A two-lane north-south roadway providing internal access within CSULB. A primary campus gateway is at the West Campus Drive and 7th Street intersection at the southern edge of campus. Parking is not allowed along this roadway.
- East Campus Drive: A two-lane north-south roadway providing internal and through access within CSULB. A primary campus gateway is at the East Campus Drive and 7th Street intersection at the southern edge of campus. Parking is not allowed along this roadway.
- State University Drive: A two-lane east-west roadway providing access to the pick-up/drop-off turnaround area west of Palo Verde Avenue. East of Palo Verde Avenue, State University Drive becomes Anaheim Road, which provides access to Studebaker

Road and terminates at the San Gabriel River just over a half mile east of campus. Limited parking is allowed along the north side of this roadway.

Transit System

Long Beach Transit and the Orange County Transportation Authority (OCTA) provide transit service to and in the vicinity of campus, including bus routes within the campus along Beach Drive and West Campus Drive. Bus routes serving the campus also provide connections to other local and regional transit services including Metrolink, the A (Blue) Line, and C (Green) Line. The University also provides its own transit service throughout campus and nearby areas. The transit system map is illustrated in Figure 3.11-1.

Long Beach Transit routes serving the campus include the following:

- Route 81: Operates in the east-west direction along 10th Street and 7th Street from downtown Long Beach to CSULB at 30-minute headways during peak hours.
- Routes 91, 92, 93, and 94: Operate along 7th Street in the east-west direction and along Bellflower Boulevard in the north-south direction. These routes provide service from downtown Long Beach to Alondra Boulevard at 12-minute headways during peak hours.
- Routes 172, 173, and 174: Operate along the Pacific Coast Highway and Stearns Street in the east-west direction and along Palo Verde Avenue and Studebaker Road in the north-south direction. These routes provide service from downtown Long Beach to Norwalk Station at 30-minute headways during peak hours.
- Passport D: Runs mostly along Ocean Boulevard in the east-west direction. The route provides service from Catalina Landing in the west to CSULB and to Los Altos Market Center at 30-minute headways during peak hours.

OCTA routes serving the campus include the following:

- Route 1: Operates on 7th Street in the vicinity of CSULB. This route provide service from San Clemente to CSULB generally along Pacific Coast Highway at one-hour headways during peak hours.
- Route 50: Operates on 7th Street in the vicinity of CSULB. This route provides service between Orange and CSULB along 7th Street, Studebaker Road and Willow Street/Katella Avenue at headways of 20 to 30 minutes during peak hours.

CSULB provides shuttle service within campus with the Campus Connection. This shuttle promotes an alternative to the use of personal vehicles and reduces the need for students, faculty, or staff to drive on campus once they arrive and park their vehicle. The Campus Connection provides the following three shuttle routes to serve major parking facilities and the campus perimeter.

- On-Campus West Shuttle: provides service from the south campus to the north campus along western campus roadways. The route begins at the 7th Street pick-up/drop-off area, continues north along West Campus Drive and west along Beach Drive, and then continues into the north campus on Determination Drive, Merriam Way, and Atherton Street. Two shuttles are provided along this route with operation from 7:00 AM to midnight Monday through Thursday and from 7:00 AM to 5:00 PM on Fridays. The Off-Campus West Express also provides service between 7:30 AM and 3:00 PM Monday through Thursday.

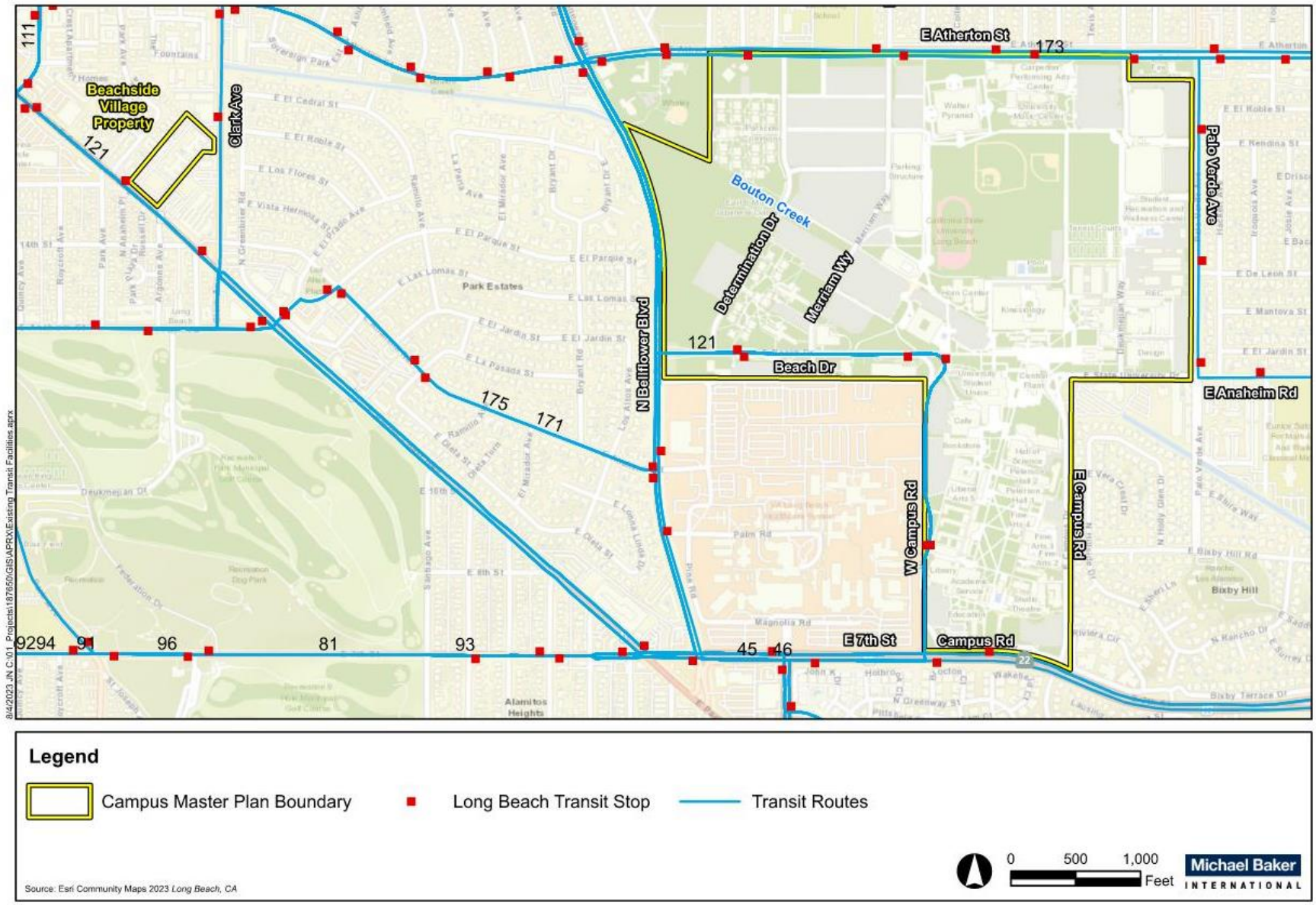

Figure 3.11-1: Existing Transit Facilities

- East Campus Shuttle: Provides service from the south campus to the north campus along the eastern campus roadways. The route begins at the 7th Street pick-up/drop-off area, continues north-along East Campus Drive and east along State University Drive, and then continues into the north campus on Palo Verde Avenue, Atherton Street, and Merriam Way. Two shuttles are provided along this route with operation from 7:00 AM to midnight Monday through Thursday and 7:00 AM to 5:00 PM on Fridays.
- On-Campus Tripper: Provides a complete loop around campus. The route begins at the 7th Street pick-up/drop-off area, continues north along West Campus Drive and west along Beach Drive, and then continues into the north campus on Determination Drive, and uses existing surface lots and internal roadways to travel east to Palo Verde Avenue. The route then continues south on Palo Verde Avenue to State University Drive and then south on East Campus Drive. One shuttle is provided along this route with operation from 7:00 AM to 7:00 PM Monday through Thursday and 7:00 AM to 5:00 PM on Fridays.
- Beachside Shuttle: Transports off-campus Beachside Village residents to/from the CSULB main campus. One shuttle is provided along this route with operation from 7:00 AM to 11:00 PM Monday through Thursday and 7:00 AM to 4:00 PM on Fridays.

Bicycle and Pedestrian System

Bicycle and pedestrian facilities within the study area are designated according to the following five classifications:

- Class I Bikeway (Bike Path) – A completely separate ROW for the exclusive use of bicycles and pedestrians, with vehicle and pedestrian crossflows minimized.
- Class II Bikeway (Bike Lane) – A restricted ROW designated for the use of bicycles, with a striped lane on a street or a highway. Vehicle parking along with vehicle and pedestrian crossflows are permitted.
- Class III Bikeway (Bike Route) – A ROW designated by signs or pavement markings for shared use with pedestrians and motor vehicles.
- Class IV Bikeway (Separated Bikeway) – A ROW for the exclusive use of bicycles which provides a required separation between the bikeway and through vehicular activity.
- Sidewalks are typically concrete walkways raised above the level of the adjacent roadway for the exclusive use of pedestrians.

Within the study area, designated bicycle facilities include:

- Bellflower Boulevard: bicycle facilities include bike lanes and parking protected bikeways, which are provided in north and southbound directions
- Atherton Street: bicycle facilities include bike lanes and buffered bike lanes, which are provided in east and westbound directions
- 7th Street: bicycle facilities include bike lanes, which are provided in east and westbound directions between Bellflower Boulevard and West Campus Drive
- Palo Verde Avenue: bicycle facilities include bike lanes, which are provided in north and southbound directions north of Anaheim Road
- Studebaker Road: bicycle facilities include bike lanes, which are provided in north and southbound directions north of Anaheim Road

The existing and planned bicycle facilities are illustrated in Figure 3.11-2.

Pedestrian facilities include sidewalks, marked crosswalks, and signalized pedestrian crossings. Sidewalks are generally provided on both sides of all external perimeter roads around the CSULB main campus, with the exception of 7th Street, which provides sidewalks along the south side of the roadway only, with pedestrian circulation occurring within the campus boundary instead of on sidewalks along the north side of the roadway.

Safety

Caltrans approaches safety through three primary elements as discussed in the regulatory setting: design standard compliance, collision history, and collision risk. The agency has standardized traffic safety investigations and is responsible for safety of State Route 1 (SR-1, PCH), State Route 22 (SR-22, 7th Street), and Interstate 405 (I-405, San Diego Freeway) and its interchanges in the study area per *Traffic Safety Bulletin 20-02-R1*.

The City of Long Beach, Caltrans and CSULB are the owners and operators of the transportation network in the immediate study area. These agencies have developed their transportation networks consistent with design standards and monitor collision data to address safety concerns. Design standards are used to provide consistent expectations and experiences for transportation network users to help minimize potential conflicts that could contribute to collisions. When new developments occur, they are expected to comply with all applicable design standards as part of constructing or modifying the transportation system.

The City of Long Beach utilizes the Vision Zero traffic safety approach to eliminate all traffic fatalities, approved in 2016, and local initiatives led by Safe Streets Long Beach to address roadways and pedestrian networks. Safe Streets Long Beach uses a process of data collection to mitigate traffic fatalities while promoting safe and healthy mobility for all community members. The transportation network is designed and built to comply with engineering design standards that provide common expectations to users to minimize conflicts and the potential for collisions.

Collision History

A traffic collision is defined as any event where a vehicle strikes any object while moving. That object could be another car, a pedestrian, or something fixed in place like a light post. When collisions cause damage or injury, the details are recorded by the local law enforcement agency and loaded into the California Highway Patrol Statewide Integrated Traffic Records System (SWITRS). The Transportation Injury Mapping System (TIMS) uses SWITRS data to show an area's High Injury Network (HIN). A HIN consists of streets with a high concentration of traffic collisions that result in severe injuries and deaths, with an emphasis on those involving people walking and bicycling.

The City of Long Beach Vision Zero Plan identifies 7th Street between East Campus Drive/Margo Avenue and Studebaker Road and PCH south of 8th Street, as high-injury corridors for motor vehicles and motorcycles. No roadways in within one mile of the CSULB main campus or Beachside Village property have been identified by Long Beach as part of the HIN for pedestrians and bicyclists.

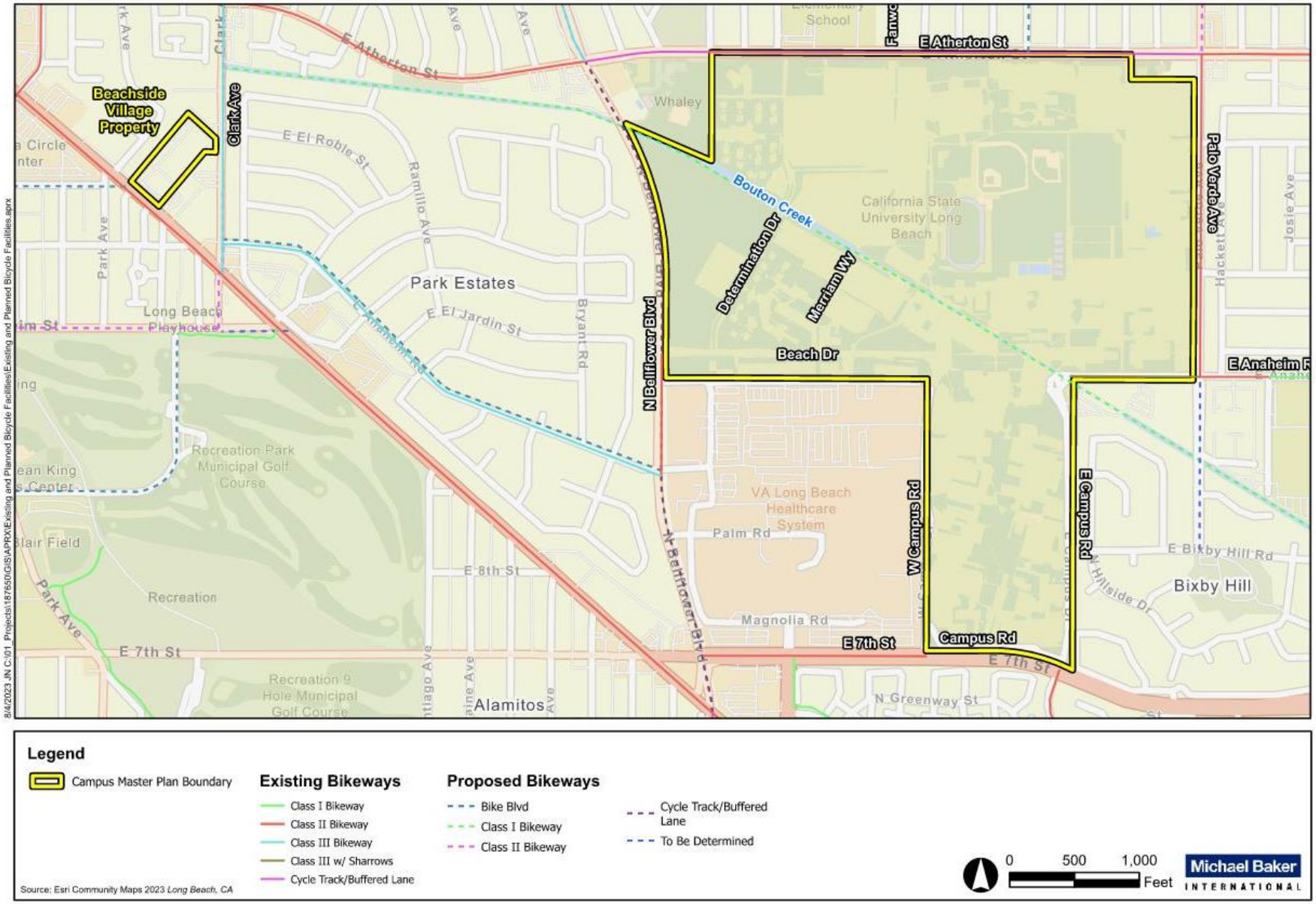

Figure 3.11-2: Existing and Planned Bicycle Facilities

A collision analysis using data collected from SWITRS was conducted for streets and intersections on the perimeter of the campus and in the area roughly bounded by Bellflower Boulevard, Atherton Street, Studebaker Road and 7th Street. Based on the most recently available 5-year collision data (between 2016 and 2020), 150 collisions occurred in this area, including people driving, walking, and biking. Of the total number of collisions, 19 resulted in serious injury and two resulted in fatalities. This data is summarized in Table 3.11-1 and Table 3.11-2.

Table 3.11-1: Number of Collisions in Project Vicinity (2016-2020)

Collision Type	Total	Number of Fatalities
Vehicle-Vehicle	130	2
Vehicle-Pedestrian	12	0
Vehicle-Bicycle	8	0
Total	**150**	**2**

Source: California Highway Patrol, Statewide Integrated Traffic Records System, available at: https://iswitrs.chp.ca.gov/Reports/jsp/index.jsp, accessed March 15, 2023.

Table 3.11-2 provides a breakdown of the types of crashes among the 150 total collisions recorded. Over half of the total collisions were either a rear-end or broadside (103 of 150 collisions). The remainder are relatively evenly split among other types, except for "Overturned," which has a count of zero.

Table 3.11-2: Type of Crashes in Project Vicinity (2016-2020)

Type of Crash	Quantity	Percentage of Total
Not Stated	3	2
Head-On	9	6
Sideswipe	12	8
Rear End	63	42
Broadside	40	26.67
Hit Object	8	5.33
Overturned	0	0
Vehicle/Pedestrian	11	7.33
Other	4	2.67

Source: California Highway Patrol, Statewide Integrated Traffic Records System, available at: https://iswitrs.chp.ca.gov/Reports/jsp/index.jsp, accessed March 15, 2023.

7th Street had the highest number of vehicle collisions at 77 over the five-year period. The locations with the most collisions included intersections with Bellflower Boulevard, Channel Drive, West Campus Drive, and East Campus Drive. There was one collision that resulted in a fatality at 7th Street and Bellflower Boulevard. There were 10 collisions over the 5-year period that involved people either walking or biking along this segment of 7th Street at key intersections used to access the campus.

Atherton Street had the second highest number of vehicle collisions at 35 collisions over the five-year period. The locations with the most collisions included intersections with Bellflower Boulevard, Palo Verde Avenue, and several other smaller streets such as Fanwood Avenue and

McNab Avenue. Several collisions occurred on the Atherton frontage street between Fanwood and Palo Verde Avenue. There were 6 collisions over the 5-year period that involved people either walking or biking along this segment of Atherton Street and key intersections used to access the campus.

Bellflower Boulevard had the third highest number of vehicle collisions at 32 collisions over the five-year period. The locations with the most collisions included intersections with Palm Road, Anaheim Street, Beach Drive, and Atherton Street. There was one collision that resulted in a fatality at Palm Road. There were 3 collisions over the five-year period that involved people walking (no collisions involving someone biking) along this segment of Bellflower Boulevard and key intersections used to access the campus.

Immediately adjacent to and east of the CSULB main campus, the campus border is composed of Palo Verde Avenue, State University Drive, and East Campus Drive. These roadways have a smaller concentration of collisions, compared to other segments described, with a total of six collisions.

A cluster of rear-end collisions was reported along 7th Street at Bellflower Boulevard, Channel Drive, and West Campus Drive. There are no discernable existing hazards in the vicinity of the CSULB main campus due to the roadway and driveway configurations of the campus.

Transportation Demand Management

CSULB has implemented a variety of transportation demand management (TDM) measures to both reduce reliance on single occupancy vehicle travel for the campus population, as well as to spread the peak load of vehicles needing to park on campus. Existing measures include:[9]

- Transit pass subsidies for Long Beach Transit
- Increased parking fees to manage peak demand
- Schedule adjustment to spread some of the peak load to off-peak time periods
- Increase in online learning to reduce travel to the campus
- Priority parking for clean air vehicles
- Electric vehicle chargers
- Bicycle parking

Emerging Transportation Technology and Travel Options

Transportation and mobility are being transformed through several forces ranging from new technologies, different personal preferences, and the unique effects of the COVID-19 pandemic, the combination of which could alter traditional travel demand relationships in the near term and long term. These disruptive trends increase uncertainty in forecasting future travel conditions, especially considering that new technologies such as automated vehicles may operate on future transportation networks once all phases of the project are complete and operational. Information about how technology is affecting and will affect travel is accumulating over time.

Furthermore, the COVID-19 pandemic and subsequent actions by federal, state, and local governments to curtail mobility and encourage physical distancing (i.e., limit in-person economic

[9] California State University, Long Beach, 2022, *CSULB Parking & Transportation Services Annual Report 2021-2022*.

and social interactions) may have long-term effects on travel demand. While travel activity will likely stabilize after the pandemic has subsided, it is possible that some of these temporary changes will influence people's travel choices into the future, including either accelerating or diminishing some of the emerging trends in transportation that were already underway prior to the pandemic. Some of the emergent changes already influencing travel behavior that could accelerate in the future include the following:

- Substituting internet shopping and home delivery for some shopping or meal-related travel.
- Substituting participating on social media platforms for social/recreational travel.
- Substituting telework for in-office work/commute travel.
- Substituting telemedicine appointments for eligible in-person medical appointments.
- Using new travel modes and choices. Transportation network companies such as Uber and Lyft, car sharing, bicycle/scooter sharing, and on-demand micro-transit services have increased the options available to travelers in the Long Beach area and have contributed to changes in traditional travel demand relationships.

3.11.3 Methodology

Proposed Mobility & Circulation Improvements

As discussed in Chapter 2, Project Description, the Master Plan Update includes proposed enhancements to mobility and circulation for multiple transportation modes. The majority of these enhancements would occur within the CSULB main campus, but a subset has the potential to include activities at the perimeter of the CSULB main campus on roadways under the City of Long Beach jurisdiction. The following details the proposed enhancements for each mode and denotes those which could affect perimeter roadways. No mobility or circulation improvements are proposed at the Beachside Village property.

Pedestrian Network Improvements

Pedestrian amenities throughout the CSULB main campus include sidewalks and paths that provide key connections to academic buildings, housing, and other student services. The Master Plan Update proposes improvements to the existing pedestrian network on the campus to promote safety, comfort, access, and direct connections between uses. To accomplish this, three sets of improvements are proposed, the first of which includes filling network gaps, which primarily occur through and adjacent to parking lots, as well as through the sports field section of campus. In these areas, new sidewalks and paths are recommended. Specific proposed improvements to fill network gaps include the following:

- Provide a more formalized space for both pedestrians and bicyclists between parking lots G7 and G8 for safer connections to, from and across these lots; and
- Provide additional north-south and east-west pedestrian corridors adjacent to Jack Rose Track and the Baseball Field to facilitate more direct travel through these areas.

The second set of improvements involves proposed enhancements for widened sidewalks, upgrades compliant with the Americans with Disabilities Act (ADA), traffic calming to provide shared space for pedestrians, and new paved pathways to support new buildings. Specific proposed improvements include the following:

- Open the north end of the Bouton Creek Path to pedestrians, bicycles, scooters, and skateboards to provide a continuous connection from student housing and parking within the West District of campus to the center of campus;
- Create an enhanced connection between the proposed Faculty and Staff Housing project along State University Drive to the center of campus; and
- Convert Deukmejian Way to a shared space where private vehicles are limited through access controls, and pedestrians, bicyclists, and other non-motorized travelers can use the full roadway space. This shared space would connect the proposed new Faculty and Staff Housing, College of Engineering, athletics fields, and the proposed new Kinesiology building.

The third set of improvements would include enhancements to existing pedestrian crossings and the creation of new crossings. The targeted crossings would be located internal to the campus, as well as along the edges of the campus that connect with the surrounding community. Specific proposed improvements to pedestrian crossings include the following:

- Provide new crosswalks at signalized intersections around the campus perimeter, including Palo Verde Avenue and Rendina Street, Atherton Street and Merriam Way, Bellflower Boulevard and Beach Drive, and 7th Street and West Campus Drive. These proposed enhancements would involve new crosswalk striping on external perimeter intersections under City of Long Beach jurisdiction.
- Provide new pedestrian crossings to connect the campus with off-campus destinations at Bouton Creek and Bellflower Boulevard, Atherton Street and Determination Drive, and Palo Verde Avenue and Deleon Street. These proposed enhancements would involve new crosswalk striping, and pedestrian signal enhancements on external perimeter intersections under City of Long Beach jurisdiction.
- Determination Drive and Bouton Creek: Widen the existing crosswalk to facilitate pedestrian and bicyclist diagonal crossing, upgrade crosswalk markings and yield signage, add yield pavement markings, and install new lighting. Installation of a rectangular rapid flashing beacon or a raised crossing may be considered as a future phase.
- Merriam Way north of Parking Lot G3: Upgrade signage and striping at the existing crosswalk, add lighting, and consider staffed traffic control to facilitate crossings during peak periods.
- Palo Verde Parking Garages: Widen the existing crosswalk between the two garages, add yield to pedestrian signage, yield pavement markings, and lighting. Installation of a rectangular rapid flashing beacon may be considered as a future phase.
- Palo Verde North Diagonal Crossing: Upgrade the existing crosswalk marking to high-visibility markings and add yield to pedestrian signage, yield pavement markings, and lighting. Installation of a rectangular rapid flashing beacon or repositioning of the crosswalk to 90 degrees may be considered as a future phase.
- East Campus Drive Crossing at Hardfact Hill: Refresh the existing crosswalk markings and install a rectangular rapid flashing beacon.

In addition to the three sets of improvements discussed above, “night walk” overlays would be identified for primary pedestrian pathways to provide connections between the campus districts after dark. The identified night walk overlay pathways would have unique paving materials and

lighting, and physical separation of modes where possible for pedestrian paths used after 8:00 p.m.

Bicycle and All-Wheel Network Improvements

One of the goals of the Master Plan Update is to provide improvements to help the CSULB campus become less reliant on vehicular mobility. Proposed improvements to the bicycle and all-wheel network would provide safer and more comfortable options, enabling bicycle use internally within the campus, as well as provide connections for trips to and from campus. Proposed improvements to the bicycle and all-wheel network include the following:

- Bouton Creek Path: Several improvements are proposed along Bouton Creek, including:
    - A new shared use bicycle and pedestrian path following the existing route of Bouton Creek diagonally through the campus;
    - An enhanced crossing at Bellflower Boulevard. This proposed enhancement would involve new striping and potentially signalization on Bellflower Boulevard, an external perimeter roadway under City of Long Beach jurisdiction.
    - A newly constructed path south of Bouton Creek and west of Determination Drive;
    - An enhanced diagonal crossing at Determination Drive to facilitate crossing from the south side of the creek to the north side;
    - Between Determination Drive and Merriam Way, use of the existing pedestrian path for a shared use facility, which would be widened to at least 15 feet;
    - East of Merriam Way, splitting the Bouton Creek bicycle facility from the existing pedestrian pathway, to create a 15-foot-wide bicycle facility within current parking lot space south of the College of Business;
    - A marked bicycle route that continues through the center of campus with another proposed enhanced crossing across State University Drive' and
    - Future improvements: a path on the north side of Bouton Creek or a pre-fabricated bridge to help enhance connections between the bicycle facility and Parkside housing.
- Parking Lots G7/G8 Shared Use Pathway: A 15-foot-wide shared pedestrian and bicycle facility with vertical separation from vehicles is proposed for the drive aisle space between parking lots G7 and G8 to provide east-west connections in the West District. To accommodate this improvement, the road would be converted to one-way traffic.
- Determination Drive Two-Way On-Street Protected Bike Lane: A new facility is proposed on the east side of Determination Drive south of Bouton Creek, replacing one northbound travel lane, and on the west side of Determination Drive north of Bouton Creek, replacing one southbound travel lane, with a proposed diagonal crossover point at the creek crossing. The proposed placement of this facility would help minimize conflicts at driveways and keep bicyclists on the side of the street nearest to destinations. The use of temporary materials for the vertical separation barrier, such as planters, would ensure flexibility if this space is needed for vehicles during move-in or special event days at the campus.
- Beach Drive Two-Way Off-Street Bike Path: A new facility is proposed for the north side of Beach Drive and would require widening the north sidewalk in most locations. This facility would also include both pedestrian and bicycle crossing improvements at Bellflower

Boulevard (which would involve new/modified striping on Bellflower Boulevard, an external perimeter roadway under City of Long Beach jurisdiction), Determination Drive, Merriam Way, Brotman Drive, and the existing pedestrian crossing signal to allow bicyclists to access the proposed north/south bicycle facility on the west side of West Campus Drive. A new bus boarding island is also proposed for the north side of Beach Drive at the stop between Determination Drive and Merriam Way, to help minimize bus and bike conflicts. The bicycle facility would be built either at a "half step" elevation between the sidewalk and roadway, or at the same elevation of the sidewalk. A third "split elevation" option, with the westbound bike facility at sidewalk height and the eastbound facility at roadway height may be considered.

- West Campus Drive Two-Way Off-Street Bike Path: This facility is proposed for the west side of West Campus Drive, providing a new separated bicycle facility option that runs the full length of the South District. In locations with constrained width, narrowing the roadway to the space currently dedicated to a southbound Class II bicycle lane may be necessary.
- Additional Improvements: additional proposed improvements could include new bicycle route signage, pavement striping and markings, and widening pathways where shared bicycle/pedestrian spaces are currently narrower than 15 feet.

Transit Network Improvements

The existing on-campus shuttle system provides a full loop around the campus. The east and west loops require transfer points at the northern and southern ends of campus. Several improvements are proposed to simplify the current service, including simplifying campus routes to full clockwise and counterclockwise loops; improving frequency to 15-minute peak headways in each direction to address capacity concerns; staffing shuttle stops to alleviate confusion about shuttle service and help build ridership among new students; and providing an on-demand shuttle service or ride-hailing subsidy to provide service to Beachside Village and other off-campus locations.

In the long term, CSULB may consider multiple mobility hub locations on campus to help serve as key transfer points for different modes, different transit lines and destinations for services. Future mobility hubs would serve as a location where existing mobility services would converge.

Vehicular Network Improvements

In order to increase safety and comfort for pedestrians and bicyclists on the CSULB campus, the following improvements to the vehicular network are proposed:

- Determination Drive: To provide space for the two-way bicycle facility, a reduction to one vehicular travel lane is recommended in the northbound direction south of Bouton Creek and in the southbound direction north of Bouton Creek.
- Beach Drive: To provide space for the two-way bicycle facility, a reduction to one vehicular travel lane is recommended in each direction, with the addition of a center turn-lane.
- West Campus Drive: No changes are proposed to vehicle travel lanes. Traffic calming elements, such as speed lumps/cushions, are recommended.
- East Campus Drive: No changes are proposed to vehicle travel lanes. Traffic calming elements, such as speed lumps/cushions, are recommended.
- Deukmejian Way: Limit vehicle access to parking pass holders, pick-up/drop-off, and campus vehicles to create a shared use road. At the intersection of Deukmejian Way,

consider simplifying intersection geometry by moving the crosswalk and stop sign west of south leg driveway and limiting south leg driveway to right-in/right-out vehicular circulation only.

- Palo Verde Avenue: The City of Long Beach preliminary plan along Palo Verde Avenue includes the reduction of one vehicular travel lane in each direction, providing a parking-protected bicycle lane in the northbound direction and angled parking with a bike lane in the southbound direction. The provision of angled parking on the side of the street adjacent to the campus would provide a greater opportunity for on-street parking to serve the campus, without people needing to cross Palo Verde Avenue. The City's preliminary plans also call for lane reductions and safety enhancements, such as a protected corner, at the intersection with Anaheim Road/State University Drive. This intersection is currently all-way stop controlled. It should be noted that this project would be implemented by the City of Long Beach entirely in its own jurisdiction and would not be implemented by CSULB under the Master Plan Update and is listed here due to its adjacency to the CSULB main campus.

Additionally, pedestrian and bicycle focused gateway improvements are proposed for campus entry points along Bellflower Boulevard, 7th Street, Palo Verde Avenue, and Atherton Street. Due to its proximity to surface parking lots on the campus, Atherton Street is envisioned as the primary vehicular entry point for the campus, specifically at Merriam Way and Carfax Avenue. The current entry point at Determination Drive is proposed to be deprioritized for vehicles due to the proposed bicycle and pedestrian improvements at this location. The following improvements to campus entry points are proposed:

- Determination Drive: Consider right-in/right-out only.
- Merriam Way: Work with the City of Long Beach on potential signalization improvements and install advanced vehicle wayfinding signage.
- Carfax Avenue: Upgrade pavement markings and consider right-in/right-out only or signal warrant with the City of Long Beach.

The ultimate operation and design of the above campus entry points along Atherton Street could involve new striping and/or signal modifications on an external perimeter roadway under City of Long Beach jurisdiction.

Parking and Transportation Demand Management

Changes related to building and facility improvements proposed under the Master Plan Update would require the shifting of some existing parking space locations. However, no net change in parking spaces is anticipated, and replacement parking lots proposed at the current sites of the College of Education and International House buildings would allow for additional space for bicycle and pedestrian amenities.

TDM measures would be implemented to reduce the demand for parking on campus, reduce vehicle trips, prioritize pedestrian and bicycle movement, and encourage greater use of transit, pedestrian, and bicycle travel. While CSULB has implemented several TDM strategies and maintains a TDM plan, the plan will be updated. Additional TDM measures considered under the Master Plan Update include, but are not limited to:

- Increasing on-campus housing opportunities;
- Incentivizing student residents to not have a car on campus;
- Distributing class and work schedules to spread the peak demand on campus;
- Providing additional on-campus amenities (e.g., childcare, post office, etc.); and
- Enhancing transit, shuttle, bicycle, and pedestrian amenities on the campus

Transportation Impact Analysis Methodology

The transportation impact analysis methodology ranges from quantitative forecasting of VMT to qualitative assessments of how the implementation of the Master Plan Update may disrupt existing facilities or services for transit, pedestrians, and bicyclists. A summary of the methodology used to determine impacts for each aspect of transportation analyzed in this section is provided below.

Transit Service

Development under the Master Plan Update was qualitatively evaluated to determine how it would affect existing and planned transit service within a two-mile radius of the CSULB main campus and Beachside Village property consistent with the CSU TISM Guidelines, which require all transit services within two miles to be mapped. A significant impact would occur if implementation of the Master Plan Update would cause a disruption to existing transit service or interfere with future transit service or planned service expansion. Disruption includes causing delays or interruptions to service. Per the *Technical Advisory on Evaluation Transportation Impacts in CEQA* prepared by the Governor's Office of Planning and Research, creating new demand for transit is not considered an impact.

Bicycle and Pedestrian Facilities

Similar to transit impacts, the development under the Master Plan Update was qualitatively evaluated to determine how it would affect existing and planned bicycle and pedestrian networks. A significant impact would occur if implementation of the Master Plan Update would disrupt existing bicycle and pedestrian facilities or interfere with expansions of the bicycle and pedestrian networks contained in adopted plans.

Roadway Network

To evaluate potential project (i.e., Master Plan Update) impacts on VMT, the daily VMT metrics described in Table 3.11-3 are evaluated and compared against baseline conditions. These metrics generally involve the tracing or accounting of vehicle trips and their length within a specific study boundary or from a specific trip generation source such as the CSULB main campus. As required by the CSU TISM, all metrics are estimated or forecasted using the travel demand model.

Table 3.11-3: Vehicle Miles Traveled Metric Definition and Visualization

Metric	Definition	Visualization
Total Network VMT	All vehicle-trips (i.e., passenger and commercial vehicles) assigned on the network within a specific geographic boundary (i.e., model-wide, region-wide, city-wide). Vehicle volume on each link is multiplied by link distance.	
Total VMT generated by a project	All vehicle-trips are traced to/from the project site. For the proposed project, this metric captures all passenger and commercial vehicle VMT generated by the residents, workers, students, and visitors to the site.	
Household VMT per resident	All automobile (i.e., passenger cars and light-duty trucks) vehicle-trips are traced back to the residence of the trip-maker. For the proposed project, this metric captures the VMT generated by all residents living in on-campus housing.	
University Work Tour VMT per employee	All automobile trips which are part of home-work tours (i.e., the total miles traveled between primary start and end locations inclusive of stops between) or work-based tours are counted. For the proposed project, this metric captures the employee VMT when traveling to/from campus.	

Table 3.11-3: Vehicle Miles Traveled Metric Definition and Visualization

Metric	Definition	Visualization
School Tour VMT per student	All automobile trips which are part of home-school tours or school-based tours are counted. For the proposed project, this metric captures the student VMT when traveling to/from campus.	
VMT per Service Population	The service population is comprised of resident on-campus students, commuter students, resident on-campus employees, commuter employees and other residents. To avoid double counting, all on-campus residents are counted only once.	

The latest SCAG model produces 2016 VMT estimates and 2035 VMT forecasts based on the 2020 RTP/SCS. Because the analysis for the Master Plan Update uses a baseline year of 2019, estimates for 2019 were developed by interpolating between 2016 and 2035. The SCAG model is an activity/tour-based model (ABM) that simulates daily travel for every individual in the region, accounting for land use, transportation, and demographic factors that influence travel behavior. SCAG recently updated and developed the ABM as part of its 2020 RTP/SCS. As part of this update, SCAG conducted a validation and calibration of the 2016 base year travel model that included using household travel surveys, transit boarding data, on-board transit surveys, traffic count data, and VMT estimates from annual Highway Performance Monitoring Systems data to verify that the SCAG model reasonably replicated observed travel behavior. Per the SCAG 2020 RTP/SCS model validation report, the travel demand model has been validated to accurately reflect average trip distance and trip generation for college/university trips at the regional level, based on such household travel surveys.

Table 3.11-4 contains the baseline (2019) VMT estimates from the SCAG ABM model for the daily VMT metrics described above except total VMT generated by a project, which is only reported in the impact section below. As discussed in Chapter 2, Project Description, academic year 2019-2020 is being used as the baseline for this analysis because it is the most recent year of pre-pandemic in-person campus operations.

Table 3.11-4: Baseline (2019) Daily VMT Summary

VMT Metric	Los Angeles County	CSULB
Total Daily Network VMT	221,379,289	N/A
Total Daily Home-Based VMT	N/A	585,756

Notes: NA = Not Applicable

Source: Southern California Association of Governments, Activity Based Model, available at: https://scag.ca.gov/activity-based-model, accessed March 15, 2023.

VMT is analyzed to determine how implementation of the Master Plan Update would change demand for vehicle travel. The effect of project-generated VMT is analyzed in the baseline and cumulative scenarios and the project's effect on regional VMT is analyzed in the cumulative scenario. These changes are measured using outputs from the SCAG ABM. This is consistent with the CSU TISM Guidelines, which states that the regional travel forecasting model is "the 'best' tool presently available to estimate VMT at all CSU campus locations."

Model inputs for the Master Plan Update included on-campus students, off-campus (commuter) students and on-campus employees, off-campus employees (commuters) and other residents. Although the Beachside Village residential community is located approximately 0.6 miles west of the main campus, frequent shuttle service is provided from the Beachside Village property to the main campus and is used by the majority of Beachside Village residents as reflected in the 2019 Sustainable Transportation Survey. As such, the students residing at Beachside Village were considered on-campus residents for purposes of this analysis.

VMT outputs were produced for baseline conditions; baseline plus project; cumulative conditions, which accounts for ambient growth through the horizon year without considering the Master Plan Update; and cumulative plus project scenarios, consistent with the CSU TISM Guidelines. Analysis of the Master Plan Update relative to baseline conditions is used to determine whether the Master Plan Update would result in a project-level significant VMT impact, independent of the effects of regional growth and travel pattern changes due to increases in transit and other circulation system improvements. The SCAG ABM has a base year of 2016 and a long-term horizon year of 2045, as well as forecasts for interim years that include 2035. Baseline conditions for the transportation analysis in 2019-2020 were developed through interpolation between the 2016 and 2035 model forecasts. The cumulative no project scenario reflects the 2035 horizon year for the 2020 RTP/SCS with the removal of the growth allocated to the main campus and Beachside Village property. The cumulative plus project scenario adds projected growth in the campus population to the 2035 scenario. For purposes of the VMT analysis, "project" (e.g., "without project" and "plus project") describes all development proposed under the Master Plan Update.

Prior to using the SCAG ABM model forecasts to develop the VMT forecasts in Table 3.11-5 below, the vehicle trip lengths for implementation of the Master Plan Update were compared against 2019 estimates for the campus using StreetLight mobile device data. StreetLight Data is a mobile device "big data" provider. They apply proprietary machine-learning algorithms to measure travel patterns and make them available on-demand via StreetLight InSight®. StreetLight provides data for a wide variety of transportation studies including volume, counts, Origin-Destination and more. StreetLight algorithmically transforms trillions of location data point samples into contextualized, aggregated, and normalized travel pattern data. StreetLight Data collects all of its transportation data as Location Based Services data which are services based on the location of a mobile device. StreetLight Data provide samples of actual travel to/from CSULB and are a statistically valid estimate of travel data made by actual campus users. These data were compared to the outputs of the SCAG ABM.

The SCAG ABM produced a higher estimate of 11.5 miles per trip in the baseline scenario versus 9.2 miles per trip from the StreetLight data. Thus, the estimates of VMT produced by the model are slightly higher and therefore conservative. The geographic distribution produced by the model was comparable to that of the StreetLight data.

The specific VMT metrics include the following for the purposes of identifying transportation impacts and as inputs for the air quality, greenhouse gas (GHG), and energy impact analyses.

The transportation impact metric is italicized and is consistent with what is in the CSU TISM. The significance criteria proposed for the Master Plan Update are taken directly from the CSU TISM.

- Total Network Vehicle Trips (VT)
- Total VMT generated by the project
- *Total VMT per service population*

In this case, the development under the Master Plan Update is anticipated to result in the addition of approximately 5,350 headcount on-campus students composed of both commuter students and students living on campus, 1,602 new student beds, approximately 848 headcount employees, and approximately 285 headcount faculty/staff household members, and so it was analyzed as a mixed-use project.

Because the model has a base year of 2016 and an interim horizon year of 2035, those are the years for which estimates of the service population components were required. The master plan estimates were developed in terms of full-time-equivalents (FTEs). Because the model requires that these estimates be input as headcount (HC) students and HC employees the base and future year estimates were converted to HC by applying a factor of 1.2 HC per FTE, based on actual ratios of students and employees over the past decade.

The service population comprises resident on-campus students, commuter students, resident on-campus employees, commuter employees and other residents. Per the CSU Guidelines, VMT per service population includes all VMT that is part of home-based tours for students, employees and residents. For example, if an employee were to drop off a child at school on the way to campus, all of the VMT from the home to the school to the campus would be counted. This is different from site-generated VMT, which includes only those trips which begin or end at the campus. Students have been included in the service population. Students who reside on campus were included in both the campus and County populations but were not double-counted both as students and residents in the calculation of service population.

A significant VMT impact is determined according to the following thresholds, which are specified in the CSU TISM:

- Program/Project Level Impacts
    - Mixed-Use: Total VMT/service population exceeds a level of 15 percent below baseline countywide average.
- Cumulative Level Impacts
    - Mixed-Use: Total VMT/service population under the “with Project” condition exceeds the Countywide average under the 2035 condition associated with the SCAG RTP/SCS.

Per the CSU TISM Guidelines, the following project types would generally not be required to complete a full VMT assessment; that is, a project determined to fall within one of these categories would typically be considered to have a less that significant impact related to VMT for CEQA purposes:

- Local serving retail that is less than 50,000 sq. ft., 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;
- Healthcare centers serving students, faculty, and staff;
- Recreation/fitness/wellness centers that serve students, faculty, and staff;
- On-campus housing serving students, faculty, and staff; and
- Projects generating fewer than 110 vehicle trips per day, as noted in the OPR Technical Advisory.

Hazards (Safety)

Development under the Master Plan Update was evaluated to determine whether it would cause, or contribute to, a hazard that could result in harm to travelers. A hazard may include a geometric design feature or a change in the volume, mix, or speed of multi-modal traffic attributable to the proposed improvements under the Master Plan Update that is inconsistent with applicable design standards such as the State of California Department of Transportation Standard Specifications, the CA MUTCD, and other standards as applicable. City of Long Beach standards are applicable to mobility improvements that are on city streets. A significant impact would occur if the project modifies the existing transportation network in a manner inconsistent with applicable design standards.

Emergency Access

Development under the Master Plan Update was qualitatively evaluated to assess how it would influence emergency access to and from the regional network. A significant impact would occur if implementation of the Master Plan Update would modify the existing transportation network in a manner inconsistent with applicable design standards. It is presumed that modifications that do not meet applicable design standards to a transportation facility that could be used by emergency responders would likely increase emergency access times to or from the regional transportation network.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to transportation are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to transportation if it would:

- Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?

3.11.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed.

TRA-1 Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Program-Level Analysis for Master Plan Update

Construction

Construction activities would largely occur within the boundaries of the CSULB main campus and the Beachside Village property, and would include demolition, renovation, and for new facilities proposed on the campus, site preparation and building and other infrastructure construction. Major components of site preparation would involve demolition of existing buildings and removal of existing site elements, excavation and grading of the site, and construction of necessary infrastructure and facilities. A variety of equipment would be required for the site preparation stage, including bulldozers, grading machines, cranes, and dump trucks, which would be used for the removal and deposition of cut and fill material on the site. Major elements of facility construction could include foundation construction, pouring concrete, framing, and other construction activities. Mobility and circulation improvements could involve roadway and crosswalk restriping, or sidewalk and bus stop reconstruction.

Staging, work zone, and construction laydown areas would generally be accommodated within the boundaries of the CSULB main campus and the Beachside Village property. To address construction traffic that could affect external roadways, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans. Additionally, some proposed mobility and circulation improvements could include changes to roadway striping and crosswalks on the perimeter of the CSULB main campus and could introduce new signals or modifications to existing traffic signals. Any proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Construction traffic control plans would include, among other components, appropriate traffic control devices, such as signage and temporary roadway closures, if necessary, and construction working hours.

With adherence to existing standards and requirements, safe access to the pedestrian, bicycle, transit, and street facilities within and adjacent to the CSULB main campus and Beachside Village property would be maintained during construction activities associated with development under the Master Plan Update. Therefore, development under the Master Plan Update would not conflict with plans, ordinances, or policies addressing the circulation system and impacts would be less than significant.

Operation

Transit Facilities

Development under the Master Plan Update does not include any transportation network modifications that would permanently disrupt the existing transit routes and bus stops of Long

Beach Transit either within the boundaries of the main campus and Beachside Village property or on surrounding roadways. The proposed circulation and mobility improvements include enhancements to some existing bus stops within the main campus, as well as enhancements to pedestrian and bicycle connections to transit. The Master Plan Update proposes changes within the main campus to the routes and headways of shuttles operated by the university, which would enhance connections to Long Beach Transit operated services. As such, development under the Master Plan Update would not conflict with plans, ordinances, or policies addressing transit facilities. Therefore, the impact would be less than significant during operation.

Roadway Facilities

The mobility and circulation improvements proposed under the Master Plan Update are focused primarily on enhancing pedestrian, bicycle and transit mobility and circulation. Changes to roadway facilities internal to the main campus, including limited lane restriping and repurposing, would be done in support of the implementation of facility improvements for other modes of transportation. No changes to roadway facilities on streets under City of Long Beach jurisdiction are proposed, other than changes at campus driveway locations on Atherton Street, which are intended to reduce vehicle conflicts and enhance safety. None of these intersection changes would interfere with existing roadway facilities or preclude changes to external roadway facilities as proposed by the City of Long Beach. Additionally, no substantive change to vehicle travel patterns are expected to result from the proposed improvements. As such, development under the Master Plan Update would not conflict with plans, ordinances, or policies addressing roadway facilities. Therefore, the impact would be less than significant during operation.

Bicycle Facilities

Development under the Master Plan Update would not disrupt existing and planned bicycle facilities in the study area. Future changes to roadways, bicycle facilities, and pedestrian facilities planned in the surrounding area are identified in the City of Long Beach Bicycle Master Plan, the City's Vision Zero Plan, and the City of Long Beach General Plan Mobility Element. Of these plans, the Long Beach Bicycle Master Plan contains the most detail in the vicinity of the CSULB main campus and Beachside Village property. Figures 6-1 through 6-6 in that document show on-street- and off-street facilities for walking and bicycling along the major roadways bordering the CSULB main campus and Beachside Village property, including Atherton Street, Bellflower Boulevard, PCH, 7th Street, Studebaker Road, Anaheim Road, and Palo Verde Avenue. The Master Plan Update would not interfere with any of these planned facilities, and it proposes facilities within the main campus that connect with and complement the external facilities by promoting use of non-auto travel modes. As such, development under the Master Plan Update would not conflict with plans, ordinances, or policies addressing bicycle facilities. Therefore, the impact would be less than significant during operation.

Pedestrian Facilities

The mobility and circulation improvements proposed for pedestrian facilities comprise network gap closures, widening and other enhancements to existing pedestrian pathways, and new and enhanced crosswalks. Each of these is included in the proposed Master Plan Update as part of a comprehensive, structured program of improvements. They would be constructed in compliance with requirements of the Americans with Disability Act and would further Goal #2 of the SCAG 2020-2045 RTP/SCS by improving mobility, accessibility, reliability, and travel safety for people and goods. The pedestrian goals stated in the Master Plan Update include completing the continuous mobility network, addressing safety infrastructure and enhancing the existing campus

aesthetic. These facilities would support travel within the main campus and represent part of the overall coordinated development on the main campus that would be governed by the Master Plan Update.

The Master Plan Update does not include any network modifications that would permanently disrupt existing external pedestrian facilities, nor planned facilities as detailed in the City's Bicycle Master Plan, Vision Zero Plan, and the General Plan Mobility Element. As such, development under the Master Plan Update would not conflict with plans, ordinances, or policies addressing pedestrian facilities. Therefore, the impact would be less than significant during operation.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. To address construction traffic that could affect external roadways, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans.

Additionally, a subset of the proposed mobility and circulation improvements propose changes to roadway striping and crosswalks on the perimeter of the CSULB main campus and could introduce new signals or modifications to existing traffic signals. The proposed improvements that have the potential to affect external roadways include the following:

- Provide new crosswalks at signalized intersections around the campus perimeter, including Palo Verde Avenue and Rendina Street, Atherton Street and Merriam Way, Bellflower Boulevard and Beach Drive, and 7th Street and West Campus Drive. These enhancements would involve new crosswalk striping on external perimeter intersections under City of Long Beach jurisdiction.
- Provide new pedestrian crossings to connect the campus with off-campus destinations at Bouton Creek and Bellflower Boulevard, Atherton Street and Determination Drive, and Palo Verde Avenue and Deleon Street. These enhancements would involve new crosswalk striping, and pedestrian signal enhancements on external perimeter intersections under City of Long Beach jurisdiction.
- An enhanced crossing is proposed at Bellflower Boulevard. This enhancement would involve new striping and potentially signalization on Bellflower Boulevard, an external perimeter roadway under City of Long Beach jurisdiction.
- Beach Drive Two-Way Off-Street Bike Path: A new facility is proposed for the north side of Beach Drive and would require widening the north sidewalk in most locations. This facility would also include both pedestrian and bicycle crossing improvements at Bellflower Boulevard (which would involve new/modified striping on Bellflower Boulevard, an external perimeter roadway under City of Long Beach jurisdiction), Determination Drive, Merriam Way, Brotman Drive, and the existing pedestrian crossing signal to allow bicyclists to access the proposed north/south bicycle facility on the west side of West Campus Drive. A new bus boarding island is also proposed for the north side of Beach Drive at the stop between Determination Drive and Merriam Way, to help minimize bus and bike conflicts.
- The ultimate operation and design of proposed improvements at the following campus entry points along Atherton Street could involve new striping and/or signal modifications on an external perimeter roadway under City of Long Beach jurisdiction:

- Determination Drive: Consider right-in/right-out only.
- Merriam Way: Work with the City of Long Beach on potential signalization improvements and install advanced vehicle wayfinding signage.
- Carfax Avenue: Upgrade pavement markings and consider right-in/right-out only or signal warrant with the City of Long Beach.

These improvements would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Construction traffic control plans would include, among other components, appropriate traffic control devices, such as signage and temporary roadway closures, if necessary, and construction working hours.

With adherence to existing standards and requirements regarding the preparation of construction traffic control plans in coordination with the City of Long Beach, safe access to the pedestrian, bicycle, transit, and street facilities within and adjacent to the CSULB main campus and Beachside Village property would be maintained during construction activities associated with development of the near- and mid-term development projects. Therefore, construction of the near- and mid-term development projects would not conflict with plans, ordinances, or policies addressing the circulation system and impacts would be less than significant.

Operation

To determine the near- and mid-term development projects' consistency with local pedestrian plans, a conflict would occur if the projects or any part of the projects would fail to provide safe pedestrian connections between campus buildings and adjacent streets and transit facilities, disrupt existing or planned pedestrian or bicycle facilities, or conflict with applicable plans, guidelines, or policies.

Transit Facilities

Similar to the program-level analysis of the Master Plan Update above, the near- and mid-term development projects do not include any transportation network modifications that would permanently disrupt the existing transit routes and bus stops of Long Beach Transit either within the boundaries of the main campus and Beachside Village property or on surrounding roadways. Proposed improvements to the existing shuttle system would enhance the existing service provided to the on-campus population, such as simplifying campus routes and improving frequency. As such, operation of the near- and mid-term development projects would not conflict with plans, ordinances, or policies addressing transit facilities. Therefore, the impact would be less than significant.

Roadway Facilities

The near- and mid-term development projects would not interfere with existing or planned exterior roadways. A new driveway would be introduced onto Palo Verde Avenue for the proposed Facility and Staff Housing project. However, this new driveway would be required to be designed to meet City of Long Beach standards and would not interfere with the existing roadway facility nor preclude future roadway changes proposed by the City of Long Beach. As such, operation of the near- and mid-term development projects would not conflict with plans, ordinances, or policies addressing roadway facilities. Therefore, the impact would be less than significant.

Bicycle Facilities

The near- and mid-term development projects include the following proposed improvements to bicycle facilities: Deukmejian Way shared space conversion; bicycle facility improvements along Bouton Creek Path; Parking Lots G7/G8 Shared Use Pathway; Determination Drive Two-Way On-Street Protected Bike Lane; Beach Drive Two-Way Off-Street Bike Path; and West Campus Drive Two-Way Off-Street Bike Path. Proposed bicycle facility improvements would primarily be implemented within the boundaries of the main campus, with the exception of the proposed improvements at Beach Drive, which would involve new/modified striping on Bellflower Boulevard.

Similar to the program-level analysis of the Master Plan Update above, the proposed bicycle facility improvements would not interfere with any planned facilities, and the proposed improvements within the main campus would connect with and complement external facilities by promoting use of non-auto travel modes. As such, operation of the near- and mid-term development projects would not conflict with plans, ordinances, or policies addressing bicycle facilities. Therefore, the impact would be less than significant.

Pedestrian Facilities

The near- and mid-term development projects include the following proposed improvements to pedestrian facilities: north-south and east-west pedestrian corridors adjacent to Jack Rose Track and the Baseball Field; new pedestrian connections between the proposed Faculty and Staff Housing project and the interior portions of the main campus; Deukmejian Way shared space conversion; new crosswalks at signalized intersections around the campus perimeter; new pedestrian crossing to connect the main campus with off-campus destinations; pedestrian facility improvements along Bouton Creek Path, at Merriam Way, Palo Verde Garages, Palo Verde North Diagonal Crossing, and East Campus Drive Crossing at Hardfact Hill; Parking Lots G7/G8 Shared Use Pathway; and Beach Drive Two-Way Off-Street Bike Path.

These facilities would support travel within the main campus and represent part of the overall coordinated development on the main campus that would be governed by the Master Plan Update. Similar to the program-level analysis of the Master Plan Update above, the near- and mid-term development projects do not include any network modifications that would permanently disrupt existing external pedestrian facilities, nor planned facilities as detailed in the City's Bicycle Master Plan, Vision Zero Plan, and the General Plan Mobility Element. The near- and mid-term development projects would not interfere with existing or planned pedestrian facilities and, instead, would enhance pedestrian circulation within the campus core and connections to adjacent land uses, which is a beneficial effect on the pedestrian circulation and access. As such, operation of the near- and mid-term development projects would not conflict with plans, ordinances, or policies addressing pedestrian facilities. Therefore, the impact would be less than significant.

TRA-2 Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)??

Program-Level Analysis for Master Plan Update

Construction

Due to the temporary nature of construction traffic associated with the Master Plan Update, a substantial increase in VMT would not be anticipated to result from construction. Given the temporary nature of construction industry jobs, the relatively large regional construction industry, and the total number of construction workers needed during any construction phase, it is likely

that the labor force from within the region would be sufficient to complete the majority of construction without a substantial influx of new workers and their families and would not result in a substantial increase in VMT. Additionally, the Governor's Office of Planning and Research specifically directs lead agencies that CEQA transportation impact analysis for VMT should consider automobile VMT only and not commercial truck VMT. Therefore, development under the Master Plan Update would not conflict or be inconsistent with CEQA Guidelines Section 15064.3. The impact would be less than significant during construction.

Operation

As discussed in Section 3.11.3, four scenarios are analyzed to determine potential VMT impacts, including baseline conditions; baseline plus project; cumulative no project; and cumulative plus project. The analysis of these scenarios is required per the CSU TISM Guidelines. The baseline plus project scenario evaluates the effects of the proposed project (growth in campus population associated with the Master Plan Update) on the baseline environmental setting. While this scenario is theoretical, as it essentially analyzes the effect of buildout occurring all at once under baseline conditions, rather than occurring over time to the anticipated buildout date, its purpose is to isolate the impact of the project itself. This scenario is needed to eliminate the effects of regional growth and different assumptions about future travel patterns and circulation system improvements in the future scenarios, which is accounted for in the cumulative plus project scenario described below.

Table 3.11-5 contains the specific project land use related inputs for the SCAG ABM model for the baseline year 2019 and the horizon year 2035. Table 3.11-6 summarizes the vehicle trip generation estimate under the Master Plan Update. Table 3.11-7 summarizes the VMT forecasts for the three impact analysis scenarios.

Table 3.11-5: Project Campus Population Summary Inputs to SCAG ABM for CSULB

Campus Service Population	2019 (Baseline Year)	2035 (Horizon Year)
Commuter Students (HC)	31,643	35,391
On-Campus Students (HC)	3,008	4,610
Commuter Employees (HC)	4,469	5,032
On-Campus Employees (HC)	13	298
On-Campus Employee Family Members (HC)	13	298
Total Campus Service Population	**39,146**	**45,629**

Table 3.11-6: Estimated Total Site-Generated Daily Vehicle Trips

Daily Vehicle Trips	2019 (Baseline Year)	2035 (Horizon Year)
Daily Vehicle Trips without Project	33,237	31,434
Daily Vehicle Trips with Project	46,644	44,113

Source: Fehr & Peers, 2023.

Table 3.11-7: Daily VMT Forecast Summary

VMT Metric	LA County	CSULB
Total Daily Network VMT		
Baseline	221,379,289	N/A
Baseline plus project	221,292,443	N/A
Cumulative	220,635,854	N/A
Cumulative plus project	220,549,301	N/A
Total Daily Home-Based VMT		
Baseline	N/A	585,756
Baseline plus project	N/A	704,035
Cumulative	N/A	521,028
Cumulative plus project	N/A	627,225
VMT per Service Population		
Baseline	21.4	15.0
Baseline plus project	21.4	15.4
Cumulative	19.3	13.3
Cumulative plus project	19.3	13.7
Applicable VMT Threshold per Service Population[a]		*18.2*
Threshold Exceeded in Any Analysis Scenario?		***No***

Note: N/A = Not Applicable

a. Calculated as 85 percent of the VMT per Service Population under the baseline scenario for LA County: 21.4 x 0.85 = 18.2.

Source: Southern California Association of Governments, Activity Based Model, available at: https://scag.ca.gov/activity-based-model, accessed March 15, 2023; Fehr & Peers, 2023.

To assess the effect of project-generated VMT under baseline and cumulative conditions, the project's VMT performance was compared against Los Angeles County for VMT per service population. To assess the project's effect on regional VMT, total network VMT was analyzed under cumulative conditions. The total VMT, reflecting buildout of the Master Plan Update, was calculated and then divided by the campus service population (provided in Table 3.11-5), which is inclusive of students, residents, and employees at CSULB. For example, the baseline VMT per service population for the campus is calculated to be 15.0 based on 585,756 VMT divided by the service population of 39,146. This results in the estimate of the VMT per capita (total VMT per service population), which is then compared to the countywide VMT per capita (total VMT per service population). As discussed in section 3.11.3 above, the per capita VMT associated with the Master Plan Update must be at least 15 percent below the baseline countywide average to be considered a less than significant VMT impact. As such, the applicable threshold is calculated as 18.2 VMT per service population (or 85 percent of 21.4 in the baseline scenario, as shown in Table 3.11-7).

Under baseline plus project conditions, the VMT per service population for the Master Plan Update (15.4) is higher than under the cumulative plus project scenario (13.7) due to the effects of changes in future travel patterns anticipated in the model, such as growth in public transit usage, increased telecommuting, etc. Project-generated VMT would increase under the cumulative plus project scenario relative to the cumulative no project scenario, increasing trips in the vicinity of the main campus. However, total network VMT would be reduced, indicating that the implementation of the Master Plan Update would result in more efficient travel patterns across

the region. There are several reasons why the Master Plan Update is projected to reduce total network VMT: growth in a campus well served by public transit allows for more students, faculty, and staff to travel in VMT efficient ways that would be less likely if they needed to travel to campuses further from transit; the increase in on-campus housing (both for students and faculty/staff) allows those students and faculty/staff to eliminate commute related VMT altogether; and growth in hybrid learning opportunities allows for campus growth without increasing the need for travel that would generate net new Total VMT.

As shown in Table 3.11-7, the Master Plan Update would generate VMT per service population at a level below the applicable threshold of 18.2 VMT per service population. Therefore, the impact would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed individual near- and mid-term development projects would result in similar VMT impacts to those described above at the program level for implementation of the Master Plan Update. Construction traffic associated with the near- and mid-term development projects is not expected to generate a substantial increase in VMT from construction. Given the temporary nature of construction industry jobs, the relatively large regional construction industry, and the total number of construction workers needed during any construction phase, it is likely that the labor force from within the region would be sufficient to complete the majority of Project construction without a substantial influx of new workers and their families and would not result in a substantial increase in VMT. Additionally, the Governor's Office of Planning and Research specifically directs lead agencies that CEQA transportation impact analysis for VMT should consider automobile VMT only, and not commercial truck VMT. Therefore, construction of the near- and mid-term development projects would not conflict or be inconsistent with CEQA Guidelines Section 15064.3. The impact would be less than significant.

Operation

The near- and mid-term development projects include replacement, renovation, and new development projects. The replacement and renovation projects would improve the quality and usability of these facilities but would not lead to the increase in the campus population, which is the primary contributor to increased VMT on campus. Of the near- and mid-term development projects categorized as new development, the proposed Faculty and Staff Housing project and the proposed 7th Street Community Outreach Facility are not anticipated to generate an increase in VMT. Consistent with the CSU TISM, on-campus housing can be screened out from requiring VMT analysis and can be presumed to be less than significant, as it can reduce or eliminate commuting-related VMT for students and staff because they would now live on campus. The 7th Street Community Outreach Facility is intended to serve as a facility for community engagement. By its nature it is focused on the local community (both internal and immediately adjacent to campus) and so would not generate substantial VMT and can therefore also be presumed to be less than significant. Additionally, this facility would not generate additional employment beyond the campus faculty/staff population already analyzed in the program-level above for the Master Plan, which concluded that the increase in VMT would be less than significant.

Furthermore, the evaluation of the potential for VMT related to implementation of the Master Plan Update in the program-level analysis above determined that the impact would be less than significant. The program-level analysis of VMT above accounts for all development across the CSULB main campus and the Beachside Village property through the horizon year, as the model is based on total population, rather than individual development projects. As such, the near- and

mid-term development projects are accounted for in the modeling and would likewise be expected to have a less than significant transportation impact related to VMT.

TRA-3 Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Program-Level Analysis for Master Plan Update

Construction

As previously discussed, staging, work zone, and construction laydown areas would generally be accommodated within the boundaries of the CSULB main campus and the Beachside Village property. While facilities have not been designed, nor are specific construction plans and phasing known, proposed mobility improvements could include temporary lane or roadway closures for short durations to restripe roadways and crosswalks, reconstruct sidewalks, stripe and construct bicycle facilities, etc. In order to address construction traffic that could affect external roadways, including temporary geometric design, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans. Additionally, some proposed mobility and circulation improvements could include changes to roadway striping and crosswalks on the perimeter of the CSULB main campus and could introduce new signals or modifications to existing traffic signals. Any proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Construction traffic control plans would include, among other components, appropriate traffic control devices, such as signage and temporary roadway closures, if necessary, and construction working hours.

With adherence to existing standards and requirements, safe pedestrian, bicycle, transit and street facilities would be maintained during construction activities associated with development under the Master Plan Update. As such, development under the Master Plan Update would not result in increased hazards due to geometric design feature or incompatible uses. Therefore, impacts would be less than significant during construction.

Operation

All roadway, bicycle, and pedestrian facilities would be required to be constructed consistent with the State of California Department of Transportation Standard Specifications, the CA MUTCD, as well as City of Long Beach Design Standards, and other standards as applicable.

The Master Plan Update does not include new major/primary entrances or major modifications to existing campus entrances from the City of Long Beach, however, some modification of existing roadways, including bicycle, pedestrian, and transit improvements would be necessary as the Master Plan Update is implemented. No roads are anticipated to be closed; however, some proposed improvements would reconfigure lanes on internal roadways. These types of improvements are not expected to materially affect internal vehicular circulation on the main campus, nor are they expected to lead to increased vehicular queueing that could spillback onto external roadways. The pedestrian and bicycle mobility improvements supported by these changes would reduce vehicle/pedestrian and vehicle/bicycle conflict locations, thereby enhancing safety.

Roadway improvements or modifications of facilities would be constructed in accordance with all applicable design and safety standards, including the ADA Standards for Accessible Design, the

CA MUTCD and other Caltrans design standards, and for improvements that would occur on external roadways under the jurisdiction of the City of Long Beach, the City's applicable engineering design standards. Designing consistent with standards, would allow for the safe and efficient movement of various modes of travel to, from, and through the campus.

Development under the Master Plan Update would not substantially change the mix, volume, or speeds of traffic on the existing roadway network. The CSULB main campus and Beachside Village property are located within an existing highly-urbanized area and the proposed improvements are consistent with the existing uses on the CSULB main campus (no mobility or circulation improvements are proposed at the Beachside Village property). The land uses under the Master Plan Update would be developed within the existing complementary urban transportation network, which is similar to the surrounding urban transportation network. As such the volume, mix, and speeds of traffic would remain consistent with an urban context, and implementation of the Master Plan Update would not cause a new hazard. Individual improvements developed under the Master Plan Update would be built in compliance with applicable standards and therefore would not cause or contribute to hazards because of a design feature or incompatible uses. Therefore, the impact would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. Staging, work zone, and construction laydown areas would generally be accommodated within the boundaries of the CSULB main campus and the Beachside Village property. Specific construction plans and phasing are unknown at this time, however, proposed mobility improvements could include temporary lane or roadway closures for short durations to restripe roadways and crosswalks, reconstruct sidewalks, stripe and construct bicycle facilities, etc. To address construction traffic that could affect external roadways, including temporary geometric design, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans.

As previously discussed, a subset of the proposed mobility and circulation improvements propose changes to roadway striping and crosswalks on the perimeter of the CSULB main campus and could introduce new signals or modifications to existing traffic signals. Additionally, the proposed Faculty and Staff Housing project is anticipated to create a new access point onto a roadway under City of Long Beach jurisdiction. This project would introduce a new driveway entrance onto Palo Verde Avenue, the construction of which would require a temporary pedestrian detour as a section of the sidewalk would be closed. It could also include the temporary closure of one lane of traffic on Southbound Palo Verde Avenue. These proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Construction traffic control plans would include, among other components, appropriate traffic control devices, such as signage and temporary roadway closures, if necessary, and construction working hours. With adherence to existing standards and requirements, construction of the near- and mid-term development projects would not result in increased hazards due to geometric design feature or incompatible uses. Therefore, impacts would be less than significant during construction.

Operation

The near- and mid-term development projects do not include new major/primary entrances or major modifications to existing campus entrances from the City of Long Beach, however, some modification of existing roadways, including bicycle, pedestrian, and transit improvements would be implemented. No roads would be closed; however, the following improvements would reconfigure lanes on internal roadways:

- Determination Drive: To provide space for the two-way bicycle facility, a reduction to one vehicular travel lane is recommended in the northbound direction south of Bouton Creek and in the southbound direction north of Bouton Creek.
- Beach Drive: To provide space for the two-way bicycle facility, a reduction to one vehicular travel lane is recommended in each direction, with the addition of a center turn-lane.
- G7/G8 Shared Use Pathway: A 15-foot-wide shared pedestrian and bicycle facility with vertical separation from vehicles is proposed for the drive aisle space between parking lots G7 and G8 to provide east-west connections on lower campus. To accommodate this improvement, the road would be converted to one-way traffic.
- Deukmejian Way: Limit vehicle access to parking pass holders, pick-up/drop-of, and campus vehicles to create a shared use road. At the intersection of Deukmejian Way, consider simplifying intersection geometry by moving the crosswalk and stop sign west of south leg driveway and limiting south leg driveway to right-in/right-out vehicular circulation only.

These improvements are not expected to materially affect internal vehicular circulation on the main campus, nor are they expected to lead to increased vehicular queueing that could spillback onto external roadways. The pedestrian and bicycle mobility improvements supported by these changes would reduce vehicle/pedestrian and vehicle/bicycle conflict locations, thereby enhancing safety.

For vehicle access to the main campus, the following improvements to campus entry points are proposed:

- Determination Drive: Consider right-in/right-out only.
- Merriam Way: Work with the City of Long Beach on potential signalization improvements and install advanced vehicle wayfinding signage.
- Carfax Avenue: Upgrade pavement markings and consider right-in/right-out only or signal warrant with the City of Long Beach.

These improvements, would have the benefit of reducing intersections with vehicle left turn conflicts, thereby reducing the potential for crashes involving left turning vehicles. Converting driveways to right-in/right-out would shift left turning vehicles to an adjacent intersection (likely the intersection of Merriam Way and Atherton Street) where there is left turn signal phasing and ample left turn storage.

The proposed Faculty and Staff Housing project would permanently alter geometric design with the implementation of the new driveway access point on Palo Verde Avenue. This entrance would be approximately 250 feet north of the intersection of State University Drive and Anaheim Road. The location of this new driveway would be consistent with the basic locational requirements in Long Beach Municipal Code Section 12.41.251 (D) 1, which requires a minimum of 90 feet of

spacing from any intersection. The design of this driveway would meet applicable design and safety standards, including the ADA Standards for Accessible Design, the CA MUTCD and the relevant City of Long Beach engineering design standards. Designing consistent with existing standards would allow for the safe and efficient movement of various modes of travel to, from, and through the campus at this location. All individual near and mid-term development projects would be built in compliance with applicable standards. Additionally, some proposed mobility and circulation improvements would enhance safety. As such, the near- and mid-term development projects would not cause or contribute to hazards because of a design feature or incompatible uses. Therefore, the impact would be less than significant during operation.

TRA-4 Would the project result in inadequate emergency access?

Program-Level Analysis for Master Plan Update

Construction

Ease of access and travel time are critical for first responders when traveling in emergency vehicles. Obstructions in the roadway, detours, and excessive delays due to congestion are among the factors that can affect emergency response time. Construction activities associated with development under the Master Plan Update could potentially hinder emergency access within and through the main campus and the Beachside Village property, depending on the locations of work zones and laydown areas. While facilities under the Master Plan Update have not been designed, nor are specific construction plans and phasing known, the need to maintain access for emergency vehicles is among the considerations when developing traffic control plans. As previously discussed, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans. Additionally, any proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Furthermore, all projects are required to follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects prior to implementation.

With adherence to existing standards and requirements, emergency access would be maintained during all construction activities associated with development under the Master Plan Update. Therefore, the impact would be less than significant during construction.

Operation

As discussed above in the assessment of hazards under Threshold TRA-3, all proposed modifications to the transportation network would be implemented in compliance with the design standards applicable to the CSU and to the City of Long Beach (for facilities on roadways under City of Long Beach jurisdiction). Additionally, all projects are required to follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects prior to implementation. The standards also include compliance with the CSU Emergency Management policy, which states, "*This policy requires each campus to develop and maintain an emergency management program that can be activated when a hazardous condition, natural or man-made disaster reaches, or has the potential for reaching, proportions beyond the capacity of routine campus operations*."

With implementation of the Master Plan Update, most vehicle traffic would have limited access to the campus core, however, emergency vehicles would have unlimited access to campus streets otherwise restricted to pedestrians, bicyclists, transit vehicles, and service vehicles, even after implementation of the proposed mobility and circulation improvements. As such, emergency and

service vehicles would continue to have unlimited access to the campus, similar to existing conditions. The required California State Fire Marshal review includes a plan review and approval followed by periodic field inspections concluding with issuance of a certificate of occupancy to provide for adequate emergency access and building safety features. Compliance with these standards is intended to provide for adequate on-site emergency access. Therefore, development under Master Plan Update would be designed to meet applicable emergency access and design standards, and adequate emergency access would be provided during operation. With adherence to existing standards, impact related to emergency access would be less than significant during operation.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Construction activities associated with the proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. Construction activities associated with the near- and mid-term development projects could potentially hinder emergency access within and through the main campus and the Beachside Village property, depending on the locations of work zones and laydown areas. Specific construction plans and phasing are unknown at this time; however, the need to maintain access for emergency vehicles is among the considerations when developing traffic control plans. As previously discussed, the CSU standard construction BMPs outlined in the CSU OICP Safety Manual require that construction contractors implement construction traffic control plans. Additionally, any proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Furthermore, all projects are required to follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects prior to implementation.

With adherence to existing standards and requirements, emergency access would be maintained during all construction activities associated with the near- and mid-term development projects. Therefore, the impact would be less than significant during construction.

Operation

The near- and mid-term development projects would generally not affect emergency access during construction. The proposed mobility and circulation improvements, the new driveway on Palo Verde Avenue associated with the proposed Faculty and Staff Housing Project, and access routes for each proposed facility would be designed to provide for adequate emergency access. Additionally existing CSU standards set forth in PolicyStat include State Fire Marshal review to confirm policies emergency access and building safety features. With adherence to existing standards and requirements, impacts related to emergency access would be less than significant during operation.

3.11.5 Mitigation Measures

No mitigation measures are required.

3.11.6 Level of Significance After Mitigation

Development under the Master Plan Update would result in less than significant impacts to transportation.

3.11.7 Cumulative Impacts

Construction activities associated with development under the Master Plan Update could affect external roadways. Consistent with the CSU standard construction BMPs outlined in the CSU OICP Safety Manual, construction traffic control plans would be implemented to address construction traffic. Additionally, similar to the Master Plan Update, any proposed improvements from related projects that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. The construction traffic control plans would include, among other components, appropriate traffic control devices, such as signage and temporary roadway closures, if necessary, and construction working hours. Additionally, all projects are required to follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects prior to implementation. With adherence to existing standards and requirements, construction impacts related to conflict with applicable plans addressing circulation; increased hazards due to geometric design or incompatible uses; and emergency access would be minimized. Therefore, implementation of the Master Plan Update would not contribute to cumulatively significant impacts during construction.

Implementation of the Master Plan Update would not conflict with programs, plans, ordinances or policies addressing the circulation system during operation. Additionally, similar to the Master Plan Update, design and construction documents for related projects would be required to be reviewed and approved for adequate emergency access by the local agency building and fire departments. Therefore, implementation of the Master Plan Update would not contribute to cumulatively significant impacts related to consistency with applicable plans or emergency access during operation.

Proposed mobility and circulation improvements under the Master Plan Update would include modifications to pedestrian and bicycle mobility facilities and campus entry points, which could change geometric lane design for facilities interfacing with adjacent off-campus facilities. However, as discussed, these proposed improvements would reduce vehicle/pedestrian and vehicle/bicycle conflict locations and vehicle left-turn conflicts, thereby enhancing safety in the area. As such, implementation of the Master Plan Update would contribute to a cumulatively beneficial impact related to geometric design features during operation.

Cumulative VMT impacts associated with implementation of the Master Plan Update combined with future ambient growth were assessed under the cumulative with project scenario. As discussed, the Master Plan Update under the cumulative with project scenario would not increase the total countywide VMT per service population from what is projected under the "No Project" condition. The overall or net effect of the Master Plan Update on regional total VMT would result in a reduction of cumulative countywide VMT from 220,635,854 to 220,549,301. This reduction of 86,553 daily VMT is a benefit to the region that would contribute to lower energy consumption and decreased total emissions. As such, implementation of the Master Plan Update would contribute to a cumulatively beneficial impact with respect to VMT.

3.12 TRIBAL CULTURAL RESOURCES

This section evaluates the potential impacts related to tribal cultural resources that would result from implementation of the Master Plan Update. The analysis in this section is based on the results of consultation with California Native American Tribes conducted by CSULB for the proposed project, as required by CEQA, as amended by Assembly Bill (AB) 52. Additionally, the analysis in this section is based, in part, on the findings of the Confidential Archaeological Resources Technical Report included as Confidential Appendix F that was prepared to support this analysis.

Tribal cultural resources are defined by the California Public Resources Code (PRC) Section 21074 as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (California Register) or included in a local register of historical resources, or a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

Comments from the Native American Heritage Commission (NAHC) related to tribal cultural resources were received during the public scoping period in response to the NOP. These comments address the project's consultation requirements under AB 52 and Senate Bill 18 and provides recommendations to assess the existence and significance of tribal cultural resources. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.12.1 Regulatory Setting

Federal

National Register of Historic Places

The National Register of Historic Places (National Register) was established by the National Historic Preservation Act (NHPA) of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2).[1] The National Register recognizes a broad range of cultural resources that are significant at the national, state, and local levels and can include districts, buildings, structures, objects, prehistoric archaeological sites, historic-period archaeological sites, traditional cultural properties, and cultural landscapes. As noted above, a resource that is listed in or eligible for listing in the National Register is considered "historic property" under Section 106 of the NHPA.

To be eligible for listing in the National Register, a property must be significant in American history, architecture, archaeology, engineering, or culture. Properties of potential significance must meet one or more of the following four established criteria:

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

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

[1] Code of Federal Regulations, Title 36, Part 60.2.

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

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

In addition to meeting one or more of the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance." The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

Ordinarily religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for the National Register unless they meet one of the Criteria Considerations (A-G), in addition to meeting at least one of the four significance criteria and possessing integrity:[2]

a. A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

b. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

c. A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or

d. A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

e. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

f. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

g. A property achieving significance within the past 50 years if it is of exceptional importance.

State

Assembly Bill 52

On September 25, 2014, Governor Jerry Brown signed into law AB 52. The act amended PRC Section 5097.94, and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 applies specifically to projects for which a NOP or a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) was filed on or after July 1, 2015.

[2] U.S. Department of the Interior, Revised 1997, *National Register Bulletin, How to Apply the National Register Criteria for Evaluation*.

AB 52 established a new category of protected resources under CEQA called tribal cultural resources. AB 52 requires that agencies consult with tribal representatives and consider tribal cultural values in addition to scientific and archaeological values when determining project impacts and mitigation measures during the planning process. According to PRC Section 21074, tribal cultural resources consist of either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(A) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(B) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

The following is a general summary of the PRC sections added by AB 52:

- PRC Section 21073 defines California Native American tribe to mean a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission for the purposes of Chapter 905 of the Statutes of 2004.
- PRC Section 21080.3.1 declares that California Native American tribes traditionally and culturally affiliated with a geographic area may have expertise concerning their tribal cultural resources. It also provides requirements for lead agencies to consult with California Native American tribes.
- PRC Section 21080.3.2 identifies potential topics for consultation, including the significance of tribal cultural resources, the significance of a project's impacts on tribal cultural resources, and measures for preservation or mitigation, if necessary, and defines when consultation shall be considered concluded. Consultation is concluded when: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; and (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

- PRC Section 21082.3 states that mitigation measures agreed upon in consultation shall be recommended for inclusion in the environmental document if determined to avoid or less impacts. The section also states that a lead agency may certify an environmental impact report with a significant impact on an identified tribal cultural resource if consultation has occurred, consultation was requested by a California Native American tribe but has not provided comments or engaged, or the Native American Tribe fails to request consultation within 30 days.
- PRC Section 21083.09 revises Appendix G of the CEQA Guidelines to include consideration of tribal cultural resources.
- PRC Section 21084.2 declares that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant impact on the environment.
- PRC Section 21084.3 provides example mitigation measures that may be considered to avoid or minimize significant adverse impacts to any tribal cultural resource.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

1. To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:
2. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
3. Is associated with the lives of persons important in our past;
4. 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
5. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;

- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

Public Resource Code Section 5097.9. Interference with Native American religion or damage to cemeteries or places of worship, etc., prohibited; construction and exemptions from law.

No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. The provisions of this chapter shall be enforced by the commission, pursuant to Sections 5097.94 and 5097.97.

The provisions of this chapter shall not be construed to limit the requirements of the Environmental Quality Act of 1970, Division 13 (commencing with Section 21000).

The public property of all cities, counties, and city and county located within the limits of the city, county, and city and county, except for all parklands in excess of 100 acres, shall be exempt from the provisions of this chapter. Nothing in this section shall, however, nullify protections for Indian cemeteries under other statutes.

California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097

California Health and Safety Code Section 7050.5, and PRC Sections 5097.94 and 5097.98 outline procedures to be followed in the event human remains are discovered during the course of California projects. If human remains are encountered, all work must stop at that location and the County Coroner must be immediately notified and advised of the finding. The County Coroner would investigate “the manner and cause of any death” and make recommendations concerning treatment of the human remains. The County Coroner must make their determination within two working days of being notified. If the human remains are determined to be Native American, the County Coroner shall contact the California Native American Heritage Commission. The Commission would in turn “…immediately notify those persons it believes to be most likely descended from the deceased Native American.” The descendants would then inspect the site and make recommendations for the disposition of the discovered human remains. This

recommendation from the most likely descendants may include the scientific analysis of the remains and associated items.

California State University, Long Beach Native American Reburial Remains and Cultural Patrimony Committee

CSULB's policy on Native American Burial Remains, Associated and Unassociated Funerary Objects, Sacred Objects, and Other Cultural Patrimony was developed through consultation with the local Native American community regarding construction projects and archaeological excavation and approved by the CSULB President on February 20, 1996. The policy was enacted to ensure compliance with the Federal Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 and applies to Native American burial remains, associated and unassociated funerary objects, sacred objects, and other cultural patrimony. The policy is overseen by the university's Native American Burial Remains and Cultural Patrimony (Committee). The committee includes: 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 one 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.

California State University, Long Beach Settlement Agreement, Declaration of Restrictive Covenant, and Conservation Easement – Puvungna[3]

On September 16, 2021, the CSU Board of Trustees entered into a Settlement Agreement to resolve litigation filed by the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes, a Tribal Nation ("Tribe"), and California Cultural Resources Preservation Alliance, Inc. ("CCRPA"). The Settlement Agreement required the CSU to record a Declaration of Restrictive Covenant ("Declaration") over the northwestern portion of the CSULB campus, of which a portion is the tribal and historic site commonly known as "Puvungna" (Restricted Parcel). The Declaration prohibits certain uses on the Restricted Parcel, including the construction or installation of new structures or improvements, to protect tribal and historic resources. The Declaration also permits certain uses on the Restricted Parcel, including passive use by California Native American tribes and affiliated groups, maintenance, and emergency actions. The Declaration may be terminated if and when the CSU establishes a Conservation Easement over the Restricted Parcel.

The Settlement Agreement further requires the CSU to make a good faith effort to establish a perpetual Conservation Easement over the Restricted Parcel within two years. The Conservation Easement will be granted to a qualified grantee and may be managed by a qualified easement manager. The Conservation Easement will be subject to a long-term maintenance and management plan to be prepared in the future. The prohibited and permitted uses will be the same as under the Declaration.

3.12.2 Environmental Setting

Tribes are experts on their cultural history and should be consulted for their tribal knowledge. The information presented herein is related to living tribes who still reside in Los Angeles and Orange counties and who maintain a vested interest in their history, culture, practices, customs, and

[3] Variants of the name include Pubuna, Pubugna, Puvu, Puvungna, Puvunga, Puvu-ngna, and Povuu'ngna. The ethnographic village is referred to as "Puvungna" while the archaeological district NRHP-listing is referred to as "Puvunga."

beliefs. These tribes are living communities who actively participate in the preservation of their culture and tribal resources. The following discussion is prepared based on archaeological reconstructions and published ethnographic and historical research; no original ethnographic research or oral historic research was conducted.

Ethnographic Overview

The CSULB main campus is located in a region traditionally important to multiple Native American groups and is seen by some Native Americans to be their place of creation itself. In particular, these include the Gabrielino (including the Tongva and Kizh), the Juaneño-Acjachemen, and the Luiseño. The terms Tongva, Kizh, and Acjachemen are preferred by many descendant groups over the Spanish words that have historically been used to describe them, while the Luiseño are typically identified by their band (including La Jolla, Pala, Pauma, Pechanga, Rincon, Soboba, and San Luis Rey). Each group is described below. The following summaries are not intended to provide a comprehensive account of these groups but are instead brief historical overviews based on published information.

Gabrielino (or Tongva and Kizh)

The term “Gabrielino” is a general term that refers to those Native Americans who were sent by the Spanish to the Mission San Gabriel Arcángel. Two indigenous terms are commonly used by tribal groups to refer to themselves and are preferred by descendant groups: Tongva and Kizh. Since there are two terms that are used by different groups to refer to themselves, the term Gabrielino is used in this section to encompass both Tongva and Kizh groups.

Prior to European colonization, the Gabrielino occupied a diverse area that included the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina. Their neighbors included the Chumash and Tataviam to the north, the Juaneño to the south, and the Serrano and Cahuilla to the east. The Gabrielino are reported to have been second only to the Chumash in terms of population size and regional influence. The Gabrielino language was part of the Takic branch of the Uto-Aztecan language family.

The Gabrielino Indians were hunter-gatherers and lived in permanent communities located near the presence of a stable food supply. Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game was hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison. The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly-leafed cherry. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. The Gabrielino are estimated to have had a population numbering around 5,000 in the pre-contact period. What is usually called the “Late Prehistoric” period, spanning from approximately 1,500 years B.P. to the mission era, is the period associated with the florescence of the Gabrielino.

Juaneño (or Acjachemen)

The Juaneño spoke a language belonging to the Cupan group of the Takic subfamily of the Uto-Aztecan language family. The Juaneño people were so called because of their association with Mission San Juan Capistrano, although some contemporary Juaneño identify themselves by the indigenous term Acjachemen. The term Acjachemen was used by Fray Gerónimo de Boscana to describe the indigenous group associated with the Mission San Juan Capistrano. During his

time at San Juan Capistrano, Boscana compiled an ethnographic account of the Acjachemen, including an account of the belief system centered around Chingichngish (or Chinigchinich). the primary deity of a Native American belief system that spread to multiple Southern California Native American tribes.

The Juaneño were linguistically and culturally related to the neighboring Luiseño, Cahuilla, and Cupeño. Juaneño territory extended from just above Aliso Creek in the north to San Onofre Canyon in the south and inland from the Pacific Ocean to Santiago Peak and the ridges above Lake Elsinore. The Juaneño lived in sedentary autonomous villages located in diverse ecological zones. Each settlement claimed specific fishing and collecting regions. Typically, villages were located in valley bottoms, along coastal strands and streams, and near mountain foothills. Villages were usually sheltered in coves or canyons, on the side of slopes near water and in good defensive spots. There are no reported ethnographic Juaneño villages in the vicinity of the undeveloped land on the northwest border of the CSULB main campus; the closest village sites are more than 20 miles south of the area.

Trails, hunting sites, temporary hunting camps, quarry sites, and ceremonial and gaming locations were communally owned, while houses, gardens, tools, ritual equipment, and ornamentation were owned by individuals or families. Most groups had fishing and gathering sites along the coast that they visited annually from January to March when inland supplies were scarce. October to November was acorn-gathering time, when most of the village would settle in the mountain oak groves. Houses were conical in form, partially subterranean, covered with thatch, reeds, brush, or bark. Sweathouses were round and earth covered. Each village was enclosed with a circular fence and had a communal ceremonial structure at the center.

Luiseño

The Luiseño are a group located south and west of the Juaneño. Like the Gabrielino and Juaneño, they take their English name from the Spanish mission to which most of them were assigned, San Luis Rey de Francia, located in today's Oceanside. Luiseño language and culture are so closely related to those of the Juaneño that the authors of the Smithsonian Institution's Handbook treat them as a single tribe.

However, one of the key historical differences between the Juaneño and the Luiseño is the particular relationship between certain Luiseño bands and the United States federal government. These relationships extend to federal recognition and the establishment of reservations for these Luiseño bands. Native American tribal governments with reservations that are occupied and ministered in whole or in part by Luiseño bands include the La Jolla Band of Luiseño Indians; the Pala Band of Mission Indians; the Pauma Band of Luiseño Indians of the Pauma and Yuima Reservation; the Pechanga Band of Luiseño Mission Indians; the Rincon Band of Luiseño Indians; and the Soboba Band of Luiseño Indians. The federal recognition status of these bands of Luiseño has given them federal consultation rights, including the right to repatriate human remains and grave goods under the Native American Graves Protection and Repatriation Act.

Tribal History of the CSULB Main Campus and Vicinity

The following description is a brief summary of the ethnographic information regarding the CSULB main campus. The Long Beach area was heavily settled by the Gabrielino due to its estuaries and protected bays and inlets and as evidenced by ethnography about the area, mission registers, and archaeological sites. There were a number of villages and hamlets settled in the Long Beach area.

Puvungna is the birthplace of Chingichngish, the primary deity of a Native American belief system that spread to multiple Southern California Native American tribes. The belief system based on the teachings of Chinigchinich continues to be part of modern tribal spiritual and cultural practices. In particular, Puvungna was a Gabrielino Rancheria located near Alamitos Bay, and ethnographic accounts and baptism records from the San Gabriel Mission indicated that at the time of Spanish contact it was a large and thriving community. Most ethnohistoric data suggest that the main village of Puvungna was located on Alamitos Mesa at Bixby Ranch, to the southeast of the undeveloped land on the northwest border of the CSULB main campus. However, as villages often covered large areas and could move to meet changing needs, Puvungna may refer to the entire rim of Alamitos Bay.

The Chinigchinich religion is generally considered relatively young. Beginning among the Gabrielino, it spread to the Luiseño, Juaneño, and Kumeyaay. It was intensely studied by twentieth-century anthropologists, many of whom believed it developed as a response to the illnesses and social disruption caused by European contact.

National Register-Listed Puvunga Indian Village Sites Archaeological District/NAHC Sacred Lands Inventory Listed Site

During the rancho era, the village of Puvungna was located on Rancho Los Alamitos, originally part of a much larger land grant by Manuel Nieto that encompassed the former village. Nieto established the land, which was over 200,000 acres, as Rancho Los Nieto and began building adobes on Bixby Hill in approximately 1804. In 1833, Rancho Los Alamitos was established at 28,612 acres, and encompassed the western half of Long Beach, southern half of Signal Hill, Los Alamitos, Seal Beach, Cypress, Garden Grove, Stanton, and Westminster.

Native American informants pointed out a shell midden beside the spring near the old Rancho Los Alamitos ranch house and local historians also regarded this as the site of Puvungna. The site was later recorded as P-19-000306 (also known as CA-LAN-306), and until the 1970s, this was generally regarded as the site of Puvungna, even appearing labeled as such in historical maps. Archaeologists in the 1970s began to suggest that other sites in the Signal Hill region could be associated with Puvungna.

The CSULB main campus is located on what was Rancho Los Nietos, the largest and one of the earliest Spanish land grants in California. In 1804, the rancho was divided into five separate ranchos. The land within the CSULB main campus became a part of Rancho Los Alamitos. In about 1806, an adobe house was built on a hilltop near a spring approximately 0.9 miles southeast of the CSULB main campus. This house, enlarged several times, still stands.

Over the course of the 1970s, CSULB and the surrounding community developed most of the remaining undeveloped land on and surrounding the campus. The Rancho Los Alamitos Adobe was eventually completely surrounded by a gated community. While visitors can still visit site P-19-00306 next to the adobe, they can only do so during specific times and under conditions set by Rancho Los Alamitos and the surrounding gated community.

In 1974, the Keeper of the National Register found that three sites (P-19-000234, -235, and -306) qualified for the Register as contributors to the Puvunga Indian Village Sites Archaeological District as three undeveloped archaeological sites in Long Beach that are representative of the ancient village of Puvungna. The village of Puvungna and its sphere of influence, which would have included resource procurement areas and likely also dependent hamlets and even dependent villages, is generally considered to have occupied the region surrounding the historic Rancho Los Alamitos Ranch House and the CSULB main campus. Site P-19-00035,

encompassing approximately 22.4 acres within the northwest portion of the CSULB main campus, west of Determination Drive, is considered by some tribes as the only part of Puvungna that remains undeveloped. On May 22, 1982, the NRHP listed an increased boundary for P-19-000235.

In 1993 CSULB initiated plans to develop part of P-19-000235 west of Determination Drive (formerly Earl Warren Drive). A Juaneño woman named Lillian Valenzuela Robles became one of the leaders in the opposition to construction and shaped ceremonial practice at Puvungna as it exists today. Robles and her supporters' actions generated considerable scholarly and public discourse. Not all Native Americans believed P-19-000235 and Puvunga Indian Village Sites Archaeological District was sacred in the same way as Robles, and even the individual tribes (e.g., Chumash, Gabrielino, Juaneño, and Luiseño) were not united within themselves, but her vision has had significant impact among these tribes and others.

CSULB abandoned plans to develop the undeveloped portion of P-19-000235 at the northwest border of the CSULB main campus in 1995. In 1997, Robles initiated the Ancestor Walk—a multi-county vehicular pilgrimage visiting several sites in San Diego, Orange, and Los Angeles Counties culminating at the undeveloped land on the northwest border of the CSULB main campus. Later, she invited Bear Dancers to perform the Bear Dance at the conclusion of the Ancestor Walk. The site has maintained this importance to tribes, with the annual Ancestor Walk and Bear Dance traditions, which have solidified the importance of the site to local Native American tribes and individuals, signifying the development of an apparent pan-tribal religious movement. This importance is still recognized today by the tribal community, including those who participated in the original movement and their descendants.

Today, those who take part in the Ancestor Walk pilgrimage and the Bear Dance include not only Juaneño and Gabrielino, but also many Native Americans from other tribal backgrounds. Their numbers include other California Native Americans and even include those whose tribal origins lay outside California. An estimated 500 people attended the Ancestor Walk and Bear Dance in 2019. The Ancestor Walk was held at P-19-000235 for the 26th consecutive year in 2022.

Restricted Parcel

The northwestern portion of the CSULB campus, of which a portion is the tribal and historic site known as Puvungna is actively used for tribal ceremonies and gatherings. Per the Settlement Agreement, a restrictive covenant prohibiting development has been established on a large portion of this site (Restricted Parcel) and is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management.

3.12.3 Methodology

Tribal cultural resources are defined by and in consultation with tribal representatives. Tribal consultation was formally initiated in April 2022 and concluded in August 2023, as is further discussed below under the AB 52 Consultation section. The analysis of impacts to tribal cultural resources is based on the consultation between CSULB and the responding Tribes, information provided by the Tribes, and the Confidential Archaeological Resources Technical Report (Confidential Appendix F).

AB 52 requires that public agencies avoid damaging effects to any tribal cultural resource when feasible, and as such the preferred mitigation is avoidance and preservation in place. If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource and measures are not otherwise identified in the consultation process provided in PRC

Section 21080.3.2, the following under PRC Section 21084.3 are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

(1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

Sacred Land Files Search

The NAHC maintains a confidential Sacred Lands File (SLF) which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted to request a search of the SLF. The NAHC responded to the request in a letter dated January 4, 2022, indicating that the SLF search was positive. The letter recommended that Native American groups be contacted for additional information regarding known and recorded sites.

Known Tribal Cultural Resources

A portion of the NRHP and CRHR listed site P-19-000234 and P-19-000235, which are contributors to the Puvunga Indian Village Sites Archaeological District, has been determined to constitute a tribal cultural resource under CEQA. Puvungna is also of known importance to Tribes, and is determined by CSULB, in its discretion as the Lead Agency, to be a Tribal Cultural Resource pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.

Development on the Restricted Parcel which is part of the National Register-listed Puvunga Indian Village Sites Archaeological District and is listed in the Native American Heritage Commission's Sacred Lands Inventory is prohibited. The Restricted Parcel is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management. No projects or development under the Master Plan Update would occur on the Restricted Parcel, including to any ceremonial features.

Additionally, P-19-000234 and P-19-000235 are tribal cultural resources and are listed in the NAHC's Sacred Lands Inventory. Additionally, as discussed in Section 3.4, Cultural Resources, there are seven resources that are potentially eligible archaeological resources within the CSULB main campus. Of the seven resources that are treated as eligible, five resources located on the

CSULB main campus have yielded significant information regarding the prehistory of California and appear to be eligible for inclusion in the CRHR. They are: P-19-000705, P-19-001000, P-19-002616, P-19-002629, and P-19-002630. The resources have not been formally evaluated but are potentially eligible for inclusion in the CRHR under Criterion 4. The other two resources, P-19-120042 and P-19-120043, located on the CSULB main campus were documented as midden traces but have not been investigated to determine their potential eligibility for inclusion in the CRHR. The resources have not been formally evaluated but are potentially eligible for inclusion in the CRHR under Criterion 4. They are treated as potentially eligible for inclusion in the CRHR for purposes of this analysis, and thus, are also considered potential tribal cultural resources for the purposes of CEQA.

No eligible or potentially eligible historical resources or tribal cultural resources have been identified within the Beachside Village property.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to tribal cultural resources are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to tribal cultural resources if it would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)); or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.12.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of development over a multi-year planning horizon for the CSULB campus. For the project-level analysis, near- and mid-term development projects that would be implemented under the Master Plan Update are analyzed.

TCR-1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Program-Level Analysis for Master Plan Update

Construction

Sites P-19-000234 and P-19-000235, located on the CSULB main campus, are listed on the NRHP as contributing resources to the Puvunga Indian Village Sites Archaeological District. Resources that are listed in the NRHP are automatically listed in the CRHR. Additionally, there are seven resources (P-19-000705, P-19-001000, P-19-002616, P-19-002629, P-19-002630, P-19-120042, and P-19-120043) that are potentially eligible archaeological sites that could contain resources that are determined to be tribal cultural resources in consultation with the tribes, within the CSULB main campus.

Implementation of the Master Plan Update would include renovation of existing buildings (renovation), demolition and replacement of existing buildings in the same physical locations (replacement), construction of new buildings (new construction), and leaving buildings in their existing location and configuration (building to remain). Any renovation, replacement, or new construction project that would require ground-disturbing activities within the boundary of a known or unknown archaeological site that could contain resources that are determined to be tribal cultural resources, and therefore, could result in a potentially significant impact to the resource. Examples of such "ground-disturbing activities" are defined for the purposes of this analysis to include the following: equipment and materials staging, stockpiling, storage, placement of temporary structures including construction trailers, gravelling, geotechnical boring, clearing and grubbing including vegetation or tree removal, grading, project-specific exploratory ground-disturbance, compaction, boring, excavating including hydrovac, digging, trenching, rig anchor installation, drilling, tunneling, auguring, blasting, topsoil stripping, land leveling, driving a ground rod, and installing fence posts. These construction activities could result in potentially significant impacts to tribal cultural resources.

As discussed in Section 3.12.3, Environmental Setting, per the Settlement Agreement, no projects or development under the Master Plan Update shall occur on the Restricted Parcel, a portion of the Puvunga Indian Village Sites Archaeological District in the northwestern portion of campus. This prohibition extends to any activities that could affect ceremonial features. However, the boundaries of contributing Sites P-19-000234 and P-19-000235 extend past the boundaries of the Restricted Parcel. Implementation of the Master Plan Update may overlap with portions of Sites P-19-000234 and P-19-000235 outside of the Restricted Parcel, resulting in a potentially significant impact. Adherence to Mitigation Measures TCR-A through TCR-C and AR-A would be required, and AR-I, as applicable (refer to Section 3.12, Cultural Resources).

Mitigation Measure TCR-A would require a Worker Environmental Awareness Program (WEAP) be conducted prior to the start of construction to inform the construction crew of tribal cultural resource's values involved and procedures relating to the discovery of unanticipated resources that require evaluation as potential tribal cultural resources. Mitigation Measure TCR-B would require Native American monitoring within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary and at the discretion

of the qualified archaeologist pursuant to Mitigation Measure AR-A (refer to Section 3.12, Cultural Resources). Mitigation Measure TCR-C would govern the treatment of tribal cultural resources, if they are identified, which would include preparation of a Treatment Plan in accordance with Mitigation Measure AR-I (refer to Section 3.12, Cultural Resources) and allow tribes an opportunity to comment on the plan. Implementation of Mitigation Measures TCR-A through TCR-C would reduce impacts to listed and eligible tribal cultural resources to less than significant.

Operation

Operation of the improvements associated with the Master Plan Update would include routine landscape maintenance and other maintenance and operational activities (i.e., mowing; above-ground tree trimming and tree maintenance; aerating turf fields; setting up bleachers on the athletic fields; repairing existing irrigation lines; parking, staging, and stockpiling on paved surfaces; and pest and rodent control activities) that would not require ground-disturbing activities that have the potential to impact tribal cultural resources. Therefore, no impacts associated with operation of the Master Plan Update would occur to tribal cultural resources.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

Of the near- and mid-term individual development projects included in Table 2-11 in Chapter 2, Project Description, eight overlap (occur partially within the boundaries of) known tribal cultural resources or potentially eligible archaeological resources that could be determined to be tribal cultural resources in consultation with the tribes. The individual development projects that overlap significant or potentially significant archaeological sites are listed below in Table 3.12-1.

Table 3.12-1: Individual Development Projects that Overlap with Known Potentially Significant Archaeological Sites

Project Name	Type of Project	Overlapping Potentially Significant Resources	Phase
East			
Engineering Replacement Building	Replacement	P-19-002616	Near
Faculty and Staff Housing	New	P-19-002616	Near
North			
Aquatics Center and Pool Renovation	Replacement	P-19-001000	Near
Jack Rose Track/Commencement Facilities	Renovation	P-19-002630	Mid
Baseball Field Conversion to Multi-Use Field	Renovation	P-19-002630	Mid
West			
Hillside College Renovations/Addition	Renovation	P-19-120043; P-19-002629; P-19-000234/235	Near
Improved Campus Entrance and Gateway	Renovation	P-19-000234/235	Near
Central/West/South			
Pedestrian/Bike Lane Improvements	Renovation	P-19-000234/235	Mid

No impacts to resources P-19-000705 and P-19-120042 would occur as the Master Plan Update does not propose individual development projects requiring ground-disturbing activities in these locations. As shown in Table 3.12-1, the Hillside College Renovations/Addition, Improved Campus Entrance and Gateway, and Pedestrian/Bike Lane Improvements would occur within the boundaries of the Puvunga Indian Village Sites Archaeological District but outside of the boundaries of the Restricted Parcel, and would be limited to interior renovations for the Hillside College Renovations/Addition project; replacement of existing pavement, changing out the letters on the existing entrance sign, and landscaping for the Improved Campus Entrance and Gateway; and replacement of existing pavement for Pedestrian and Bike Lane Improvements project. To minimize and/or avoid impacts to the Puvunga Indian Village Sites Archaeological District, Mitigation Measures TCR-A through TCR-C would be implemented.

The remaining individual development projects listed in Table 3.12-1 also have the potential to include ground-disturbing activities. Any ground-disturbing activities that impact previously undisturbed sediments on these individual project sites have the potential to impact buried archaeological resources that could be determined to be tribal cultural resources and reduce their eligibility for inclusion in the CRHR. Therefore, individual development projects requiring ground-disturbing activities within potentially significant tribal cultural resources could result in a significant impact, and Mitigation Measures TCR-A through TCR-C would be required. With implementation of these mitigation measures, impacts to potentially significant tribal cultural resources would be less than significant.

For individual development projects requiring ground-disturbing activities that would occur *outside* of the boundaries of known archaeological resources that could be tribal cultural resources, TCR-A and TCR-C would be required. TCR-C for Native American monitoring would be implemented at the discretion of the qualified archaeologist, in accordance with Mitigation Measure AR-A (refer to Section 3.4, Cultural Resources). With implementation of these mitigation measures, impacts to potentially eligible tribal cultural resources would be less than significant.

As in the program-level analysis, impacts to tribal cultural resources resulting from the near-term and mid-term projects would be reduced to a less than significant level with the implementation of Mitigation Measures TCR-A through TCR-C.

Operation

Similar to under the program-level analysis, operation of the individual development projects would not require any additional ground-disturbing activities beyond routine landscape maintenance and other maintenance and operational activities (i.e., mowing; above-ground tree trimming and tree maintenance; aerating turf fields; setting up bleachers on the athletic fields; repairing existing irrigation lines; parking, staging, and stockpiling on paved surfaces; and pest and rodent control activities) that could impact known or unknown tribal cultural resources on the CSULB main campus. Therefore, no impact to tribal cultural resources would occur as the result of project operation.

TCR-2 Would the project the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Program-Level Analysis for Master Plan Update

As discussed under threshold TCR-1, sites P-19-000234 and P-19-000235 are listed on the NRHP as contributing resources to the Puvunga Indian Village Sites Archaeological District and listed in the NAHC's Sacred Lands Inventory. Puvungna is often associated with the place of creation and the scene of important activities by several culture heroes or gods. Puvungna is also the site of cultural change and innovation with the introduction of the Ancestor Walk in 1997. The site has maintained this importance to tribes, with the annual Ancestor Walk and Bear Dance traditions, which have solidified the importance of the site to local Native American tribes and individuals, signifying the development of an apparent pan-tribal religious movement. This importance is still recognized today by the tribal community, including those who participated in the original movement and their descendants. Today, those who take part in the Ancestor Walk pilgrimage and the Bear Dance include not only Juaneño and Gabrielino but many Native Americans from other tribal backgrounds as well.

A portion of the Puvunga Indian Village Sites Archaeological District is actively used for ceremonies by Native American groups. Development on the Restricted Parcel is prohibited. The Restricted Parcel is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management. Ceremonial features that exist at the site would not be impacted by implementation of the Master Plan Update. As discussed under threshold TCR-1, no impacts would occur to the Restricted Parcel, including to any ceremonial features.

Additionally, as required by AB 52, CSULB contacted representatives of eight tribes with a letter invitation for consultation e-mailed on April 21, 2022. To date, three of the tribes have requested further consultation under AB 52. Through the course of consultation, tribes have had the opportunity to review the Draft Archaeological Resources Technical Report prepared for the proposed project (Appendix F) and draft mitigation measures for tribal cultural resources, which were sent to the representatives of the eight tribes on July 17, 2023. No additional tribal cultural resources have been identified through the course of AB 52 consultation as of the writing of this Draft EIR. Nonetheless, Mitigation Measures TCR-A through TCR-C would be implemented to minimize any impacts to unknown tribal cultural resources. Therefore, impacts related to a substantial adverse change in the significance of a tribal cultural resource would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

As discussed under threshold TCR-1, the Hillside College Renovations/Addition, Improved Campus Entrance and Gateway, and Pedestrian/Bike Lane Improvements would occur outside the boundaries of the Restricted Parcel and would not impact the portion of the Puvunga Indian Village Sites Archaeological District that is a known tribal cultural resource. Ceremonial features

that exist at the site would not be impacted by implementation of the individual development projects. As no additional tribal cultural resources have been identified as of the writing of this Draft EIR, no other individual development projects are anticipated to impact tribal cultural resources. Therefore, impacts related to a substantial adverse change in the significance of a tribal cultural resource would be less than significant.

3.12.5 Mitigation Measures

The following mitigation measures would reduce impacts to known and unknown tribal cultural resources and apply to projects on campus that would require ground-disturbing activities. Examples of such ground-disturbing activities include the following:

- Equipment and materials staging
- Stockpiling
- Storage
- Placement of temporary structures including construction trailers
- Gravelling
- Geotechnical boring
- Clearing and grubbing, including vegetation or tree removal
- Grading
- Project-specific exploratory ground-disturbance
- Compaction
- Boring
- Excavating, including hydrovac
- Digging
- Trenching
- Rig anchor installation
- Drilling
- Tunneling
- Auguring
- Blasting
- Topsoil stripping
- Land leveling
- Driving a ground rod
- Installing fence posts

The following mitigation measures would not be applicable to routine landscape maintenance and other maintenance and operational activities. Examples of excluded maintenance and operational activities include the following:

- Mowing
- Above-ground tree trimming and tree maintenance
- Aerating the turf fields
- Setting up bleachers on the athletic fields
- Repairing existing irrigation lines
- Parking, staging, and stockpiling on paved surfaces
- Pest and rodent control activities

TCR-A Worker Environmental Awareness Program for Tribal Cultural Resources

Due to the potential to encounter unanticipated resources, prior to the beginning of ground-disturbing activities by the construction crew, the construction crew associated with ground-disturbing activities shall be informed of the tribal cultural resource's values involved and of the regulatory protections afforded those resources. The crew shall also be informed of procedures relating to the discovery of unanticipated resources that require evaluation as potential tribal cultural resources.

The crew shall be cautioned not to collect artifacts, and directed to inform a construction supervisor and the onsite Native American monitor in the event that tribal cultural resources are discovered during the course of construction.

The initial training shall be conducted by the on-site Native American monitor and can be incorporated into the project's construction safety training or in conjunction with the Worker Environmental Awareness Program for Archaeological Resources in accordance with Mitigation Measure AR-C. A supplemental briefing shall be provided to all new construction personnel that are associated with ground-disturbing activities, and may consist of reviewing presentation slides or viewing a recording.

TCR-B Native American Monitoring

This mitigation measure shall apply to projects requiring ground-disturbing activities located within known listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary, including for ground-disturbing activities conducted by an archaeologist.

This mitigation measure shall also apply, at the discretion of the qualified archaeologist pursuant to Mitigation Measure AR-A (Initial Project Review), for projects located in unknown/ineligible archaeological sites on campus requiring ground-disturbing activities.

Due to the potential to encounter unanticipated resources, Native American monitoring shall be conducted by a qualified Native American monitor representing the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus.

To preserve the integrity of the tribal consultation process, archaeological support services, including monitoring, shall be provided by an entity separate and distinct from that providing Native American support services. The tribal cultural monitor shall observe ground-disturbing activities, maintain logs of all activities monitored, and will make documentation available to CSULB and all consulting Native American parties who request a record of the logs.

The log shall contain at a minimum:

- A brief description of the locations and activities monitored;
- A description of tribal cultural resources encountered; and
- A description of the treatment of those resources.

  The logs shall be compiled and submitted to CSULB within 4 weeks of the completion of monitoring.

TCR-C Treatment of Tribal Cultural Resources

This mitigation measure applies to projects located within listed/potentially eligible archaeological sites on campus and/or a 25-foot radius of the known archaeological site boundary.

If a significant tribal cultural resource, as defined by Public Resources Code Section 21074, is identified within the project site, then prior to the beginning of the ground-disturbing activities within the documented boundaries of the resource or a 25-foot buffer:

- CSULB shall provide via e-mail a copy of the Treatment Plan prepared pursuant to Mitigation Measure AR-I to the tribe or tribes traditionally and culturally affiliated with the geographic area of the CSULB main campus as identified by the Native American Heritage Commission; and
- Tribes shall be offered an opportunity to comment within 7 days on the Treatment Plan developed that will govern the treatment of the resource.

Avoidance and preservation-in-place are the preferred treatment for tribal cultural resources, and the Treatment Plan will detail plans for avoidance, if possible, such as restricting work to disturbed soil or limiting the depth of excavations to avoid potential tribal cultural resources.

TCR-D Commemorative Sign

In consultation with the tribes consulting on this Master Plan Update and other interested Native American campus groups, the CSU shall design, create, and place in an appropriate conspicuous location a sign that shall commemorate the National Historic Register of Places and California Historical Place and California Register of Historical Resources listed site, Puvunga Indian Village Sites. In keeping with state law, no information regarding the archaeological site, artifacts, tribal cultural resources, or other confidential topics shall be included in the signage. No tribal government shall be given precedence in the signage over any other tribal government identified by the Native American Heritage Commission.

3.12.6 Level of Significance After Mitigation

Implementation of Mitigation Measures TCR-A through TCR-C would ensure that impacts to tribal cultural resources would be less than significant during construction activities. Implementation of Mitigation Measure TCR-D would ensure that impacts to tribal cultural resources would not be cumulatively considerable.

3.12.7 Cumulative Impacts

As discussed above, improvements associated with the Master Plan Update would result in less than significant impacts to tribal cultural resources with the implementation of Mitigation Measures TCR-A through TCR-C. These mitigation measures would ensure that the impact of the development of the Master Plan Update, in conjunction with the related projects, would not be cumulatively considerable. Additionally, related projects in the vicinity would also be required to comply with applicable state, federal, and local regulations concerning tribal cultural resources and conduct AB 52.

Specifically, development of the Master Plan Update would not impact any portion of the Puvunga Indian Village Sites Archaeological District that is within the Restricted Parcel. Development on the Restricted Parcel is prohibited, and the Restricted Parcel is held in reserve for the future establishment of a permanent conservation easement for its perpetual protection and management. Additionally, no other tribal cultural resources have been identified through the course of AB 52 consultation.

Nonetheless, to commemorate the cultural importance of Puvungna to the tribes and solidify the importance of the Puvunga Indian Village Sites Archaeological District to the university, Mitigation Measure TCR-D would be implemented. Mitigation Measure TCR-D would require the CSU design, create, and place in an appropriate conspicuous location a sign that would commemorate the NRHP-, California Historical Place-, and CRHR-listed site, Puvunga Indian Village Sites.

Therefore, the Master Plan Update would not result in cumulatively considerable impacts to tribal cultural resources.

3.13 UTILITIES AND ENERGY

This section analyzes the adequacy of existing and planned utilities to accommodate the demands and generation associated with implementation of the Master Plan Update. Specifically, this section addresses existing and future water supply, wastewater treatment, solid waste disposal, and energy facilities. In addition, this section evaluates the potential energy consumption resulting from implementation of the Master Plan Update as well as regulatory requirements pertaining to utility systems and energy resources. The analysis describes potential direct and indirect impacts from implementation of the Master Plan Update. This section is based, in part, on the Utility Infrastructure Master Plan Update and the Water Supply Information Report prepared for the Master Plan Update, included as Appendix I.

Comments from the Los Angeles County Sanitation Districts (LACSD) were received during the public scoping period in response to the NOP. These comments address the project's potential impacts on LACSD's wastewater service and the local sewer system. For a complete list of public comments received during the public scoping period, refer to Appendix A.

3.13.1 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) employs a variety of regulatory and nonregulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The U.S. Environmental Protection Agency (EPA) established primary drinking water standards in Section 304 of the CWA. States are required to ensure that the public's potable water meets these standards.

Section 402 of the CWA created the National Pollutant Discharge Elimination System (NPDES) regulatory program, which regulates point sources that discharge pollutants into waters of the United States. Point source dischargers must obtain a discharge permit from the proper authority (usually a state, sometimes EPA, a tribe, or a territory). The NPDES permits cover various industrial and municipal discharges, including discharges from storm sewer systems in larger cities, storm water associated with numerous kinds of industrial activity, runoff from construction sites disturbing more than one acre, and mining operations. "Indirect" dischargers send wastewater into a public sewer system, which carries it to the municipal sewage treatment plant before entering a surface water, and are not required to obtain NPDES permits.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act passed in 1974, the EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA standards called maximum contaminant levels (MCLs). Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. The EPA has delegated responsibility for California's drinking water program to the State Water Resources Control Board (SWRCB) Division of Drinking Water. The SWRCB Division of Drinking Water is accountable to the EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by the EPA.

Energy Independence and Security Act

On December 19, 2007, the Energy Independence and Security Act (EISA) of 2007 (Public Law

110-140) was signed into law. In addition to setting more stringent Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) Program
- Appliance and Lighting Efficiency Standards
- Building Energy Efficiency

This federal legislation (the RFS) requires ever-increasing levels of renewable fuels to replace petroleum. The 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 (42 United States Code § 13201 et seq.) 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 to lay the foundation for achieving significant reductions in greenhouse gas (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:

- Expands the RFS program to include diesel, in addition to gasoline
- Increases the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022
- Establishes new categories of renewable fuel, and sets separate volume requirements for each one
- Requires 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.

State

California Fire Code

The 2022 California Fire Code, which is codified as Part 9 of Title 24 of the California Code of Regulations, incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every three years by the California Building Standards Commission.

Senate Bill 610

Under Senate Bill (SB) 610, a water supply assessment is required to determine water supply sufficiency for a 20-year projection in addition to the demand of existing and other planned future uses. SB 610 applies only to cities and counties and is required for any project that is subject to CEQA and proposes commercial development of more than 250,000 square feet of floor space, a retail center with more than 500,000 square feet of floor space, or more than 500 dwelling units. The CSU and its campuses do not meet the definition of a city or county under SB 610, although campus projects are subject to CEQA. Nonetheless, recent and continuing precipitation trends and water supply uncertainty have heightened concerns about the future availability of a reliable water supply, and the provisions of SB 610 provide useful guidance in preparing a water supply assessment.

California's Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 is the result of two pieces of legislation: Assembly Bill (AB) 939 and SB 1322. The California Integrated Waste Management Act was intended to minimize the amount of solid waste that must be disposed of through transformation and land disposal by requiring all cities and counties to divert 25 percent of all solid waste from landfill facilities by January 1, 1995, and 50 percent by January 1, 2000. The 50 percent diversion requirement is measured in terms of per capita disposal expressed as pounds per day per resident and per employee. The per capita disposal and goal measurement system uses an actual disposal measurement based on population and disposal rates reported by disposal facilities, and it evaluates program implementation efforts. The California Integrated Waste Management Act also created the California Integrated Waste Management Board, now known as the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle is the designated agency that oversees, manages, and tracks California's 92 million tons of waste generated each year. CalRecycle promotes the use of new technologies to divert resources away from landfills and is responsible for ensuring that waste management programs are carried out primarily through local enforcement agencies.

Assembly Bill 341

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program which focuses on increased commercial waste diversion as a method to reduce GHG emissions. AB 341 requires CalRecycle to issue a report to the legislature that includes strategies and recommendations that would enable the state to recycle 75 percent of the solid waste generated in the state by January 1, 2020, requires businesses that meet specified thresholds in the bill to arrange for recycling services by July 1, 2012, and also streamlines various regulatory processes.

Senate Bill 1383

SB 1383 establishes targets to achieve a 50 percent reduction in the volume of statewide disposal of organic waste from 2014 levels by 2020 and a 75 percent reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025. To meet these goals, universities would be required to divert organic waste, including edible food, from disposal at landfills.

Warren–Alquist Act

The California State legislature passed the Warren–Alquist Act in 1974. The Warren–Alquist Act (Public Resources Code § 25000 et seq.) created the California Energy Commission (CEC) in response to the energy crisis of the early 1970s and the state's growing demand for energy

resources. The legislation also incorporated the following three key provisions to address energy demand:

- Directed the CEC to formulate and adopt the nation's first energy conservation standards for buildings constructed and appliances sold in California.
- 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.
- Directed the CEC to embark on an ambitious research and development program, with a particular focus on fostering nonconventional energy sources.

Renewables Portfolio Standard

SB 1078 (2002) 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. Renewable energy is generally defined as energy that comes from resources which are naturally replenished within a human timescale such as sunlight, wind, tides, waves, and geothermal heat. 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 Program by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) required all California utilities to generate 33 percent of their electricity from eligible renewable energy resources by 2020. SB 350 (2015) further expanded the RPS Program by requiring retail sellers 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.

Senate Bill 100

The 100 Percent Clean Energy Act of 2018 (SB 100) accelerated and expanded the standards set forth in SB 350 and requires retail sellers and local publicly owned electric utilities to procure a minimum quantity of electricity products from eligible renewable energy resources so that the total kilowatt-hours of those products sold to their retail end-use customers achieve 44 percent of retail sales by December 31, 2024; 52 percent by December 31, 2027; 60 percent by December 31, 2030; and 100 percent by December 31, 2045. The bill requires the California Public Utilities Commission (CPUC), CEC, and California Air Resources Board (CARB) to incorporate the policy into all relevant planning. In addition, SB 100 requires the CPUC, CEC, and CARB to utilize programs authorized under existing statutes to achieve 100 percent clean electricity and, as part of a public process, issue a joint report to the legislature by January 1, 2021, and every four years thereafter, that includes specified information relating to the implementation of SB 100.

Assembly Bill 1007

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 CARB and in consultation with the other federal, state, 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

California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, §§ 38500-38599), which establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020.

Senate Bill 32

SB 32 (2016) codifies the 2030 GHG emissions reduction target in Executive Order B-30-15 (which extended the horizon year to reduce GHG emissions to 40 percent below 1990 levels from 2020 to 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

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 focus 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. CARB prepared the 2022 Scoping Plan for Achieving Carbon Neutrality, which provides a plan of action to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045.

California Building Standards (Title 24)

In 1978, the CEC established the Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as Title 24, California's energy efficiency standards for residential and nonresidential buildings, in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2022 Title 24 standards encourage efficient electric heat pumps, establish electric-ready requirements for new homes, expand solar photovoltaic and battery storage standards, and strengthen ventilation standards. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Title 24 standards.

Additionally, the California Green Building Standards Code (CALGreen) (California Code of Regulations, Title 24, Part 11) is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. CALGreen standards require new residential and commercial buildings to comply with mandatory measures under five topical areas: planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt which encourage or require additional measures in the five green building topics. CALGreen requires new buildings to reduce water consumption by 20 percent,

divert 50 percent of construction waste from landfills, and install low pollutant-emitting materials.

State Vehicle Standards

In a response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002 (California Health and Safety Code § 43018.5 and § 42823 amendments). AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the CARB to be vehicles whose primary use is 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. The 2009–2012 standards resulted in a reduction of 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 and requirements for greater numbers of zero-emission 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.

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. As codified in California Government Code § 65080, SB 375 requires metropolitan planning organizations to include a sustainable communities strategy in their regional transportation plans. The main focus of the sustainable communities strategy is to plan for growth in a way that will ultimately reduce GHG emissions, but the strategy is also a part of a bigger effort to address other development issues within the general vicinity, including transit and vehicle miles traveled, which influence the consumption of petroleum-based fuels.

California Public Utilities Commission Energy Efficiency Strategic Plan

The CPUC prepared an Energy Efficiency Strategic Plan in September 2008 with the goal of promoting energy efficiency and a reduction in GHG emissions. The Strategic Plan is California's single roadmap to achieving maximum energy savings in the state between 2009 and 2020, and beyond 2020. The Strategic Plan is the result of a year-long collaboration by energy experts, utilities, businesses, consumer groups, and governmental organizations in California, throughout the west, nationally, and internationally, and contains the practical strategies and actions to attain significant statewide energy savings. The plan includes the following strategies:

- All new residential construction in California will be zero net energy by 2020;
- All new commercial construction in California will be zero net energy by 2030;
- Heating, ventilation and air condition (HVAC) will be transformed to ensure that its energy performance is optimal for California's climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

California Energy Commission Integrated Energy Policy Report

In 2002, the California State legislature adopted SB 1389, which requires the CEC to develop an *Integrated Energy Policy Report* (IEPR) every two years. SB 1389 requires the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices, and use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.

The CEC adopted the *2021 Integrated Energy Policy Report* (2021 IEPR) Volume I on April 2, 2022, Volume II and IV on April 17, 2022, and Volume III on March 9, 2022. The 2022 IEPR Update was adopted on February 28, 2023. Volume I focuses on building decarbonization; Volume II looks at ensuring reliability in a changing climate; and Volume III reports on decarbonizing the state's gas systems; and Volume 4 focuses on California's energy demand forecast. The 2021 IEPR Update provides the results of the CEC's assessments of a variety of energy issues facing California, many of which will require action if the state is to meet its climate, energy, air quality, and other environmental goals while maintaining reliability and controlling costs. Overall, the recent IEPRs identifies actions the state and others can take that would strengthen energy resiliency, reduce GHG emissions that contribute to climate change, improve air quality, and contribute to a more equitable future.

California State University

California State University, Long Beach Utility Master Plan Update

The Utility Master Plan Update evaluates the existing utilities currently serving the CSULB campus and provides recommendations to alter, upgrade, or modify the existing utility infrastructure to support the facilities proposed as part of the Master Plan Update. The plan also identifies critical needs for each of the utilities that need to be addressed to minimize interruptions and promote reliability and redundancy. The plan evaluates domestic and fire water, sewer, storm drain, irrigation water, chilled and hot water distribution, natural gas, and electrical and telecommunication systems within the campus. Each utility is evaluated for capacity, functionality, reliability, ease of maintenance, age, and ability to serve the existing and future needs of the campus.

California State University, Long Beach Water Action Plan

In 2014, CSULB developed a CSULB Water Action Plan in response to a State of Emergency due to severe drought conditions. The CSULB Water Action Plan was updated in 2017 and includes the CSU's mandate to reduce water consumption by 10 percent by 2016 and 20 percent by 2020 from its 2013 baseline.[1] Based on the plan, CSULB's goals are to reduce its reliance on potable water and overall campus water use. The plan seeks to meet these goals through adopting and implementing new Best Management Practices for all campus operations, such as installing irrigation water meters, developing a communication plan to encourage campuswide water conservation, and planning future campus development for water resiliency.

California State University, Long Beach Water Conservations Measures

In response to severe and ongoing drought conditions in California, the Long Beach Board of Water Commissioners declared a Stage 2 Water Supply Shortage in May 2022. The Long Beach

[1] The California State University has since updated its policy for water conservation such that consumption shall be reduced by 10 percent by 2030 compared to a 2019 baseline.

Water Department (LBWD) issued the following water use restrictions to which CSULB has taken the necessary steps to comply:

- Water landscape on Tuesdays and Saturdays only;
- Water landscape no more than 10 minutes per day if using standard nozzle;
- Water landscape no more than 20 minutes per day if using water-efficiency rotating nozzles;
- Water only before 9AM or after 4PM;
- Do not water during or 48 hours after rainfall;
- Wash hardscape with pressurized cleaning equipment only;
- No operating a foundation or water feature that does not recirculate water; and
- Cover pools and spas when not in use.

Other water conservation efforts by the campus include implementation of the:

1. Irrigation Water Savings Program, which was incorporated in the 2022 Climate Action & Adaptation Plan (CAAP), targeted at converting all landscape irrigation spray nozzles to more efficient matched precipitation rotators and completing the expansion of the purple pipe network of reclaimed water across the entire campus.
2. Landscape Master Plan, which includes turf reduction, plant palette transition, and stormwater treatment, and is intended to reduce potable water consumption.
3. Strategic Energy Plan, which includes the reduction of chilled water and hot water usage.
4. Systemwide policies such as CSU Executive Order 0987 (Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University), 2022 CSU Sustainability Policy related to water conservation, and CSULB drought response to the Long Beach Board of Water Commissioners declaration on water supply shortage.

California State University Sustainability Policy

The CSU has identified sustainability as a system-wide priority, as detailed in the CSU Sustainability Policy, which was first adopted in 2014 and updated in March 2022. The CSU Sustainability Policy encompasses the tenets of human and ecological health, social justice, and economic vitality, and promotes the environmental sustainability of the CSU's operations for the built environment.[2] The policy is organized into the following areas:

- University Sustainability – The CSU will integrate sustainability and climate literacy into the academic curriculum and all areas of the university; promote new and existing environmental and social justice programs; develop the green job workforce; promote the development of sustainable products and services; and foster sustainable economic development.
- Climate Action Plan – The CSU will strive to reduce systemwide facility carbon emissions to 40 percent below 1990 levels consistent with SB 32. These emissions will include both state and auxiliary organization purchases of electricity and natural gas; fleet and marine

[2] The California State University, PolicyStat, California State University Sustainability Policy, available at: https://calstate.policystat.com/policy/11699668/latest/#autoid-9wenv, accessed April 13, 2023.

vessel usage; and other emissions the university or self-support entity has direct control over. Additionally, the CSU will strive to reduce facility carbon emissions to 80 percent below 1990 levels by 2040 in order to achieve carbon neutrality by 2045 in accordance with statewide mandates.

- Energy Resilience and Procurement – The CSU will endeavor to reduce energy capacity requirements from fossil fuels, enhance electrical demand flexibility, and use available and economically feasible technology for on-site renewable generation, microgrids, and other fossil fuel-free energy storage solutions. The CSU aims to increase its self generated-renewable energy and battery capacity from 32 to 80 megawatts (MW) by 2030.

  Additionally, the CSU will consider cost-effective opportunities to exceed the California RPS sooner than the established goal of procuring 60 percent of its electricity needs from renewable sources by 2030 consistent with SB 100. To minimize the use of natural gas, universities will transition from fossil fuel-sourced equipment to electric equipment as replacements or renovations are needed.

- Energy Conservation, Carbon Reduction and Utility Management – All CSU buildings and facilities will be operated in the most energy-efficient manner and transition to a low carbon strategy without endangering public health and safety and without diminishing the quality of education and the academic program. The universities shall continue to identify energy-efficient and carbon reduction improvement measures to the greatest extent possible and coordinate with federal, state, and local governments and organizations in achieving energy conservation carbon reduction and utilities management objectives. The CSU will monitor monthly energy and utility usage on all campuses and the Chancellor's Office and will prepare a system-wide annual report on energy utilization and GHG emissions. Each CSU university will develop and maintain a campus-wide utility master plan to guide the overall climate action program, which will include an integrated strategic energy resource plan, with tactical recommendations in the areas of new construction, decarbonization, deferred maintenance, climate resilience, facility renewal, energy projects, water conservation, solid waste management, and an energy management plan.

- Water Conservation – All CSU universities shall pursue cost-effective water resource conservation to reduce consumption by 10 percent by 2030, as compared to a 2019 baseline, consistent with AB 1668 including steps to develop sustainable, drought-tolerant or native landscaping, reduce turf, install controls to optimize irrigation water use, reduce water usage, and promote the use of reclaimed/recycled water. In the event of a declaration of drought, the CSU will cooperate with the state, city, and county governments to the greatest extent possible to reduce water use.

- Sustainable Procurement – Universities will support the use of suppliers that integrate sustainable, environmentally friendly, and socially responsible practices, including encouraging those that recycle to move toward zero waste.

- Waste Management – Universities will aim to reduce landfill-bound waste to 50 percent of total campus waste by 2030, divert at least 80 percent from landfill by 2040, and move toward zero waste.

- Sustainable Food Service – Universities will improve their sustainable food purchases and operations.

- Sustainable Building & Lands Practices – All future CSU new construction, remodeling, renovation, and repair projects will be designed with consideration of optimum energy

utilization, decarbonization, and low life-cycle operating costs and shall exceed all applicable energy codes and regulations (Building Energy Efficiency Standards, Title 24 California Code of Regulations Section 6) by 10 percent. Regarding specialized construction that is not regulated through the current energy standards (e.g., historical buildings, museums, auditoriums), the CSU will ensure that these facilities are designed to maximize energy efficiency. The CSU will design and build all new buildings and major renovations to meet or exceed the minimum requirements equivalent to Leadership in Energy and Environmental Design (LEED) Silver. For informal or un-landscaped areas, and where appropriate, universities will work to support a naturally functioning habitat, promote biodiversity, and preserve native landscapes.

Capital planning for state and non-state facilities and infrastructure will consider features of a sustainable and durable design to achieve a low life-cycle cost. Universities will also design, construct, operate, and maintain green building-certified high-performing buildings that improve occupant productivity and wellness, optimize life-cycle costs, and minimize carbon impact. Principles and best practices will be implemented to the greatest extent possible.

Existing building energy performance will be optimized through improved operation, maintenance and repair, and capital improvement, enabling universities to meet carbon reduction goals. To balance long-term institutional needs with environmental concerns, sustainable design for capital projects will include:

- Siting and design considerations that take advantage of local geographic features to improve sustainability of the project, such as proximity to public transportation and maximizing use of vistas, microclimate, and prevailing winds;
- Durable systems and finishes with long life cycles that minimize maintenance and replacement;
- Optimization of layouts and designing spaces that can be reconfigured with the expectation that the facility will be renovated and reused (versus demolished);
- Systems designed for optimization of energy, water, and other natural resources;
- Optimization of indoor environmental quality for occupants;
- Utilization of environmentally preferable products and processes, such as long life-cycle materials and components, recycled-content and recyclable materials;
- Procedures that monitor, trend, and report operational performance as compared to the optimal design and operating parameters; and
- Cost-effective design features which align with the CSU Basic Needs Initiative and support university diversity, equity and inclusion efforts.

- Physical Plant Management – Each university will operate and maintain a comprehensive energy management system to achieve optimum efficiency in the use of natural gas, electricity, or any other purchased energy resources to meet the heating, cooling, and lighting needs of the buildings and/or facilities.
- Transportation – The CSU will encourage and promote the use of alternative transportation and/or alternative fuels to reduce GHG emissions related to campus associated transportation, including commuter and business travel. All CSU universities will develop and maintain a transportation demand management plan to reduce vehicle miles traveled (VMT) and carbon emissions; strive to increase electric vehicle, electric bicycle, and other electric mobility and transportation device charging infrastructure and

incentive programs to further support campus carbon reduction strategies; and develop and maintain a long-range plan for transitioning fleet and grounds equipment to zero emissions, excluding public safety patrol vehicles if necessary. By 2035, 50 percent of all light duty vehicle purchases will be zero emission vehicles, with no addition of gas-powered light-duty vehicles to the fleet after 2035. All small off-road engine equipment used for campus grounds will be all-electric by 2035. All buses and heavy duty-vehicles will be zero emission vehicles by 2045 in alignment with state regulations.

Additional CSU Policies

The Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University (formerly, Executive Order 987) provides a policy statement on energy conservation, sustainable building practices, and physical plant management for the CSU. CSULB operates under this Executive Order, which sets minimum efficiency standards for new construction and renovations, and establishes operating practices intended to ensure that CSU buildings are used in the most energy efficient and sustainable manner possible while still meeting the programmatic needs of the university.[3]

Policy 9170, Revised Policy on Energy Conservation and Utilities Management and Energy Consumption Reduction Goal for 2004/2005 Compared to 1999/2000 per the CSU standards set forth in PolicyStat, provides that all CSU buildings and facilities will be operated in the most energy-efficient manner without endangering public health and safety. The policy also indicates that all future CSU new construction, remodeling, renovation and repair projects will be designed for optimum energy utilization, lowest life-cycle operating costs, and in compliance with all applicable energy codes (Enhanced Title 24 Energy Codes) and regulations. Incorporation of energy-efficient design features in the project plans and specifications will be prioritized.[4]

California State University, Long Beach 2022 Climate Action and Adaptation Plan

CSULB is committed to promoting sustainability through campus operations, academic programs, and engagement efforts. The President's Commission on Sustainability was established in 2018 with the mission of integrating sustainability into all aspects of the university by focusing on the following priority areas: implementing the CAAP, integrating sustainability throughout the curriculum, and engaging and communicating with the community. CSULB's CAAP is required to meet the CSULB President's Climate Commitment, a charter of the Climate Leadership Network which integrates carbon neutrality with climate resilience and is designed to serve as a roadmap for managers and decision-makers across the university to achieve 2030 and 2040 carbon neutrality goals.[5] It builds on the significant efforts CSULB has already undertaken to maximize energy efficiency, increase renewable energy production, support clean air vehicle adoption, embrace green building standards, and integrate sustainability and environmental justice across the curriculum. The CAAP is focused specifically on addressing Scope 1, 2, and 3 emissions, which are overwhelmingly created by transportation to and from campus (60 percent), the need

[3] The California State University, PolicyStat, Executive Order 0987: Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University, available at: https://calstate.policystat.com/policy/6589455/latest, accessed July 24, 2023.

[4] The California State University, PolicyStat, Section IX: Energy Conservation and Utilities Management, Section 9170, Revised Policy on Energy Conservation and Utilities Management and Energy Consumption Reduction Goal for 2004/2005 Compared to 1999/2000, available at: https://calstate.policystat.com/policy/7056253/latest, accessed July 24, 2023.

[5] California State University, Long Beach, Plans & Commitments, available at: https://www.csulb.edu/sustainability/plans-commitments#:~:text=As%20a%20Carbon%20Commitment%20signatory,on%20Climate%20Action%20Plan%20implementation, accessed April 6, 2023.

to heat, cool, and power campus facilities via purchased electricity (17 percent), and combustion of natural gas (11 percent), respectively.

California State University, Long Beach Clean Energy Master Plan

In 2017, CSULB developed a Clean Energy Master Plan, which provides a strategic roadmap for GHG emission mitigation measures to reduce CSULB's Scope 1 and 2 emissions, drive operational savings, and improve campus facilities and infrastructure. The Clean Energy Master Plan helps guide CSULB's energy strategy as the university works toward becoming carbon neutral by 2030. The plan includes a robust assessment of campus energy sources, demands, and utilization to identify clean energy alternatives and strategies to improve the efficiency of campus operations.

California State University, Long Beach Strategic Energy Plan

A comprehensive Strategic Energy Plan was prepared in 2011 that identifies energy efficiency projects, evaluates the provision of alternative energy sources at the campus, and analyzes their contribution to help the university reduce energy consumption and associated GHG emissions.

3.13.2 Environmental Setting

Utilities

The CSULB main campus and Beachside Village property are served by the following utilities: water (including reclaimed water), wastewater (i.e., sewer), stormwater, natural gas, electrical, telecommunications systems, and solid waste, which are further described below.

Water

The campus's combined domestic and fire water system is solely served by the LBWD. LBWD receives its drinking (potable) water supply from two main sources, groundwater and imported water. Roughly 60 percent of LBWD's water supply is sourced from local groundwater, while the rest of the water supply is sourced from imported water from the Colorado River and Northern California's Bay Delta region. The Metropolitan Water District of Southern California (MWD), LBWD's water wholesaler, is responsible for bringing these imported water sources into Southern California.[6]

LBWD provides domestic and fire water to the main campus through LBWD mains located in the streets that border the campus. There are water meters of various sizes located throughout the campus that connect the LBWD mains to the water lines to form four networks. The majority of the campus is connected to the main campus loop (Network #1), which is comprised of several 6-inch and 8-inch sub-loops that connect to various LBWD mains in Atherton Drive, Bellflower Boulevard, State University Drive, 7th Street, and Palo Verde Avenue. The area around Parkside Village is served by an 8-inch loop (Network #2) that connects to the 12-inch LBWD main in Atherton Street. Two individual buildings, Child Development Center (CDC) and Housing & Residential Life (HRL), also have their own meters and services and are separate from Networks 1 and 2. Approximately 10 miles of distribution pipelines (2-inch to 16-inch) deliver water to the campus's various buildings, irrigation, and facilities. The Beachside Village property is served by the LBWD's water system through four (4) separate water meters. According to the Utility Infrastructure Master Plan Update, most of the campus's water mains were constructed in the

[6] Long Beach Water Department, Water Sources, available at: https://lbwater.org/water-sources/, accessed April 12, 2023.

1940s and 1950s and some of the lines are nearing the end of their lifespan.

As for the fire water system, the campus does not have on-site water storage for firefighting. The campus's fire water system is combined with the domestic system, and thus, does not depend on on-site storage for fire requirements. Based on modelling conducted as part of the Utility Infrastructure Master Plan Update to test the campus's existing system's ability to satisfy the fire flow criteria set forth by the Long Beach Fire Department (LBFD) in conjunction with maximum day demands disbursed throughout the campus based on building square footage, the existing water distribution network is inadequate to serve the existing buildings, primarily due to the limited size of the distribution piping in many locations.

Reclaimed Water

Reclaimed water for the campus is supplied from LBWD's reclaimed water system. LBWD's reclaimed water public lines are used to feed a network covering portions of the northern section of the main campus and the cooling tower at the Central Plant located in the southern section of the main campus. The reclaimed water network is fed from the 21-inch reclaimed water main in Atherton Avenue and consists of purple PVC mains. There are three points of connection for the reclaimed water lines to the LBWD public lines in Atherton Avenue, which serve five separate reclaimed water systems, two of which are pumped, and three of which are supplied at the service pressure point from LBWD. One of the service connections is located in the northern section of the main campus, near the Walter Pyramid and the Dance Center, the other connection is located in the northeastern section of main campus, to the north of Parking Lot 12; the last connection was recently added in the northwestern portion of the campus at Determination Drive.

Wastewater

The main campus's sewer system flows into sewer mains owned by LBWD and LACSD. LACSD operates and maintains the regional wastewater collection system, which includes approximately 1,400 miles of sewers, 49 pumping plants, and 11 wastewater treatment plants that transport and treat about half the wastewater in Los Angeles County. Collectively, LACSD treats about 400 million gallons of water per day (mgd).[7]

The sewer services for individual buildings on campus tie into several sewer mains, which then tie into either the LBWD's or LACSD's sanitary sewer mains. The LBWD and LACSD sanitary sewer mains run throughout the main campus and into the surrounding streets. Due to the main campus's topography and the sewer system's layout, flows from different portions of the campus are collected by six different networks.

There are four permitted clarifiers on campus that remove suspended solids from the sewer flows prior to tying into the campus mains. Based on the Utility Infrastructure Master Plan Update, the existing average day flow generated on-campus for the sewer system is 1.04 cubic feet per second (cfs), with a peak flow rate of 2.88 cfs.

Stormwater

Stormwater on the main campus is collected by pipes, catch basins, and area drains throughout the campus, and empties into Bouton Creek Channel, a Los Angeles County Flood Control District (LACFCD) channel that runs southeasterly through the campus. There is also an area in the southeast section of the main campus that has a network of pipes that directs stormwater to an

[7] Los Angeles County Sanitation Districts, Our Agency, available at: https://www.lacsd.org/about-us/who-we-are/our-agency, accessed April 12, 2023.

18-inch pipe that connects to a 21-inch City of Long Beach storm drain line near 7th Street and East Campus Drive. In addition to stormwater flows generated on-site, the main campus receives flows from the adjacent Veterans Affairs Medical Center complex located to the south and west. Refer to Section 3.7 Hydrology and Water Quality, of this Draft EIR, for a detailed discussion on the drainage conditions for the campus.

The existing storm drainage system consists of several networks that were installed in the 1940s. During heavy rains, the main campus experiences flooding due to inadequately sized storm drain infrastructure. Stormwater from the Bouton Creek Channel floods the southeast portion of south campus during high tides and heavy rain events. Nonetheless, the performance of the existing storm drainage system is generally adequate.

Electricity

The university purchases its electricity directly from Southern California Edison (SCE). SCE provides electrical power to 15 million people in 50,000 square-miles across central, coastal and Southern California, excluding the City of Los Angeles and some other cities. SCE's electrical system is a vast network of transmission lines, distribution lines, electric poles, and transformers.[8]

The campus is served by a 66 kilovolt (kV) transmission service originating from an outdoor switchyard located in the Corporation Yard on the northeast section of the campus. The campus is equipped with three primary substations, identified as the North, South, and Central Plant substations. The campus also has several photovoltaic systems installed at the campus, located at Lot 7, Lot 14, the Corporation Yard, and Brotman Hall. These systems help the campus offset their overall energy use and GHGs, and reduce its overall peak demand and associated charges. Additionally, the campus has two battery storage systems of 1,250 kilowatts (kw)/6,000 kilowatt-hours (kWh) and 1,560 kW/9,450kWh, respectively.

The current installed capacity of the campus is 52,000 kilovolt amperes and the maximum demand of the campus is approximately 10,000 kilovolt amperes, which occurs during the months of September and October. The total average energy consumption of the campus per year is approximately 45,000,000 kWh.

Natural Gas

The Southern California Gas Company (SoCalGas) provides natural gas services to the campus. SoCalGas supplies power to a population of 21.8 million through 5.9 million meters in more than 500 communities. SCE's service territory encompasses approximately 24,000 square miles in diverse terrain throughout Central and Southern California from Visalia to the Mexican border.[9]

There are seven utility-owned natural gas meters on campus, and several high-pressure gas City mains run throughout the campus. The main campus meter is located in the middle of the campus, near the 8-inch high-pressure gas line northeast of the Central Plant. The main campus gas line has three 6-inch branches that serve the entire campus, including the east campus branch, the south campus branch, and the west campus branch.

The main campus natural gas distribution system was installed in the 1950s. CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030;

[8] Southern California Edison, Who We Are, https://www.sce.com/about-us/who-we-are, accessed April 12, 2023.
[9] Southern California Gas Company, Company Profile, https://www.socalgas.com/about-us/company-profile, accessed April 12, 2023.

thus, CSULB would not consume natural gas by 2035 and this analysis assumes no natural gas use for operation (2035).

Telecommunications

CSULB completed the construction of a campus-wide telecommunications infrastructure upgrade in compliance with the CSU Telecommunications Infrastructure Planning Standards in 2005. This upgrade provided for three new Main Distribution Frame buildings and the construction of new underground conduit, copper, and fiber cable systems from each campus building to one of the new Main Distribution Frame buildings. The upgrade also included the relocation of the existing voice switching system from eight remote sites to the new Main Distribution Frame buildings. During the completion of the infrastructure upgrade, CSULB also replaced the data electronics with a Cisco based data network. The upgrade provided additional improvements for infrastructure, new rooms, replaced outlets, and pathway systems.

Voice telephone service is provided over a campus-owned and operated Ericsson private branch exchange switching system. Verizon is the Local Exchange Carrier that provides off-site service. CSULB has an emergency telephone system that is connected to the University Police building for continuous monitoring. The campus's data network utilizes an existing fiber cable system to interconnect the campus buildings and to interconnect with Verizon for off-site connections. The campus utilizes other forms and systems of telecommunications, such as a video system; centralized switching facilities; inter-building pathways, copper cables, and fiber cables.

Solid Waste

Solid waste is collected on campus for recycling, reuse, waste-to-energy, and/or disposal. CSULB contracts with a private company for the transport of solid waste. Recyclable and specified solid waste is transported to the Southeast Resource Recovery Facility in Long Beach for recycling or solid waste-to-energy conversion. Solid waste that cannot be diverted is transported to the Puente Hills landfill for disposal. The Southeast Resource Recovery Facility has a daily capacity of 1,380 tons per day of solid waste and processes an average of 1,290 tons of municipal solid waste per day.[10] The Puente Hills landfill no longer operates as a landfill, and waste is instead transferred to the Puente Hills Intermodal Facility, which is designed to handle up to approximately 8,000 tons of refuse per day.[11] Per CSULB's 2021 Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment & Rating System Report, CSULB generated a total of approximately 5,591 tons of waste in 2019, of which 49 percent was diverted from landfills.[12]

Energy Usage

Energy usage is typically quantified using the British thermal unit (BTU). Total energy usage in California was 6,922.8 trillion BTU in 2020 (the most recent year for which this specific data is

[10] Los Angeles County Sanitation Districts, Southeast Resource Recovery Facility Brochure, available at: https://www.lacsd.org/services/solid-waste/facilities/southeast-resource-recovery-facility-serrf/southeast-resource-recovery-facility-serrf-brochure, accessed March 16, 2023.

[11] Tetra Tech, Puente Hills Intermodal Facility, available at: https://www.tetratech.com/en/projects/puente-hills-intermodal-facility#:~:text=The%20Puente%20Hills%20Intermodal%20Facility,tons%20of%20refuse%20per%20day, accessed March 16, 2023.

[12] Association for the Advancement of Sustainability in Higher Education, 2021, The Sustainability Tracking, Assessment & Rating System, California State University, Long Beach: OP-1 Emissions Inventory and Disclosure, 2021, available at: https://reports.aashe.org/institutions/california-state-university-long-beach-ca/report/2021-01-29/OP/air-climate/OP-1/, accessed April 14, 2023.

available), which equates to an average of 125 million BTU per capita.[13,14] Of California's total energy usage, the breakdown by sector is 43 percent transportation, 26 percent industrial, 13.5 percent commercial, and 17.5 percent residential.[15] Electricity and natural gas in California are generally consumed by stationary users such as residences and commercial and industrial facilities, while petroleum consumption is generally accounted for by transportation-related energy use. In 2021, taxable gasoline sales (including aviation gasoline) in California accounted for 13,822,186,081 gallons of gasoline.[16]

Electricity Services

Over the past 15 years, electricity generation in California has undergone a transition. Historically, California has relied heavily on oil- and gas-fired plants to generate electricity. Spurred by regulatory measures and tax incentives, California's electrical system has become more reliant on renewable energy sources, including cogeneration, wind energy, solar energy, geothermal energy, biomass conversion, transformation plants, and small hydroelectric plants. The electricity generated by renewable energy sources increased from 27 percent in 2009 to 41 percent in 2021.[17] The CEC forecasts that the statewide annual average growth rates of energy demand between 2021 and 2030 will increase from 1.3 percent to 2.3 percent increase for electricity.[18]

The generating capacity of a unit of electricity is expressed in MW. One MW provides enough energy to power 1,000 average California homes per day. Net generation refers to the gross amount of energy produced by a unit, minus the amount of energy the unit consumes. Generation is typically measured in megawatt-hours (MWh), kWh, or gigawatt-hours (GWh). SCE provides electrical services to the campus through state-regulated public utility contracts. SCE delivered more than 87 million kWh of electricity in 2015 and generated electricity for a total of 15 million people from 180 incorporated cities and 15 counties.[19] Approximately 43 percent of SCE's total power was generated from carbon-free sources in 2021.[20]

The electricity consumption for Los Angeles County from 2012 to 2021 is shown below in Table 3.13-1. The electricity consumption has steadily decreased since 2014 due to stricter energy standards and overall higher energy efficiency.

13 U.S. Census Bureau, California Population and Employment as of April 1, 2020, available at: https://www.census.gov/quickfacts/fact/table/CA/POP010220#POP010220, accessed November 29, 2022;

14 U.S. Energy Information Administration, Table F33: Total Energy Consumption, Price, and Expenditure Estimates, 2021, available at: https://www.eia.gov/state/seds/sep_fuel/html/fuel_te.html, accessed November 29, 2022.

15 U.S. Energy Information Administration, California Energy Consumption by End-Use Section, 2020, available at: https://www.eia.gov/beta/states/states/ca/overview, accessed November 29, 2022.

16 California Department of Tax and Fee Administration, Net Taxable Gasoline Gallons, available at: https://www.cdtfa.ca.gov/taxes-and-fees/spftrpts.htm, accessed November 29, 2022.

17 California Energy Commission, *2021 Total System Electric Generation*.

18 California Energy Commission, February 2022, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*. Annual average growth rates of electricity demand per capita demand are shown in Figure 10 of the report.

19 Southern California Edison, Who We Are, available at: https://www.sce.com/about-us/who-we-are, accessed April 3, 2023.

20 Southern California Edison, *2021 Edison International Sustainability Report*.

Table 3.13-1: Electricity Consumption in Los Angeles County, 2012-2021

Year	Electricity Consumption (in millions of kilowatt hours)
2012	69,248
2013	68,342
2014	69,924
2015	69,503
2016	69,390
2017	68,632
2018	67,887
2019	66,805
2020	65,650
2021	65,375

Note: The year 2021 is the most recent year for which the county's electricity consumption data is available.
Source: California Energy Commission, Electricity Consumption by County, available at: http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed November 29, 2022.

Natural Gas Services

Natural gas is a hydrocarbon fuel found in reservoirs beneath the earth's surface and is composed primarily of methane. It is used for space and water heating, process heating and electricity generation, and as transportation fuel. California's natural gas-fired electric generation increased by 6 percent in 2021 to 97,431 GWh from 2020, accounting for 50 percent of in-state generation.[21] In California and throughout the western United States, many new electrical generation plants that are fired by natural gas are being brought online. The CEC forecasts that the statewide annual average growth rates of energy demand between 2021 and 2030 will be less than 0.1 percent to 0.8 percent increase for natural gas.[22] Thus, there is great interest in importing liquefied natural gas from other parts of the world. Nearly 45 percent of the electricity consumed in California was generated using natural gas. While the supply of natural gas in the United States and production has increased greatly, California produces little, and imports 90 percent of its natural gas.[23]

As discussed, SoCalGas provides natural gas service to the campus as well as 21.8 million consumers throughout Central and Southern California. The natural gas consumption in Los Angeles County from 2012 to 2021 is shown below in Table 3.13-2.[24] Los Angeles County's natural gas consumption was relatively steady with some fluctuations, ranging from 2,761 to 3,065 in millions of therms between 2012 to 2021.

21 California Energy Commission, 2021 Total System Electric Generation, available at: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2021-total-system-electric-generation, accessed April 14, 2023.

22 California Energy Commission, February 2022, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*. Annual average growth rates of electricity demand and natural gas per capita demand are shown in Figure 10 and Figure 14, respectively.

23 California Energy Commission, *Supply and Demand of Natural Gas in California*, available at: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california, accessed November 29, 2022.

24 Natural gas consumption data is not available for the City of Long Beach. The year 2021 is the most recent year for which the county's natural gas consumption data is available.

Table 3.13-2: Natural Gas Consumption in Los Angeles County 2012-2021

Year	Natural Gas Consumption (in millions of therms)
2012	2,985
2013	3,065
2014	2,794
2015	2,761
2016	2,878
2017	2,956
2018	2,922
2019	3,048
2020	2,937
2021	2,881

Source: California Energy Commission, Gas Consumption by County, available at: http://www.ecdms.energy.ca.gov/gasbycounty.aspx, accessed November 29, 2022.

Petroleum

Petroleum products are fuels made from crude oil and hydrocarbons contained in natural gas. Petroleum products can also be made from coal, natural gas, and biomass. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles.[25] Gasoline sold in California at retail is made up of 90 percent petroleum-based gasoline (as specified by CARB) and 10 percent ethanol.

Automotive fuel consumption in Los Angeles County from 2012 to 2022 is shown in Table 3.13-3. The on-road automotive fuel consumption dipped in 2020 and increased slowly after. The off-road fuel consumption has slowly increased since 2012. With the growth of economy, there were more on-road vehicles and more construction activities over the years, and therefore both on-road and off-road fuel consumption has increased. For the year 2020, the on-road automotive fuel consumption dipped due to the COVID-19 pandemic, which resulted in mass lockdowns due to the stay-at-home orders.

[25] California Energy Commission, California Gasoline Data, Facts, and Statistics, available at: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics, accessed April 3, 2023.

Table 3.13-3: Automotive Fuel Consumption in Los Angeles County 2012-2022

Year	On-Road Automotive Fuel Consumption (Gallons)	Off-Road Fuel Consumption (Gallons)
2012	4,186,161,501	30,386,041
2013	4,223,808,635	31,412,517
2014	4,265,906,215	32,380,286
2015	4,386,789,754	33,324,823
2016	4,545,597,465	34,221,807
2017	4,542,959,166	35,091,687
2018	4,489,529,661	35,918,628
2019	4,420,198,780	36,717,728
2020	3,960,563,083	37,480,695
2021	4,418,592,633	38,606,422
2022	4,390,118,773	39,729,703

Source: California Air Resources Board, EMFAC2021, available at: https://arb.ca.gov/emfac/, accessed February 16, 2023.

3.13.3 Methodology

Utilities

The evaluation of impacts related to utilities and service systems was based on the Utility Infrastructure Master Plan Update, the Water Supply Information Report, and comments received from LACSD during the NOP scoping period. Additionally, the analysis considered the impacts of the types of development under the Master Plan Update as well as the total campus population growth and resulting demand for increased utilities. The analysis of impacts to utilities is based on a comparison of existing and projected supply and capacity for services and the resulting need, if any, for new, expanded, or modified facilities to provide for the increased demand. Under CEQA, impacts are typically considered to be significant if there would be inadequate supplies or capacity to meet the project's demands, or a project would require new or expanded utility or service facilities, the construction of which would result in significant environmental impacts.

Energy

The energy impact analysis in this section includes a program-level analysis of the proposed Master Plan Update. The program-level analysis generally includes a qualitative discussion for construction and quantitative discussion for operation associated with the types of project activities that would be implemented under the Master Plan Update that would result in energy consumption. The project-level analysis includes a quantitative analysis of near- and mid-term projects that would be implemented under the proposed Master Plan Update. Of the near- and mid-term projects described in Chapter 2, Project Description, the most impactful projects, in terms of energy use, were identified and modeled based on their likely construction scenarios, construction duration, construction equipment, existing and/or new building square footage, and demolition requirements. These major projects were determined to represent the more intense construction scenarios that would require notable amounts of energy consumption and usage.

The analysis focuses on two sources of energy that are relevant to the Master Plan Update: electricity used during operations and fuel consumption from construction vehicles/equipment and operational mobile sources. The estimation of electricity usage and fuel consumption are based on the California Emissions Estimator Model Version 2020.4.0 (CalEEMod) modeling results for

the implementation of the Master Plan Update.[26] Additionally, CSULB is currently in the process of phasing out natural gas usage, consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030; thus, CSULB would not consume natural gas by 2035 and this analysis assumes no natural gas use for operation (2035). Although Title 24 requires new buildings to install solar panels and energy storage facilities, for a conservative analysis, all additional electricity consumed as part of implementation of the Master Plan Update is assumed to be purchased from SCE, as opposed to being generated on-site (i.e., solar). The Title 24, Non-Title 24, and Lighting energy consumption breakdown for the existing conditions and the Master Plan Update were adjusted in proportion to the CalEEMod defaults because the energy consumption breakdown was not provided in the Utility Infrastructure Master Plan Update.

Construction Energy Consumption Methodology

Energy consumption from the construction phases of the most impactful projects was calculated using CalEEMod Version 2020.4.0. Construction modeling parameters, including phasing, equipment mix, and vehicle trips, were based on CalEEMod default values and specific construction phasing and vehicle trip information for development projects, as provided by program planners in the Design & Construction Services Department at CSULB. To estimate construction emissions, the projects were modeled separately. Each project includes construction activities associated with demolition, grading, building construction, paving, and architectural coating applications.

All phases include three types of trips: worker trips, vendor trips, and haul trips. Worker trips for all construction phases, except building construction and architectural coating, are based on 1.25 workers per equipment in the phase, resulting in one roundtrip per worker. For building construction workers, the trip number is estimated using the trip generation rate from a survey conducted by the South Coast Air Quality Management District (SCAQMD). Worker trips associated with architectural coating are estimated at 20 percent of building construction worker trips. Vendor trips are only associated with building construction and are based on the land uses and associated trip rates from the SCAQMD survey. Haul trips are based on the amount of material that is demolished, imported, or exported, and are estimated and provided by program planners in the Design & Construction Services Department at CSULB. The on-road fuel consumption during construction is calculated based on the phase length, associated trips, trip length, and fuel consumption factors. To calculate the annual on-road fuel consumption, fuel consumption of the most impactful projects is added together and divided by seven, as the construction of the projects is estimated to occur over approximately seven years. The annual on-road fuel consumption was compared to the 2024 Los Angeles County on-road fuel consumption estimated by the countywide 2021 CARB EMission FACtor (EMFAC2021) model.

The off-road fuel consumption is calculated based on the CalEEMod defaults, which include the length of the phase, the type of equipment, the number of equipment, the usage hour of the equipment, the horsepower of the equipment, and the load factor of the equipment. To be conservative, this analysis assumes the equipment would operate eight hours per day, and the

[26] CalEEMod version 2022.1 was officially released on December 21, 2022. Based on correspondence with SCAQMD staff, a grace period would be granted for CEQA projects occurring during this transition phase to utilize either the older (2020) or the latest (2022) version of CalEEMod. In general, the SCAQMD recommends the use of CalEEMod 2022 for projects that have NOPs issued after December 2022. The NOP for the Master Plan Update EIR was published on April 21, 2022; hence, CalEEMod version 2020 4.0 was used. Source: Sam Wang, South Coast Air Quality Management District Senior Air Quality Engineer, email correspondence with Zhe Chen, Michael Baker International, January 13, 2023.

length of each phase would be the average of the most impactful projects.[27] To calculate the annual off-road fuel consumption, the fuel consumption for the most impactful projects is added together and divided by seven as the construction of the major projects would last for approximately seven years. The annual off-road fuel consumption was then compared to 2024 Los Angeles County off-road construction fuel consumption estimated by EMFAC2021.

Operational Energy Consumption Methodology

The main components of the operational energy consumption analysis are electricity and fuel consumption from mobile sources. CSULB's electricity is provided by SCE and on-site solar generation. For modeling purposes, only electricity purchased from SCE was considered, as electricity generated from on-site solar does not impact the regional energy supply. The baseline (2019) and horizon year (2035) electricity consumption was obtained from the CSULB Utility Infrastructure Master Plan Update. Based on the Utility Infrastructure Master Plan Update, the university's natural gas and SCE electricity consumption was 1,377,285 therms (137,695,445 kBtu) and 37,884,271 kWh, respectively, in 2019. Implementation of the Master Plan Update would increase the electricity consumption by 25,291,100 kBtu (7,412,397 kWh) and would not consume natural gas by 2035. To be conservative, this analysis assumes that all additional electricity consumed as part of implementation of the Master Plan Update would be purchased from SCE. This assumption is conservative as the new buildings under the Master Plan Update would be required to install photovoltaic panels per 2022 Title 24 standards, which would generate on-site energy.

Additionally, CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030; and thus, CSULB would mostly phase out natural gas by 2035. However, to be conservative, this analysis assumes natural gas use for operation in 2035 would remain the same as under existing conditions (1,377,285 therms or 137,695,445 kBtu) to account for the continued use of natural gas at a few buildings on-campus that require natural gas, such as laboratories with Bunsen burners and commercial kitchens. This assumption is conservative as the new buildings under the Master Plan Update would be electrified and would not consume natural gas, and some existing buildings would consume less natural gas as they would be retrofitted under the Master Plan Update to be fully electrified.

Fuel consumption associated with mobile sources would primarily consist of motor vehicles (automobiles and light-duty trucks) traveling to and from the campus. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix provided in CalEEMod 2020.4.0, which was based on CARB's Mobile Source Emissions Inventory model, EMFAC, version 2017, was applied. Trip generation rates and VMT for implementation of the Master Plan Update were based on the transportation analysis in Section 3.11, Transportation, prepared for the project. According to the transportation analysis, CSULB would generate approximately 33,237 trips per day in the 2019 baseline year without the project, and 44,113 trips per day in the 2035 horizon year with the project (i.e., Master Plan Update); this would result in a total site-generated VMT of 390,197 miles per day in the 2019 baseline year without the project and 446,213 miles per day in the 2035 horizon year with the project. Default vehicle trip generation rates included in CalEEMod were adjusted to match the existing and project's trip generation estimates from the transportation analysis. In addition, Saturday and Sunday trip rates for the 2019 baseline year without the project and 2035 horizon year with the project were adjusted in

[27] The average durations for each construction phase used to calculate consumption are 34 days for the demolition phase, 34 days for the grading phase, 284 days for the building construction phase, 30 days for the paving phase, and 31 days for the architectural phase.

proportion to the CalEEMod weekday trip rates because weekend trip-generation rates are not provided in the transportation analysis. CalEEMod default trip distances were adjusted to match the weekday daily VMT for the 2019 baseline year without the project and 2035 horizon year with the project.

The results of the energy consumption modeling are included in the Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations. To calculate the net operational energy consumption of the Master Plan Update, the existing energy consumption was subtracted from the buildout energy consumption, as the operational phase estimated all proposed development and all existing campus development that would remain with implementation of the Master Plan Update.

As indicated in the program-analysis for Threshold UE-6, energy usage from implementation of the Master Plan Update would not cause a significant impact on energy supply. Therefore, a separate operational consumption analysis was not conducted for each project, as it can be inferred that all of the most impactful projects would also not cause a significant impact on energy supply, since they are already included in the program-level analysis.

Thresholds of Significance

The significance thresholds used to evaluate the impacts of the Master Plan Update related to utilities and energy are based on Appendix G of the CEQA Guidelines. Based on Appendix G, a project would have a significant impact related to utilities and energy if it would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?
- Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

3.13.4 Impact Analysis

The impact analysis below is organized into a program-level analysis and a project-level analysis. For the program-level analysis, the Master Plan Update is evaluated as an overall program of projects developed over a multi-year planning horizon for the CSULB campus. For the project level analysis, near- and mid-term development projects that would be implemented under the

Master Plan Update are analyzed.

UE-1 Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Program-Level Analysis for Master Plan Update

Water

All new buildings implemented under the Master Plan Update would require new connections to existing water infrastructure on campus. Additionally, replacement and renovation projects may require the replacement or expansion of water pipelines. The construction impacts associated with installing new, replacement, and expanded pipelines within the existing water network may involve excavation and paving for water connections.

According to the Utility Infrastructure Master Plan Update and the Uniform Fire Code's criteria, the campus's existing water distribution network is inadequate to serve the existing buildings without significant improvements, primarily due to the limited size of the distribution piping in many locations. In order to prevent maintenance and failure problems in the future, replacement of water mains, upsizing of pipes, a new water meter and service, and installation of backflow preventers are recommended to serve planned development under the Master Plan Update and would be included in the site plans for the individual projects. Such improvements would be installed during implementation of individual development projects depending on need. Water infrastructure improvements would be located within the disturbance area of individual development projects, the boundaries of the campus, and/or previously disturbed roadways internal to the campus. As such, the construction of these infrastructure improvements would not cause significant environmental effects. Therefore, impacts related to the construction and expansion of water facilities would be less than significant.

Wastewater Treatment

According to the Utility Infrastructure Master Plan Update, some of the projects under the Master Plan Update are located on top of existing sewer lines and would need to be relocated, or need additional sewer lines to connect to the existing campus sewer network. Although development under the Master Plan Update may conflict with the existing sewer layout, each individual development project would be designed to re-route sewer lines, as needed. In addition, approval to construct improvements within, over, or near LACSD's sewer or sewer easements on campus is required from LACSD before any construction begins.[28] Sewer line extensions necessary to serve proposed future development would be installed within the disturbance area of individual development projects, the boundaries of the campus, and/or previously disturbed roadways internal to the campus. As such, the construction of these infrastructure improvements would not cause significant environmental effects. Furthermore, as analyzed in Threshold UE-3 below, LACSD would have adequate wastewater capacity to serve the projected needs resulting from implementation of the Master Plan Update, and thus, would not require new or expanded wastewater facilities. Therefore, impacts related to the construction and expansion of wastewater facilities would be less than significant.

[28] Will Serve Letter from Los Angeles County Sanitation Districts, Curry, Donna, Customer Service Specialist, dated May 10, 2023.

Stormwater Drainage

During construction of the projects under the Master Plan Update, stormwater would generally flow to existing catch basins, area drains, and into pipes, similar to existing conditions. Implementation of the Master Plan Update would result in a different configuration of the buildings and impervious surfaces on campus. Storm drain laterals would be replaced with laterals for new building footprints, as needed. Existing storm drain mains are not expected to be rerouted as a result of implementation of the Master Plan Update. One of the goals of the Master Plan Update is to ensure that new developments produce less runoff than pre-development conditions or match pre-development conditions at minimum. Thus, new and replacement buildings would be constructed with sustainable design features, which would include Low Impact Development such as bioswales, bioretention basins, and inlet basin filters to manage stormwater and minimize stormwater runoff. Therefore, impacts related to the construction and expansion of stormwater facilities would not result in significant environmental effects and impacts would be less than significant.

Electric Power

Electricity consumption during construction activities would be limited to providing power to project-specific construction sites and portable construction equipment. Temporary electric power would be provided via the existing electrical infrastructure on campus. Electricity for these activities would be short-term and would not substantially increase the demand for electricity within the campus. Heavy equipment used for construction is primarily powered by fossil fuels, as discussed further below in Threshold UE-6. Therefore, construction of the development projects associated with the Master Plan Update would be adequately served by the existing electrical infrastructure.

As discussed below in Threshold UE-6, buildout of the Master Plan Update would increase the annual consumption of electricity at the campus by 7,714 MWh. One of the goals of the university is to apply Net Zero Energy strategies to all new campus buildings such that buildings would be designed to minimize energy consumption. By implementing Net Zero Energy strategies, building electricity consumption for new buildings on campus would be further minimized. Additionally, the development projects associated with the Master Plan Update would be required to comply with the most current version of the Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the latest Title 24 standards would reduce operational building electricity consumption. The Title 24 Building Energy Efficiency Standards are updated every three years and become more stringent between each update; therefore, complying with the latest Title 24 standards would make the new buildings constructed under the Master Plan Update more energy efficient than existing buildings built under the earlier versions of the Title 24 standards. In addition, CSULB currently generates solar energy on campus, and would increase solar generation throughout the Master Plan Update horizon year. The increase in availability of such energy resources further ensures that new development projects would minimize electricity demand. Lastly, developments associated with the proposed Master Plan Update would incorporate the CSU Sustainability Policy's Sustainable Building & Lands Practices, such as providing shade from the sun, taking advantage of coastal breezes, and promoting energy efficiency in the project design. Therefore, impacts related to the construction and expansion of electrical facilities would be less than significant.

Natural Gas

CSULB is currently in the process of phasing out natural gas use, consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030. The existing buildings and facilities on campus that currently use natural gas would continue to use natural gas; however, all new buildings and facilities would be electrified. As implementation of the Master Plan Update would not result in additional natural gas consumption, there would be no impacts related to new or expanded natural gas facilities.

Telecommunications

Development under the Master Plan Update would require connections to the existing campus voice and data network through the campus copper and fiber optic cable systems. The existing copper and fiber optic cable system would be expanded to accommodate new, renovated, and replacement buildings. However, no major telecommunications improvements are proposed as new services would connect to the existing system. Therefore, implementation of the Master Plan Update would result in no impacts related to new or expanded telecommunications facilities.

Project-Level Analysis for Near- and Mid-Term Development Projects

Impacts related to new or expanded water, wastewater, stormwater, electric, natural gas, and telecommunications facilities resulting from the near- and mid-term development projects would be similar to the impacts at the program level for the Master Plan Update. Impacts resulting from specific near- and mid-term development projects are discussed below.

Water

All new buildings implemented under the Master Plan Update would require new connections to existing water infrastructure on campus. These projects include Faculty and Staff Housing and the New 7th St. Community Outreach Facility. Additionally, some building additions may also require new connections to the existing water infrastructure on campus, if new restrooms or kitchen facilities are included in the building addition, such as for the USU Renovation/Addition and Cafeteria Replacement, College of the Arts Replacement Building, Student Health Services Addition, Corporation Yard Renovations, University Music Center Renovation/Addition projects. Replacement and renovation projects may require the replacement or expansion of water pipelines to serve the replacement and renovated buildings.

Based on the Utility Infrastructure Master Plan Update, the New Parkside Housing Village, USU Renovation/Addition and Cafeteria Replacement, College of the Arts Replacement Building, Faculty and Staff Housing, and Engineering Replacement Building projects would conflict with existing water lines. However, the existing water lines would be rerouted and reconnected on a project-by-project basis. Infrastructure improvements would be anticipated to be located within the disturbance area of the near- and mid-term project sites, the boundaries of the campus, and/or previously disturbed roadways internal to the campus. As such, the construction of these infrastructure improvements would not cause significant environmental effects. Therefore, impacts related to the construction and expansion of water facilities for the near- and mid-term development projects would be less than significant.

Wastewater Treatment

Based on the Utility Infrastructure Master Plan Update, the New Parkside Housing Village, Student Health Services Addition, USU Renovation/Addition and Cafeteria Replacement, College of the Arts Replacement Building, and Faculty and Staff Housing projects would require modifications with the existing wastewater network. However, the existing sewer lines would be

rerouted and reconnected on a project-by-project basis. Infrastructure improvements would be anticipated to be located within the disturbance area of the near- and mid-term project sites, the boundaries of the campus, and/or previously disturbed roadways internal to the campus. As such, the construction of these infrastructure improvements would not cause significant environmental effects. In addition, during the design process for individual development projects, CSULB would obtain approval from LACSD to construct improvements within, over, or near LACSD's sewer or sewer easements before any construction begins. In addition, as discussed under Threshold UE-3, LACSD would have adequate capacity to serve the projected needs resulting from implementation of the Master Plan Update, and thus, would not require new or expanded wastewater facilities. Therefore, the near- and mid-term development projects would not cause significant environmental effects and impacts related to wastewater facilities would be less than significant.

Stormwater Drainage

Based on the Utility Infrastructure Master Plan Update, the New Parkside Housing Village, USU Renovation/Addition and Cafeteria Replacement, and Faculty and Staff Housing projects would require modifications with the existing stormwater drainage network. However, recommendations such as rerouted storm drain lines would be incorporated on a project-by-project basis. Infrastructure improvements would be anticipated to be located within the disturbance area of the near- and mid-term project sites, the boundaries of the campus, or previously disturbed roadways internal to the campus. As such, the construction of these infrastructure improvements would not cause significant environmental effects. Consistent with the Master Plan Update's goal of minimizing runoff from new development, the near- and mid-term development projects would incorporate Best Management Practices (BMPs) to minimize impacts to the stormwater system. BMPs may include bioswales, bioretention basins, inlet filter basins, catch basins, or storm drain inserts. Therefore, impacts related to the construction and expansion of stormwater facilities for the near- and mid-term development projects would be less than significant.

Electric Power

Individual development projects implemented under the Master Plan Update that would generate new electricity demand include building additions (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, College of the Arts Replacement Building, Student Health Services Addition, Corporation Yard Renovations, University Music Center Renovation/Addition) and new buildings (Faculty and Staff Housing, New 7th St. Community Outreach Facility). Replacement projects (Engineering Replacement Building and New Parkside Housing Village) could result in increased or additional electricity demand. However, the increase of electricity demand would not be substantial, as they would involve demolition and replacement of an existing facility in the same physical location. Additionally, replacement projects would be required to comply with the most current version of the Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the latest Title 24 standards would reduce operational building electricity consumption. Projects that include interior and exterior renovations (Beachside Housing, Aquatics Center and Pool Renovation, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, and Liberal Arts 5 Renovation) would also generally not result in increased or additional electricity demand as renovations would be constructed to exceed the current Title 24 standards by 10 percent and comply with the CALGreen Code. Additionally, mobility, circulation, and open space projects (Pedestrian/Bike Lane Improvements, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, Redefining the Campus Quad) are not anticipated to result in new or increased electricity demand as these types of

projects would require nominal amounts of electricity for lighting. Therefore, impacts related to the construction and expansion of electrical facilities for the near- and mid-term development projects would be less than significant.

Natural Gas

As discussed, CSULB is currently in the process of phasing out natural gas use consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030. The existing buildings and facilities on campus that currently use natural gas would continue to use natural gas; however, all new buildings and facilities would be electrified.

Thus, CSULB would not consume natural gas by 2035. However, in the interim, the USU Renovation/Addition and Cafeteria Replacement would require an extension of gas service, which would connect to the existing system within the main campus. The other near- and mid-term development projects included in the Utility Infrastructure Master Plan Update would utilize electricity instead of natural gas. Thus, the existing natural gas distribution system would have adequate capacity to support the proposed natural gas loads for the near- and mid-term development projects. Therefore, impacts related to the construction and expansion of natural gas facilities for the near- and mid-term development projects would be less than significant.

Telecommunications

The Utility Infrastructure Master Plan Update identified the following projects that would require new connections to the campus voice and data network through the campus copper and fiber optic cable systems: University Music Center Renovation/Addition, New Parkside Housing Village, New 7th St. Community Outreach Facility, USU Renovation/Addition and Cafeteria Replacement, College of the Arts Replacement Building, and Engineering Replacement Building. However, as under the program-level analysis, no major telecommunications improvements are proposed, as new services would connect to the existing system. Therefore, impacts related to the construction and expansion of telecommunications facilities for the near- and mid-term development projects would be less than significant.

UE-2 Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Program-Level Analysis for Master Plan Update

Construction

Construction activities would result in a temporary increase in water demand associated with earthwork and soil compaction, dust control, mixing and placement of concrete, equipment and site cleanup, irrigation for plant and landscaping establishment, water line testing and flushing, and other related short-term activities. The amount of water used during construction would vary depending on weather, soil conditions, the size of the area under construction, and the specific activities being performed. However, these activities would occur intermittently throughout the construction period and would be temporary in nature. Therefore, construction impacts related to water supply would be less than significant.

Operation

Development under the Master Plan Update would include renovation, replacement, and new buildings, which would increase demands on water supply by supporting an increased campus

population through the Master Plan Update horizon year of 2035. The water demand for the buildout of the Master Plan Update (2035) are from Appendix I, Water Supply Information Report, and was projected based on the projected campus growth. Key numbers summarizing the water supply analysis for the baseline year and through year 2040 are presented in Table 3.13-4.[29]

Table 3.13-4: Projected Gross Water Demand through 2040

Description	Academic Year 2019-2020	Academic Year 2039-2040
Total Campus Population	32,699	40,181[1]
CSULB Domestic Water Demand (MG)	138.2	169.9
CSULB Domestic Water Demand (AF)	424	521
LBWD Commercial Water Demand (AF)	11,084*	9,283
LBWD Domestic Water Demand (AF)	53,964*	51,691
LBWD Total Water Supply (AF)	84,752*	88,752
LBWD Total Water Surplus (AF)	30,788*	37,061

Notes: MG = million gallons; AF = acre feet.

a. The 2039-2040 campus population projection is only applicable for the purposes of the water supply analysis.

Source: Refer to Appendix I, Water Supply Information Report.

As shown in Table 3.13-4, CSULB's gross water demand (without the implementation of conservation measures) is expected to increase from 138.2 million gallons (MG) in 2020 to 169.9 MG by 2040, while LBWD's projected total commercial water demand will decrease from 11,084-acre feet (AF) (3,104 MG) in 2020 to 9,283 AF (2,599 MG) by 2040. As a result, CSULB's water demand percentage of the LBWD's total commercial water demand will change from 3.9 percent in 2020 to 6.5 percent in 2040. However, LBWD's water supplies were projected to have an average annual increase of 1.8 percent through 2040, which is higher than CSULB's water demand increase rate of 1.04 percent. By 2040, LBWD will have 12,076 MG (37,061 AF) of water surplus per year, which is adequate to cover CSULB's water demand increase of 31.7 MG. Therefore, implementation of the Master Plan Update would not result in inadequate water supply by 2040.

In addition, to minimize impacts to water supply and support ongoing water reduction policies, CSULB would continue efforts to reduce water consumption, which are outlined in the CSULB Water Action Plan, 2020 CAAP, 2012 Landscape Master Plan, 2011 Strategic Energy Plan, as well as university-wide policies including Executive Order 0987 and the 2020 CSU Sustainability Policy. These plans and policies include but are not limited to the following water reduction recommendations: identify opportunities to use reclaimed in place of potable water; implement applicable best management water use practices for all campus operations; encourage university-wide water conservation; implement the Irrigation Water Savings Program, improve irrigation water efficiency; reduce turf area and replace it with native plants; and improve stormwater capture and reuse. The Master Plan Update also includes goals to expand on the use of reclaimed water through retrofitting and extension of reclaimed water lines, and use of

[29] The water demand is projected through 2040 to be consistent with the 20-year projection demand provisions from Senate Bill 610. While the CSU and its universities do not meet the definition of a city or county under SB 610, recent and continuing precipitation trends and water supply uncertainty have heightened concerns about the future availability of a reliable water supply, and the provisions of SB 610 provide useful guidance for water supply analysis.

reclaimed water for toilet flushing in new/replacement buildings.

Therefore, because LBWD would have adequate water supply through 2040 and CSULB would continue to implement efforts to reduce water use, implementation of the Master Plan Update would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Individual development projects implemented under the Master Plan Update that would generate new water demand include building additions (USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, College of the Arts Replacement Building, Student Health Services Addition, Corporation Yard Renovations, University Music Center Renovation/Addition) and new buildings (Faculty and Staff Housing, New 7th St. Community Outreach Facility). Replacement projects (Engineering Replacement Building and New Parkside Housing Village) would generally not result in increased or additional water demand as they would involve demolition and replacement of an existing facility in the same physical location, resulting in similar water demand. Additionally, as required by CALGreen, replacement projects would implement water conservation measures to reduce water consumption by 20 percent through measures such as low water use fixtures (faucets, toilets, and urinals) when retrofitting restrooms and drought tolerant landscaping to further minimize water demand. New and replacement projects may also include the use of reclaimed water for toilet flushing. Projects that include interior and exterior renovations (Beachside Housing, Aquatics Center and Pool Renovation, Jack Rose Track/Commencement Facilities, Walter Pyramid Renovation, and Liberal Arts 5 Renovation) would also generally not result in increased or additional water demand. Additionally, mobility, circulation, and open space projects (Pedestrian/Bike Lane Improvements, Friendship Walk Stairs Revitalization, Improved Campus Entrance and Gateway, Redefining the Campus Quad) are not anticipated to result in new or increased water demand as these types of projects would include drought tolerant landscaping, where necessary, that would require nominal water use.

As described under the program-level analysis, the near- and mid-term development projects would not result in a water supply issue through 2040 based on LBWD's total water supply and the campus's projected total water demand through 2040. The near- and mid-term development projects would also adhere to the applicable plans and policies that include water conservation measures. Therefore, because LBWD would have adequate water supply through 2040 and CSULB would continue to implement efforts to reduce water use, the near- and mid-term development projects would have sufficient water supplies available to serve the project together with reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be less than significant.

UE-3 Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Program-Level Analysis for Master Plan Update

Implementation of the Master Plan Update would result in the renovation of existing buildings, replacement of buildings, and construction of new buildings, as well as an increase in the on-campus population, all of which would place additional demands on the existing sanitary sewer system by increasing the potential for additional sewage flow. According to the Utility Infrastructure Master Plan Update, the total increase in sewage flow for the build-out condition of

the Master Plan Update would be approximately 148,600 gpd from the new buildings and replacement buildings and number of students per square foot of building.

According to LACSD, wastewater flow originating from implementation of the Master Plan Update would discharge to local sewer lines, which are not maintained by LACSD, for conveyance to the one or more of LACSD's trunk sewers.[30] Wastewater generated by implementation of the Master Plan Update would be treated at the Joint Water Pollution Control Plant located in the City of Carson, which has a capacity of 400 mgd and currently processes an average flow of 249.8 mgd, or the Long Beach Water Reclamation Plant, which has a capacity of 25 mgd and currently processes an average flow of 15.2 mgd. Based on LACSD's wastewater generation factors of 20 gpd per student,[31] implementation of the Master Plan Update would increase the wastewater generation on campus by 109,320 gpd (from 653,980 gpd in the 2019 baseline year to 736,300 gpd in the 2035 horizon year). Using the more conservative assumption from the Utility Infrastructure Master Plan Update that implementation of the Master Plan Update would increase sewage flow by 148,600 gpd, the average flow at the Joint Water Pollution Control Plant would be increased by 0.06 percent and the average flow at the Long Beach Water Reclamation Plant would be increased by 1 percent. Both the Joint Water Pollution Control Plant and Long Beach Water Reclamation Plant have capacity to accommodate these increases. Furthermore, LACSD charges fees to connect facilities (directly or indirectly) to their Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. Development under the Master Plan Update would require the payment of fees in order to permit an increased discharge to the LACSD's Sewerage System if new connections are needed. As there is adequate capacity at the Joint Water Pollution Control Plant and Long Beach Water Reclamation Plant and CSULB would pay fees to connect new facilities to the existing sewerage system, impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

The proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. Wastewater generation for the near- and mid-term development projects represents a portion of and is accounted for in the total increase in sewage flow, which would be approximately 148,600 gpd with implementation of the Master Plan Update. As discussed under the program-level, the average flow at the Joint Water Pollution Control Plant would be increased by 0.06 percent and the average flow at the Long Beach Water Reclamation Plant would be increased by 1 percent with implementation of the Master Plan Update. Both the Joint Water Pollution Control Plant and Long Beach Water Reclamation Plant have capacity to accommodate these increases. Given that each project is captured within the program-level analysis, sewage flow for each individual development project would be less than the estimates presented in the program-level analysis. In addition, CSULB may also pay applicable fees to LACSD for the near- and mid-term development projects for new sewer connections. Therefore, the near- and mid-term development projects would result in less than significant impacts to the service capacity of the wastewater treatment provider.

30 Will Serve Letter from Los Angeles County Sanitation Districts, Curry, Donna, Customer Service Specialist, dated May 10, 2023.

31 Los Angeles County Sanitation Districts, *Table 1, Loadings for Each Class of Land Use*.

UE-4 Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Program-Level Analysis for Master Plan Update

Construction

Construction waste includes any disposable material associated with campus development. Implementation of the Master Plan Update would generate waste through construction of renovation, replacement, and new projects, with replacement projects generating the most amount of waste as these types of projects would require the demolition of existing buildings. While the amount of waste generated from implementation of the Master Plan Update is unknown, the CSU requires a diversion rate of 50 percent by 2030 and 80 percent by 2040, and CSULB has a zero waste goal of 90 percent diversion. Thus, construction activities for development under the Master Plan Update would be required to reduce waste and recycle, reuse, and/or recover materials. In addition, the CSU standards set forth in PolicyStat require that Contractors submit a Waste and Recycling Plan, which at a minimum should identify and estimate types and amounts of waste, job site source separation plans, landfill options and alternatives to disposal (i.e., facilities accepting salvaged or recycled materials), and tonnage calculations demonstrating Contractor will meet or exceed 50 percent diversion rate requirement. This Waste and Recycling Plan must be approved by the Construction Administrator before work can commence. Upon conclusion of projects, the Contractor must also submit a Reuse, Recycling, and Disposal Report, including disposal receipts indicating weights of materials, landfilled or otherwise diverted. With adherence to CSU's diversion requirements and CSULB's continuing efforts towards zero waste, construction activities under the Master Plan Update related to generating solid waste in excess of applicable standards or capacity of local infrastructure would be less than significant.

Operation

The total on-campus population in the Master Plan Update horizon year 2035 is 38,165, which includes FTES, FTE employees, auxiliary employees, and faculty/staff household members. According to CSULB's self-reported statistics in the Association for the Advancement of Sustainability in Higher Education's Sustainability Tracking, Assessment & Rating System, the university had a total of approximately 5,591 tons of waste generated in 2019, with 2,875 tons being disposed in the landfill or incinerator.[32,33] The total weighted campus users reported was 25,634, and thus, the total waste generated per campus user was 0.22 tons for 2019.[34] Using this same generation factor, the projected population for the Master Plan Update horizon year 2035 is anticipated to generate approximately 8,396 tons of waste in 2035, or 23 tons of waste per day. However, in 2019, CSULB diverted 49 percent of waste from landfills and this diversion rate is expected to increase through the Master Plan Update horizon. As discussed, the Southeast Resource Recovery Facility has a daily capacity of 1,380 tons per day of solid waste; the operational buildout of the Master Plan Update would comprise of 1.7 percent of that total. In addition, the Puente Hills Intermodal Facility is designed to handle up to approximately 8,000 tons of refuse per day; the operational buildout of the Master Plan Update would comprise of 0.29

[32] The rest of the total tons of waste generated was recycled, composted, donated, or disposed through post-recycling.

[33] Association for the Advancement of Sustainability in Higher Education, 2021, The Sustainability Tracking, Assessment & Rating System, California State University, Long Beach: OP-1 Emissions Inventory and Disclosure, 2021, available at: https://reports.aashe.org/institutions/california-state-university-long-beach-ca/report/2021-01-29/OP/air-climate/OP-1/, accessed March 16, 2023.

[34] Weighted campus users includes student residents on-site, employee residents on-site, number of other individual residents on-site, total full-time-equivalent-student enrollment, full-time-equivalent of employees, and full-time-equivalent of students enrolled exclusively in distance education.

percent of that total. Therefore, these facilities would have adequate capacity to handle the projected waste generation under the Master Plan Update's horizon year 2035.

In addition, the university has a comprehensive "Waste Not" recycling program that aims to eliminate campus waste by 2030 by focusing on reducing wasteful practices and improving recycling infrastructure across the university. The Master Plan Update has a goal of achieving zero waste to landfill by 2030, meaning 90 percent of waste would be diverted. The Master Plan Update outlines specific strategies for waste minimization and an increase in waste diversion that include shifting towards paper-less administrative processes and academic courses; establishing a cardboard recycling/foam repurposing center during university move-in days; continuing grass cycling (a landscape strategy to leave clippings on the ground); ensuring the university's waste hauler partnership supports CSULB's sustainability goals; providing a program that creates opportunities to share and swap furniture and supplies between departments; continuing to provide collection bins for donations during move-out days; and continuing the university's electronic waste program. With implementation of the Master Plan Update's strategies geared towards reducing waste, adherence to CSULB's "Waste Not Program" and zero waste goal, and expected improvements in waste diversion rates, operation of development under the Master Plan Update would not generate solid waste in excess of applicable standards or capacity of local infrastructure, and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

The proposed near- and mid-term development projects would result in similar impacts to those described above at the program level for implementation of the Master Plan Update. It is anticipated that the following near- and mid-term development projects would result in the most construction waste as they would require demolition of existing buildings: Engineering Replacement Building, New Parkside Housing Village, Faculty and Staff Housing, USU Renovation/Addition and Cafeteria Replacement, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, New 7th St. Community Outreach Facility, and Walter Pyramid Renovation (no demolition as part of the individual development project, but the project would include replacement of the existing roof). As under the program-level analysis, the amount of waste generated from near- and mid-term development projects is unknown. However, the individual development projects would be required to divert 50 percent of construction waste in compliance with the CSU Sustainability Policy. Additionally, the CSU standards set forth in PolicyStat require that contractors submit a Waste and Recycling Plan, which at a minimum is to identify and estimate types and amounts of waste, job site source separation plans, landfill options and alternatives to disposal (i.e., facilities accepting salvaged or recycled materials), and tonnage calculations demonstrating the contractor will meet or exceed 50 percent diversion rate requirement. This Waste and Recycling Plan must be approved by the university's construction administrator before work can commence. Upon conclusion of projects, the contractor must also submit a Reuse, Recycling, and Disposal Report, including disposal receipts indicating weights of materials, landfilled or otherwise diverted. Additionally, construction of individual development projects at CSULB would continue efforts towards zero waste (90 percent diversion). Therefore, with adherence to the waste and recycling requirements construction of the near- and mid-term development projects would not be anticipated to generate solid waste in excess of applicable standards or capacity of local infrastructure, and impacts would be less than significant.

Operation

Operation of the near- and mid-term development projects would produce waste similar to existing

conditions in the form of organic materials such as green waste from landscaping and food waste from dining facilities; recyclables such as plastic bottles; hazardous waste such as lab chemicals; electronic waste such as laptops; and durable goods such as student move-out furniture. Similar to the activities described above at the program level for the Master Plan Update, operation of the near- and mid-term development projects would implement CSULB's "Waste Not" program strategies, as well as the specific strategies of the Master Plan Update. For instance, housing projects such as the New Parkside Housing Village and Faculty and Staff Housing may implement the strategy of using donation bins during on-campus housing move-out days, and student and campus support facility projects such as the USU Renovation/Addition and Cafeteria Replacement may implement the strategies such as continuing pre-portioned food and trayless dining. With implementation of the Master Plan Update's strategies geared towards reducing waste and adherence to CSULB's "Waste Not Program" and zero waste goal, operation of the near- and mid-term development projects would not generate solid waste in excess of applicable standards or capacity of local infrastructure, and impacts would be less than significant.

UE-5 Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Program-Level Analysis for Master Plan Update

Implementation of the Master Plan Update would be subject to several state requirements concerning solid waste. Specifically, development under the Master Plan Update would be required to demonstrate compliance with the AB 939, which requires all California cities to "reduce, recycle, and re-use solid waste generated in the state to the maximum extent feasible." AB 939 requires that at least 50 percent of waste produced is recycled, reduced, or composted. The CSU also requires a diversion rate of 50 percent by 2030 and 80 percent by 2040, while CSULB has a zero waste goal of 90 percent diversion. Thus, construction activities for development under the Master Plan Update would be required to reduce waste and recycle, reuse, and/or recover materials in compliance with state reduction regulations. To demonstrate compliance with the 50 percent diversion rate requirement, the CSU standards set forth in PolicyStat require that Contractors submit a Waste and Recycling Plan, which at a minimum should identify and estimate types and amounts of waste, job site source separation plans, landfill options and alternatives to disposal (i.e., facilities accepting salvaged or recycled materials), and tonnage calculations. This Waste and Recycling Plan must be approved by the Construction Administrator before work can commence. Upon conclusion of projects, the Contractor must also submit a Reuse, Recycling, and Disposal Report, including disposal receipts indicating weights of materials, landfilled or otherwise diverted. Therefore, the Master Plan Update would comply with applicable regulations related to solid waste, and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Similar to the analysis described at the program-level, the near- and mid-term development projects would be required to adhere to AB 939, as well as the California State University Sustainability Policy, which requires a 50 percent diversion rate. Therefore, the near- and mid-term development projects would comply with applicable regulations related to solid waste, and impacts would be less than significant.

UE-6 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Program-Level Analysis for Master Plan Update

Construction

Construction activities would consume energy from fossil fuels used for construction vehicles and other equipment during demolition, grading, paving, building construction, and architectural coatings. Fuel energy consumed during construction activities would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with state requirements (e.g., that heavy-duty diesel equipment not in use for more than five minutes be turned off). Construction equipment used in the development of projects under the Master Plan Update would also be required to comply with the latest EPA and CARB engine emissions standards, which require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption.

Energy is also required to produce construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials, such as lumber and glass. Substantial reductions in energy inputs for construction materials can be achieved by selecting green building materials composed of recycled materials that require less energy to produce than non-recycled materials. The integration of green building materials can help reduce environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source materials.[35] For example, the Buy Clean California Act, which the CSU abides by, establishes and publishes the maximum acceptable Global Warming Potential for eligible materials, including the production of structural steel, concrete reinforcing steel, flat glass, and mineral wool board insulation.[36] Additionally, one of the goals of the university is to apply Net Zero Energy strategies to all new campus buildings, which includes the selection of sustainable building materials that require less energy, water, and physical resources. By implementing Net Zero Energy strategies, energy use from construction would be further minimized. Additionally, construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual characteristics that would necessitate the use of construction equipment, building materials, or methods that would be less energy efficient than at comparable construction sites in the region or the state. Fuel energy and construction materials consumed during construction would not represent a significant demand on energy resources. Therefore, construction of projects under the Master Plan Update would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature, and, as such, impacts would be less than significant.

Operation

Operational activities would consume energy in the form of electricity consumption and mobile source fuel consumption. Table 3.13-5 shows the operational energy consumption from implementation of the Master Plan Update and its impact on the energy consumption of Los Angeles County. As shown, energy usage from implementation of the Master Plan Update would constitute an approximate 0.011 percent increase over the County's typical annual electricity

[35] California Department of Resources Recycling and Recovery, *Green Building Materials*, https://calrecycle.ca.gov/greenbuilding/materials/, accessed February 13, 2023.

[36] California Department of General Services, Procurement Division, Buy Clean California Act, available at: https://www.dgs.ca.gov/PD/Resources/Page-Content/Procurement-Division-Resources-List-Folder/Buy-Clean-California-Act, accessed July 25, 2023.

consumption. Additionally, operational automotive fuel consumption would increase the County's consumption by 0.028 percent. CSULB is currently in the process of phasing out natural gas use by 2035 consistent with the goals of the CSULB CAAP, CARB's 2022 Scoping Plan, and statewide initiatives to ban natural gas appliances after 2030. However, to be conservative, this analysis assumes that natural gas use for operation in 2035 would remain the same as existing conditions. Therefore, implementation of the Master Plan Update would not cause an increase of natural gas consumption over existing conditions.

Table 3.13-5: Master Plan Update and Countywide Energy Consumption

Energy Type	Annual Energy Consumption from Implementation of Master Plan Update[a]	Los Angeles County Annual Energy Consumption[b]	Percentage Increase Countywide
Electricity Consumption[c]	7,417 MWh	65,374,721 MWh	0.011%
Operational Automotive Fuel Consumption[d]	986,469 Gallons	3,539,657,569 Gallons	0.028%

a. As modeled in CalEEMod version 2020.4.0.

b. Electricity consumption related to the Master Plan Update is compared to the total consumption in Los Angeles County in 2021, which is the most recent year for which county data is available. Automotive fuel consumption related to the Master Plan Update is compared with the projected countywide fuel consumption in 2035.

c. Electricity consumption does not account for electric vehicle (EV) charging on campus, as it is speculative to estimate EV ownership of students and staff and the number EVs to be charged on campus. Nevertheless, electricity consumption from EV charging would have nominal impact on Countywide electricity consumption, as CSULB would be required to install solar panels for new buildings on campus which could accommodate the demand from EV charging.

d. Fuel consumption from implementation of the Master Plan Update is calculated based on CalEEMod results for the project. Trip generation and VMT modeled are based on Section 3.11, Transportation, of this EIR. Projected countywide fuel consumption is from CARB's EMFAC2021 model.

Sources: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations, for detailed model input/output data; Los Angeles County electricity consumption data source: California Energy Commission, *Electricity Consumption by County*, available at: http://www.ecdms.energy.ca.gov/elecbycounty.aspx, accessed November 29, 2022.

Building Energy Demand

The CEC developed 2020 to 2035 forecasts for energy consumption and peak demand in support of the 2021 IEPR for each of the major electricity and natural gas planning areas and the state based on the economic and demographic growth projections. The CEC forecasts that the statewide annual average growth rates of energy demand between 2021 and 2030 will be 1.3 percent to 2.3 percent for electricity, and less than 0.1 percent to 0.8 percent increase for natural gas.[37] As shown in Table 3.13-5, the net increase of operational energy consumption from implementation of the Master Plan Update over existing conditions would be approximately 0.011 percent, compared to the current countywide usage, which is below the CEC's forecasts. Therefore, implementation of the Master Plan Update would be consistent with the CEC's energy consumption forecasts and would not require additional energy capacity or supplies. Additionally, as previously discussed, the university intends to apply Net Zero Energy strategies to all new campus buildings such that buildings would be designed to minimize energy consumption. By implementing Net Zero Energy strategies, energy use for new buildings on campus would be

37 California Energy Commission, February 2022, *Final 2021 Integrated Energy Policy Report Volume IV California Energy Demand Forecast*. Annual average growth rates of electricity demand and natural gas per capita demand are shown in Figure 10 and Figure 14 of the report, respectively.

further minimized. Further, as CSULB generally adheres to the same time periods (i.e., class schedules, business hours) as other similar institutions, implementation of the Master Plan Update would not result in unique or more intensive peak or base period electricity demand when compared to other buildings or developments.

The development projects associated with the Master Plan Update would be required to comply with the most current version of the Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the latest Title 24 standards would reduce operational building energy consumption. The Title 24 Building Energy Efficiency Standards are updated every three years and become more stringent between each update; therefore, complying with the latest Title 24 standards would make the new buildings constructed under the Master Plan Update more energy efficient than existing buildings built under the earlier versions of the Title 24 standards.

Furthermore, the electricity provider, SCE, is subject to California's RPS. The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 60 percent of total procurement by 2030, and 100 percent of total procurement by 2045. In addition, CSULB currently generates solar energy on campus, and would increase solar generation throughout the Master Plan Update horizon year. The increase in availability of such energy resources further ensures that new development projects would not waste finite energy resources.

Lastly, developments associated with the proposed Master Plan Update would incorporate the CSU Sustainability Policy's Sustainable Building & Lands Practices, such as providing shade from the sun, taking advantage of coastal breezes, and promoting energy efficiency in the project design. Therefore, implementation of the Master Plan Update would not cause wasteful, inefficient, and unnecessary consumption of building energy during project operation; impacts would be less than significant.

Transportation Energy Demand

Table 3.13-5 estimates the annual fuel consumed by vehicles traveling to and from the CSULB campus, which was calculated from the project's VMT generation. According to the transportation analysis in Section 3.11, Transportation, CSULB would generate approximately 33,237 trips per day in the 2019 baseline year without the project, and 44,113 trips per day in the 2035 horizon year with the project. This would result in a total site-generated VMT of 390,197 miles per day in the 2019 baseline year without the project and 446,213 miles per day in the 2035 horizon year with the project. As indicated in Table 3.13-5, project operation is estimated to consume approximately 986,469 gallons of fuel per year, which would increase the countywide automotive fuel consumption by 0.028 percent.

While countywide automotive fuel consumption would nominally increase during operation, development projects associated with the Master Plan Update encourage alternative modes of transportation. For example, the Master Plan Update projects would comply with the CALGreen Code, which requires new buildings to provide bicycle parking spaces. Additionally, the Master Plan Update proposes to improve pedestrian and bike facilities throughout the campus, which would encourage and support alternative modes of transportation by students, faculty members, and visitors. Additionally, CSULB would encourage and promote the use of alternative transportation and/or alternative fuels related to university-associated transportation, including commuter and business travel per the CSU Sustainability Policy. Lastly, as discussed in Section

3.11, Transportation, total network VMT would be reduced, indicating that implementation of the Master Plan Update would result in more efficient travel patterns across the region. Therefore, fuel consumption associated with vehicle trips generated by implementation of the Master Plan Update would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region, and impacts would be less than significant.

Project-Level Analysis for Near- and Mid-Term Development Projects

Construction

CalEEMod was used to estimate energy usage for the construction activities associated with the following projects: Engineering Replacement Building, New Parkside Housing Village, Faculty and Staff Housing, USU Renovation/Addition and Cafeteria Replacement, Hillside College Renovations/Addition, Beachside Housing, Aquatics Center and Pool Renovation, College of the Arts Replacement Building, New 7th St. Community Outreach Facility, Jack Rose Track/Commencement Facilities, and Walter Pyramid Renovation. Construction of these projects would occur between 2024 and 2031, and would consume energy from fuel used by construction vehicles and equipment. Table 3.13-6 presents the annual energy consumption of the most impactful projects compared to countywide energy consumption.

Table 3.13-6: Project Construction Related and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption[a]	Los Angeles County Annual Energy Consumption (2024)[b]	Percentage Increase Countywide
Construction Off-Road Fuel Consumption[c]	133,841 Gallons	41,923,518 Gallons	0.319%
Construction On-Road Fuel Consumption[c]	2,630,267 Gallons	4,263,453,040 Gallons	0.062%

a. As modeled in CalEEMod version 2020.4.0.
b. Off-road and on-road fuel consumption from implementation of the Master Plan Update is compared to the projected countywide off-road and on-road emissions, respectively, for 2024, which is the first year of construction.
c. Fuel consumption from the Master Plan Update is calculated based on CalEEMod results for the project. Projected countywide fuel consumption is from CARB's EMFAC2021 model.

Source: Refer to Appendix C, Air Quality, Greenhouse Gas Emissions, and Energy Calculations, for detailed model input/output data.

In addition to the projects modeled, other various renovation projects included in the Master Plan Update include academic facilities, pedestrian/bike lane improvements, mobility and open space enhancements, and athletic facilities improvements through the 2035 horizon year. These types of projects are not included in the modeling for energy use as they are considered minor construction projects with short-term schedules, and are not anticipated to result in substantial energy usage.

Similar to the program-level analysis, fossil fuels used for construction vehicles and other energy-consuming equipment would be used during grading, paving, building construction, and architectural coatings. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with state requirements that equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with the latest EPA and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel

efficiency and reduce unnecessary fuel consumption.

Similar to the program-level analysis, energy is required to produce construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass, to construct new facilities or replace/renovate existing facilities. Reductions in energy inputs for construction materials can be achieved by selecting green building materials composed of recycled materials that require less energy to produce than non-recycled materials. The integration of green building materials can help reduce environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of these building industry source materials.[38] The President's Commission on Sustainability encourages selecting sustainable construction materials and products wherever possible, including for renovation projects. The project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials would not substantially increase demand for energy compared to overall local and regional demand for construction materials.

As indicated in Table 3.13-6, both off-road and on-road fuel consumption from construction of the most impactful projects would be approximately 133,841 gallons and 2,630,267 gallons, respectively, which would increase off-road construction equipment diesel fuel use and on-road vehicle fuel consumption in the county by approximately 0.319 percent and 0.062 percent, respectively. When taking all development projects into consideration, the off-road and on-road fuel consumption is not expected to increase significantly as the other projects are shorter in duration and intensity than the most impactful projects. As such, construction under the Master Plan Update would have a nominal effect on the local and regional energy supplies. Additionally, construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or state. Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature, and project-level impacts of the near- and mid-term development projects would be less than significant.

Operation

The operation energy associated with the most impactful projects would include electricity, natural gas, and operational mobile source fuel consumption. As shown in Table 3.13-5, operational energy consumption at the program level would constitute an approximate 0.011 percent increase over the county's typical annual electricity consumption and an approximate 0.028 percent operational vehicle fuel consumption over the county's on-road emissions. Given that each of the most impactful project's is captured within the program-level analysis, operational energy consumption for each project would be less than the estimates presented in Table 3.13-6. Therefore, operational energy consumption from implementation of the individual development projects would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region, and impacts would be less than significant.

UE-7 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Program-Level Analysis for Master Plan Update

The CSU has several regulations that are intended to increase energy efficiency system-wide and

[38] California Department of Resources Recycling and Recovery, *Green Building Materials*, available at: https://calrecycle.ca.gov/greenbuilding/materials/#Material, accessed November 29, 2022.

at individual universities, including the CSU Sustainability Policy, Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University, and Policy 9170. The CSU Sustainability Policy includes several energy goals to increase on-site renewable energy, minimize the use of natural gas, increase renewable electricity sources, and operate CSU buildings and facilities in the most energy-efficient manner possible. Implementation of the Master Plan Update would be consistent with the CSU Sustainability Policy by increasing solar generation throughout the Master Plan Update horizon year, phasing out natural gas by 2035, purchasing renewable electricity, and implementing strategies, such as Net Zero Energy, to operate energy-efficient buildings and facilities on campus. Implementation of the Master Plan Update would also comply with Executive Order 0987 for minimum efficiency standards for new construction and renovations. The implementation of the Master Plan Update would comply with the CSU energy policies, which require that all CSU buildings and facilities be operated in the most energy-efficient manner without endangering public health and safety. Additionally, the requirement to exceed the most current Title 24 standards and comply with the CALGreen Code would ensure that projects developed under the Master Plan Update incorporate energy-efficient windows, insulation, lighting, and ventilation systems, as well as water-efficient fixtures and electric vehicle charging infrastructure. Besides complying with the most current building standards, renovation projects associated with the Master Plan Update would upgrade the infrastructure system, lighting, and HVAC, thus creating more energy-efficient buildings. Additionally, per the RPS, implementation of the Master Plan Update would utilize electricity provided by SCE that would achieve 60 percent of total procurement by 2030, and 100 percent renewable energy by 2045. Therefore, implementation of the Master Plan Update would result in less than significant impacts associated with renewable energy or energy efficiency plans.

Project-Level Analysis for Near- and Mid-Term Development Projects

Similar to the program-level analysis, the individual development projects associated with the Master Plan Update would comply with the CSU Sustainability Policy, Policy Statement on Energy Conservation, Sustainable Building Practices, and Physical Plant Management for the California State University, and Policy 9170. New and replacement projects would be constructed to exceed the current Title 24 standards by 10 percent and comply with the CALGreen Code, which would ensure that the buildings incorporate energy-efficient windows, insulation, lighting, and ventilation systems, as well as water-efficient fixtures and electric vehicle charging infrastructure. Additionally, the new and replacement projects, as well as renovation projects, would be constructed to meet or exceed the minimum requirements equivalent to LEED Silver certification. Renovation projects would be constructed such that they would meet the state building code requirements, including use of energy-efficient HVAC systems and installing LED lighting. For renovation projects that include mobility, circulation, and open space uses and athletic facilities uses, projects would be designed to include drought-tolerant landscaping/turf, which would reduce both the need for irrigation and energy use associated with water consumption. In addition, the near- and mid-term development projects would support progress toward meeting the CAAP's carbon neutrality goal through implementation of various measures, which would minimize electricity and fuel consumption. As such, project-level impacts from development of the near- and mid-term projects associated with renewable energy or related energy plans would be less than significant.

3.13.5 Mitigation Measures

No mitigation measures are required.

3.13.6 Level of Significance After Mitigation

Development under the Master Plan Update would result in less than significant impacts related to utilities and energy.

3.13.7 Cumulative Impacts

Utilities

Utility services for CSULB are provided by LBWD, LACSD, LACFCD, SoCalGas, SCE, and Verizon. Cumulative development in the service areas for these providers would increase utilities usage, which would increase demand for such utilities. The projected campus population growth under the Master Plan Update would also increase the demand for utilities services. Development under the Master Plan Update would result in new or expanded utility facilities within the campus. However, utilities would connect to the existing infrastructure and would not require utilities providers to expand their facilities or capacities, or result in adverse environmental effects. Thus, implementation of the Master Plan Update would not result in the relocation or construction of new or expanded facilities for the utilities providers.

Additionally, implementation of the Master Plan Update would provide improvements to existing utilities infrastructure for water, storm water drainage, electric power, natural gas, and solid waste due to compliance with the CSU Sustainability Policy and CSULB strategies for Net Zero energy, which would improve utility efficiency, reduce flooding, and reduce excess waste. Implementation of the Master Plan Update would also have sufficient water supplies and sewerage capacity. For water supplies, LBWD would have adequate water supply through 2040 and CSULB would continue to implement efforts to reduce water use including expanding the use of reclaimed water on campus. For wastewater, the capacities of the LACSD's wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). All expansions of LACSD's facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the LACSD's treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As discussed in Section 3.9, Population and Housing, the campus population (including students, faculty, and staff) is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy. Therefore, because population growth resulting from the Master Plan Update is already accounted for in SCAG's regional forecast, LACSD's facilities can be anticipated to have sufficient capacity to serve development under the Master Plan Update.

Further, other non-campus related development projects would also be required analyze their demand on utilities and may be required to pay fees to utilities providers or correspond with providers to verify existing capacities to serve other projects. Therefore, the impact of the Master Plan Update on utilities would not be considered cumulatively considerable. Cumulative impacts to utilities would be less than significant.

Energy

The geographic context for cumulative impacts associated with energy consumption for electricity and natural gas is countywide and relative to SCE's and SoCalGas' service areas, respectively. While the geographic context for transportation-related energy use is more difficult to define, it is meaningful to consider the Master Plan Update in the context of countywide consumption. Future growth in Los Angeles County is anticipated to increase the demand for electricity, natural gas, and transportation energy, as well as the need for energy infrastructure. CSULB is phasing out

natural gas usage in its energy mix and would not use natural gas by 2035. As shown above in Tables 3.13-4 and 3.13-5, implementation of the Master Plan Update would only nominally increase the county's electricity, off-road and on-road construction fuel consumption, and operational fuel consumption. Additionally, per the RPS, implementation of the Master Plan Update and related projects would use electricity provided by SCE that would be made of 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045. Furthermore, implementation of the Master Plan Update would be subject to Title 24 and CALGreen standards, as well as goals and policies of the CSU Sustainability Policy, CSULB Strategic Energy Plan, and CSULB CAAP. Related projects would also be subject to Title 24 and CALGreen standards. Thus, the Master Plan Update and related projects would comply with energy conservation plans and efficiency standards required in the region and state to ensure that energy is used efficiently. As such, implementation of the Master Plan Update in conjunction with related projects would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and the Master Plan Update's cumulatively considerable impacts would be less than significant.

CHAPTER 4
OTHER CEQA CONSIDERATIONS

4.0 Introduction

Section 15126 of the CEQA Guidelines requires that all aspects of a project be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation (California Code of Regulations. Title 14, Section 15126). As part of this analysis, the EIR must identify the following types of impacts:

- Significant environmental effects which cannot be avoided if the proposed project is implemented;
- Significant irreversible environmental effects which would be caused by the proposed project should it be implemented; and
- Growth-inducing impacts of the proposed project.

The analysis in this chapter identifies each of these types of impacts based on analyses contained in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures.

4.1 Significant and Unavoidable Impacts

CEQA Guidelines Section 15126.2(c) requires that an EIR describe any significant impacts which cannot be avoided if the proposed project is implemented. As presented in the Executive Summary and evaluated in Sections 3.1 through 3.13, Environmental Setting, Impacts, and Mitigation Measures of this Draft EIR, all environmental impacts, including cumulative impacts, associated with the Master Plan Update would be less than significant or less than significant with mitigation incorporated. The final determination of significance of impacts and of the feasibility of mitigation measures will be made by the CSU Board of Trustees as part of its consideration of project approval and certification of the EIR.

4.2 Significant and Irreversible Environmental Effects

According to CEQA Guidelines Sections 15126(c) and 15126.2(d), an EIR is required to address any significant irreversible environmental changes that would occur should the project be implemented. As stated in CEQA Guidelines Section 15126.2(d):

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.*

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy);

- The project would involve a large commitment of nonrenewable resources; or
- The project involves uses in which irreversible damage could result from any potential environmental accident associated with the project.

4.2.1 Commitment of Future Generations

The CSU system's ownership of the campus represents a long-term commitment of the campus lands to an institutional use, which is consistent with the mission of the CSU. Development under the Master Plan Update would result in the continued commitment of the CSULB campus to institutional uses, thereby precluding any other uses for the lifespan of the campus. Restoration of the campus to pre-developed conditions is not feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

4.2.2 Justification for the Use of Nonrenewable Resources

Development under the Master Plan Update would necessarily consume limited, slowly renewable, and nonrenewable resources in a phased manner over the course of the Master Plan Update. This consumption would occur during the construction phases of development under the Master Plan Update and continue during its operational lifetime. Construction materials that would be required include certain types of lumber and other forest products; aggregate materials used in concrete and asphalt, such as sand, gravel, and stone; metals, such as steel, copper, and lead; and petrochemical construction materials, such as plastics. Construction activities associated with development under the Master Plan Update would also use nonrenewable energy resources, primarily in the form of fossil fuels, such as petroleum and diesel, for construction vehicles and equipment. Operational activities associated with development under the Master Plan Update would require the ongoing use of water, electricity, and fossil fuels.

Although implementation of the Master Plan Update would consume nonrenewable resources, it would not represent the unnecessary, inefficient, or wasteful use of resources, as analyzed in Section 3.13, Utilities and Energy, of this Draft EIR. As discussed therein, construction activities would comply with the latest U.S. Environmental Protection Agency and California Air Resources Board emissions standards to reduce unnecessary fuel consumption and utilize green building materials to reduce environmental impacts associated with the extraction, transport, processing, fabrication, installation, reuse, recycling, and disposal of building industry source materials. Operational activities would comply with the most current version of the Title 24 Building Energy Efficiency Standards, comply with the California Green Building Standards Code, and incorporate the CSU Sustainability Policy's Sustainable Building & Lands Practices that would reduce energy consumption. The majority of newly constructed buildings under the Master Plan Update would minimize or eliminate the use of natural gas, thereby reducing CSULB's use of fossil fuels. With regard to water resources, the Long Beach Water Department would have adequate water supply through 2040 to serve development under the Master Plan Update, and CSULB would continue to implement water conservation efforts to reduce water use.

Furthermore, implementation of the Master Plan Update would also achieve the underlying project purposes identified in Chapter, Project Description, of this Draft EIR: support and advance the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035. Toward this end, the objectives for implementation of the Master Plan Update include the following: accommodate gradual student enrollment growth; optimize the existing campus space and minimize net new gross square footage; renovate or demolish inefficient and aged buildings; support an expanded residential environment; strengthen the physical connection between the two existing housing

villages; preserve space in the campus core for academic uses and student-focused facilities; retain and recruit high-quality faculty by providing on-campus affordable housing options; provide new graduate student and faculty housing at the perimeter of the campus; provide mobility and accessibility improvements; provide defined campus gateways and edges with increased wayfinding and signage; and provide high-quality athletic facilities and optimize existing fields. Thus, implementation of the Master Plan Update would optimize the existing physical assets of the campus, enhance the efficiency of facilities throughout the campus, and evolve the existing buildings and programs to accommodate future campus needs. As such, implementation of the Master Plan Update would not involve a large commitment of nonrenewable resources, nor would the use of nonrenewable resources be unjustified.

4.2.3 Potential Environmental Accidents

Implementation of the Master Plan Update would not result in significant impacts related to hazards and hazardous materials, as determined in the Initial Study (Appendix A). As discussed therein, construction activities would involve the temporary use, storage, and transport of hazardous materials typical of construction of buildings, such as asphalt, fuels, lubricants, paints, cleaners, and solvents. Construction contractors are required to comply with CSU construction specifications, including working with the University's Office of Health & Safety and complying with the CSU standards set forth in PolicyStat, which would minimize the potential for environmental accidents that could result in irreversible environmental damage. Operation of some improvements implemented pursuant to the Master Plan Update would involve the routine use of hazardous materials, such as cleaners and common chemicals used for landscaping and maintenance, similar to current operations. Additionally, colleges that require laboratories that use, store, and dispose of hazardous materials would abide by their respective hazardous materials plans, similar to existing conditions. Implementation under the Master Plan Update would adhere to the CSULB Environmental Compliance Program, which protects the campus through employee training programs, procedures, and policies designed to ensure the safe handling and storage of hazardous materials, and proper disposal of hazardous wastes. With adherence to existing hazardous materials regulations, the potential for implementation of the Master Plan Update to cause irreversible damage from accident conditions is very low.

4.3 Growth Inducing Impacts

As required by the CEQA Guidelines, an EIR must discuss ways in which a potential project could induce growth. This discussion should include consideration of the ways in which the project could directly or indirectly foster economic or population growth in adjacent and/or surrounding areas. The removal of obstacles to population growth (such as removal of infrastructure limitations or regulatory constraints) must also be considered in this discussion. According to CEQA Guidelines Section 15126.2(e), "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

According to the CEQA Guidelines, a project would have the potential to induce growth if it would:

- Result in economic expansion and population growth through employment opportunities and/or construction of new housing; or
- Remove obstacles to population growth (e.g., through the expansion of public services into an area that does not currently receive these services), or through the provision of new access to an area, or a change in restrictive zoning or land use designation.

4.3.1 Direct Population Growth

As discussed in Section 3.9, Population and Housing, of this Draft EIR, implementation of the Master Plan Update would result in direct population growth through the development of student facilities and services that allow for increased student enrollment and increased campus population. The Master Plan Update is anticipated to result in a net increase in the on-campus population of 5,466 FTES, FTE employees, auxiliary employees, and faculty/staff household members through the horizon year 2035. However, as an urban commuter campus, it is anticipated that most of the net new on-campus student and employee population would come from within the Southern California Association of Governments (SCAG) region and is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). Faculty and staff employment growth, which anticipates 723 additional employees by 2035, is also accounted for in the 2020-2045 RTP/SCS, which projects a net increase of 9,304,000 jobs in the SCAG region by the year 2035. The net increase in the total campus population resulting from the proposed Master Plan Update would represent approximately 0.03 percent of the population in the SCAG region, 0.05 percent of the population in Los Angeles County, 0.16 percent of the population in Orange County, and 1.1 percent of the population in the City of Long Beach in the horizon year 2035. Therefore, the net increase in the on-campus population and faculty and staff employment resulting from the Master Plan Update is considered planned growth in the SCAG region.

Additionally, the Master Plan Update would accommodate the anticipated increase in campus population with the development of new housing. This new housing developed under the Master Plan Update would result in net increases of approximately 1,602 new student beds and approximately 285 new faculty and staff housing units, reducing the demand for off-campus housing. The projected campus housing is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS, which are also used to determine the RHNA allocation for each local jurisdiction within the SCAG region. The net new student beds and faculty/staff housing units proposed in the campus housing projects would represent approximately 0.03 percent of the housing in the SCAG region, 0.06 percent of the housing in Los Angeles County, 0.19 percent of the housing in Orange County, and 1.2 percent of the housing in the City of Long Beach in the horizon year 2035. In addition, the net increase of approximately 1,602 new student beds proposed under the Master Plan Update would support the goal of the CSULB Housing Capacity Expansion Plan to increase the total number of student beds by 1,000 by 2035. Therefore, the proposed campus housing projects under the Master Plan Update would not create a need for construction of new off-campus housing and would not directly induce substantial unplanned population growth in the area.

4.3.2 Indirect Economic Growth

Aside from the direct increase in total campus population, changes to the local and regional population may be indirectly induced by economic growth from an increased demand for goods and services in the area. Changes in the local and regional population could occur from the creation of additional commercial development to serve the campus population, resulting in new employment opportunities in the surrounding area. However, any commercial development resulting from this indirect and induced economic growth would be subject to the planning, permitting, and discretionary actions and approvals of the local jurisdictions, such as the City of Long Beach. Additionally, due to the urbanized and developed nature of the City of Long Beach, development would likely occur on underutilized parcels, resulting in infill development. Furthermore, substantial growth in jobs would be evaluated for consistency with growth forecasts for the SCAG region and local jurisdiction plans. With regard to the overall region, this growth would likely represent a minor contribution to regional population and economic growth due to the

incremental increase in total campus population (5,466 FTES, FTE employees, auxiliary employees, faculty/staff household members over 15 years) and available goods and services that already exist within the City of Long Beach and neighboring areas.

4.3.3 Indirect Population Growth

As discussed in Section 3.9, Population and Housing, of this Draft EIR, development under the Master Plan Update would consist of renovation and redevelopment of existing facilities and new, infill development within the existing campus boundaries to accommodate the projected net increase in campus population through the horizon year. Proposed mobility and parking improvements would enhance connections to existing facilities within and through the main campus to support the existing and projected campus population through the horizon year and would not extend the capacity of existing roadways. Utilities required to operate the proposed development under the Master Plan Update would be constructed as part of the Master Plan Update and would connect to the existing utility infrastructure network serving the CSULB main campus and Beachside Village property. Upgrades to utilities would be designed to adequately serve the projects under the Master Plan Update and would not result in additional infrastructure capacity that would induce unplanned growth. Therefore, the renovation, replacement, and new projects under the Master Plan Update would not result in substantial indirect growth in the SCAG region.

CHAPTER 5
ALTERNATIVES

5.1 Introduction

Alternatives to the Master Plan Update have been considered in this EIR to explore potential means to mitigate or avoid the significant environmental impacts associated with implementation of the Master Plan Update while still achieving the primary objectives of the project. Pursuant to Section 15126.6(a) of the CEQA Guidelines, an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparative merits of the alternatives. The CEQA Guidelines also state that an EIR need not consider every conceivable alternative or consider alternatives that are infeasible. Under CEQA, factors that can determine feasibility are site suitability, economic limitations, availability of infrastructure, consistency with applicable plans, regulatory limitations, and jurisdictional boundaries. An EIR should present a reasonable range of feasible alternatives that will support informed decision making and public participation regarding the potential environmental consequences of a project and possible means to address those consequences. An EIR need not consider alternatives whose effects cannot be reasonably ascertained and whose implementation is remote or speculative.

The alternatives analysis must also include a comparative evaluation of the No Project Alternative in accordance with Section 15126.6(e) of the CEQA Guidelines to determine the consequences of not implementing the project. Through the identification, evaluation, and comparison of alternatives, the relative advantages and disadvantages of each alternative compared with the proposed Master Plan Update can be determined.

No public or agency comments related to alternatives were received in response to the NOP. For a complete list of public comments received during the public scoping period, refer to Appendix A.

5.1.1 Project Objectives

The following objectives have been identified to support the underlying purpose of the Master Plan Update to support and advance the CSULB mission, vision, and values by guiding the physical development of the campus and to accommodate changes in enrollment through the horizon year 2035:

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth to approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

2. Optimize the existing campus space and minimize net new gross square footage.

3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.

4. Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces.

5. Support an expanded residential environment by constructing new or replacement

buildings or renovating existing student housing villages to:

- Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention;
- Include a more diverse mix of housing typologies for students (pod configurations, suites, and apartments);
- Provide high quality and affordable options with an equitable mix of offerings for students; and
- Include common spaces, active outdoor spaces, and space for student services.

6. Strengthen the physical connection between the two housing villages on the CSULB main campus.
7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.
8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.
9. Provide new faculty and staff housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.
10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.
11. Provide defined campus gateways and edges with increased wayfinding and signage to highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.
12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

5.2 Alternatives Development Process

In order to fulfill the project objectives, several alternatives to the proposed Master Plan Update have been considered, including alternate designs and reducing the amount of development proposed. Additionally, Section 15126.6(f)(2) of the CEQA Guidelines requires that an EIR consider alternative locations to the project site. Several alternative locations have been considered, including alternative site plans, off-campus development, an alternate location for the proposed Faculty and Staff Housing project, and alternate locations for proposed near- and mid-term development projects that would impact individually eligible historical resources and within archaeologically sensitive areas.

The range of alternatives has been refined through the Master Planning process to determine those alternatives that could be eliminated from further consideration and those alternatives that would be carried forward for detailed analysis in this EIR. A discussion of the alternatives that were considered but ultimately dismissed and the reasons for their elimination are provided in

Section 5.3 below. Section 5.4 summarizes the two alternatives that have been carried forward for detailed analysis in this EIR.

5.2.1 Summary of Master Plan Update Impacts

Based on the environmental analysis conducted for the proposed Master Plan Update contained in Chapter 3, Environmental Setting, Impacts, and Mitigation Measures of this EIR, potentially significant impacts that have been determined to require mitigation have been identified for:

- Aesthetics – construction lighting and proposed new permanent lighting at the Jack Rose Track/Commencement Facilities;
- Biological resources – construction impacts to nesting birds and roosting bats, regulatory review for improvements over and adjacent to Bouton Creek;
- Cultural resources – construction-related impacts to historic resources and archaeological resources;
- Geology, soils, and paleontological resources – construction-related impacts to paleontological resources;
- Noise – construction noise and crowd noise during events held at the proposed Jack Rose Track/Commencement Facilities; and
- Tribal cultural resources – construction-related impacts to potential tribal cultural resources.

The EIR identifies less than significant impacts for air quality, greenhouse gas emissions, hydrology and water quality, population and housing, public services and recreation, transportation, and utilities and energy.

No significant and unavoidable impacts have been identified for implementation of the Master Plan Update.

5.3 Alternatives Considered but Dismissed from Detailed Analysis

Section 15126.6(c) of the CEQA Guidelines requires that an EIR identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among factors that may be used to eliminate alternatives from detailed consideration in the EIR are: (1) failure to meet most of the basic project objectives, (2) infeasibility, and (3) inability to avoid significant environmental impacts. The following alternatives were eliminated from further consideration in the EIR.

5.3.1 Reduced Development Alternative

The Master Planning process included an assessment of the current and future needs of the university in terms of space planning, programming, on-campus housing availability, open space and landscaping, and mobility and circulation to determine the improvements that would be needed to accommodate the projected future student enrollment of approximately 36,000 FTES and a total campus population of 38,165, which also includes FTE employees, auxiliary employees, and faculty/staff household members through the horizon year. Iterations of the proposed Master Plan Update with a reduced overall amount of development were considered throughout the planning process. However, in the course of refining the Master Plan, the programming needs of the various divisions that comprise the university and the need to upgrade

outdated facilities were recognized and prioritized. Thus, targeted improvements were identified that would support the future projected campus population in a way that limits the net new gross square footage developed by using options such as renovation and replacement of existing facilities. As such, the proposed Master Plan Update reflects that balance, and reducing development would not allow for the improvements necessary to accommodate changes in enrollment and campus population through the horizon year. Therefore, this alternative has been eliminated from further consideration.

5.3.2 Alternative Site Plans

Throughout the Master Planning process, several site plan configurations were considered for the proposed facilities and improvements within the CSULB property boundaries that would accommodate the gradual student enrollment growth to approximately 36,000 FTES and total campus population growth to 38,165, which also includes FTE employees, auxiliary employees, and faculty/staff household members, by 2035. These various configurations would not reduce the overall amount of planned development at the CSULB main campus or Beachside Village property. Improvements have been identified based on a need to renovate, replace, or develop new facilities, and development would occur in generally the same locations as identified in the proposed Master Plan Update. Additionally, several proposed improvements under the Master Plan Update are specific to the type of programming at that particular site, and alternative site plans may not accommodate the programming needs of a project. Furthermore, the site planning presented in the Master Plan Update considers known and potentially sensitive resources within the CSULB property, and every effort has been made to identify facility and development locations at sites that would avoid sensitive resources, such as biological resources, historical resources, archaeological resources, and tribal cultural resources. As such, slight variations to individual site plans for proposed improvements would not avoid or substantially lessen any of the potentially significant impacts associated with implementation of the proposed Master Plan Update, and the same level of development and campus population growth would occur regardless of the site plan configuration. Therefore, alternative site plans are not evaluated further in this EIR.

5.3.3 Alternate Location – Off-Site Development Alternative

As discussed throughout this EIR, CSULB property comprises the CSULB main campus and the Beachside Village property. One of the primary objectives of the Master Plan Update is to optimize the existing campus space and minimize net new gross square footage. Thus, the proposed improvements under the Master Plan Update reflect the focus on renovation and replacement of existing facilities, rather than construction of new facilities. Additionally, due to their age, many of the facilities at the main campus have outdated infrastructure, which results in operational inefficiencies, such as plumbing, HVAC costs, and poor accessibility and circulation. Acquiring new property outside of the existing CSULB property boundaries would not eliminate the need to renovate and modernize the existing facilities.

CSULB does not own or lease any other property that could be used to develop the facility improvements proposed under the Master Plan Update. Additionally, CSULB is located in the fully developed urban area of the City of Long Beach and purchasing or otherwise acquiring off-site property may not be reasonably financially or logistically feasible. Any off-site property would require the development of a new satellite campus or off-campus center detached from the main campus. Large vacant parcels are not readily available in the surrounding area. As such, the Off-Site Development Alternative would likely require the purchase of several adjoining parcels. Any purchased or acquired parcels near the CSULB main campus would require the demolition of existing uses and construction of CSULB facilities. Additionally, operation of satellite campus or off-campus center facilities would require increases in faculty and staff, operating costs

associated with maintaining multiple properties, which may result in increases to other operational parameters, such as vehicular travel trips, air quality and GHG emissions, and utility usage. As discussed, the CSULB main campus and Beachside Village property are surrounded by residential neighborhoods and neighborhood-serving commercial uses. Construction and operation of a new satellite campus would potentially result in increased impacts on adjacent residential properties, as compared to the proposed Master Plan Update, the implementation of which would occur on existing CSULB property. Furthermore, the Off-Site Development Alternative would not support or achieve most of the project objectives. Therefore, this alternative has been eliminated from further consideration.

5.3.4 Alternate Location – 7th Street Faculty and Staff Housing

Under the proposed Master Plan Update, the Faculty and Staff Housing project would be located at the perimeter of the CSULB main campus near the northwest corner of State University Drive and Palo Verde Avenue. An alternate location was considered for this project near 7th Street and West Campus Drive at the proposed location of the New 7th Street Community Outreach Facility. 7th Street is a highly traveled six-lane roadway that constitutes the southern boundary of the CSULB main campus. At this location, 7th Street is connected to the western terminus of SR-22, which provides regional access to CSULB and the surrounding area. As such, in the course of identifying improvements and development projects to be implemented under the Master Plan, it was determined that the 7th Street site would be better suited for a community use, rather than campus housing. Therefore, this alternative has been eliminated from further consideration.

5.3.5 Alternate Locations – Theatre Arts Renovation Project and University Student Union Renovation/Addition & Cafeteria Replacement Project

As discussed in Section 3.4, Cultural Resources, the University Student Union (USU) and the Theatre Arts building have been identified as historical resources that are potentially eligible for listing on the National Register of Historic Places and the California Register of Historical Resources, as well as contributors to the potentially eligible 27-building Upper Campus historic district. As such, the proposed USU Renovation/Addition and Cafeteria Replacement project and the Theatre Arts Renovation project have the potential to result in impacts to these historical resources. However, alternate sites for these projects were eliminated from detailed evaluation because they involve site-specific renovations to existing purpose-built facilities that remain useful for and suited to their intended programmatic purposes, which would be infeasible to relocate because of their specialized nature (e.g., programming at the Theatre Arts building requires a stage and associated seating, which already exist in the building). Relocating this programming to other sites within the boundaries of the CSULB main campus would not eliminate the need to renovate and modernize the existing buildings to accommodate other programs and could also require the construction of new buildings and net new square footage, which could increase impacts on other environmental resources. Furthermore, the Theater Arts programming and USU and Cafeteria are centrally located within the upper campus in proximity to related programming, academic facilities, and student services. Thus, relocating these facilities elsewhere on the main campus would result in fragmented programming. As a result, it was determined that identifying alternate sites for Theater Arts programming and cafeteria uses would not avoid or substantially lessen any of the potentially significant impacts to historical resources associated with implementation of the proposed Master Plan Update.

Additionally, feasible mitigation measures HR-A through HR-F have been identified to reduce all potentially significant impacts to historical resources to less than significant. Mitigation Measures HR-A through HR-F comprehensively address initial project review by a qualified architectural historian for individually eligible historical resources; development of an Adaptive Mitigation

Management Program for the historic district; Historic American Building Survey Level II documentation; preparation and implementation of an interpretive program; salvage of character-defining features for educational and interpretive purposes or reuse; and project review by a qualified architectural historian during construction. Therefore, this alternative has been eliminated from further consideration.

5.3.6 Alternate Location – Known and Potentially Eligible Archaeological Resources

As discussed in Section 3.4, Cultural Resources, there is one known archaeological resource and several potentially eligible archaeological resources within the CSULB main campus. Proposed improvements and projects to be implemented under the Master Plan Update within the boundaries of the known archaeological resource include the Improved Campus Entrance at Bellflower Boulevard, which includes replacement of existing pavement, changing out the letters on the existing entrance sign, and landscaping updates such as planting and replacement of trees; Pedestrian and Bike Lane Improvements, which includes replacement of existing pavement; and the Hillside College Renovations/Addition project, which would include 10,000 square feet of additions/improvements and interior renovations. Construction activities in the areas containing archaeological resources could result in significant impacts. However, alternate sites for development of the Improved Campus Entrance at Bellflower Boulevard, Pedestrian and Bike Lane Improvements, and the Hillside College Renovations/Addition project were not considered because these are site-specific improvements that would occur at existing facilities and do not represent development of any new facilities that could be located elsewhere within the boundaries of the CSULB main campus. Both the Improved Entrance at Bellflower Boulevard and the Pedestrian and Bike Lane Improvements would require minor ground-disturbing activities associated with replacement paving that would not disturb materials below the existing right-of-way. The primary construction activities associated with the Hillside College Renovations/Addition would be interior renovations rather than ground-disturbing activities.

Additionally, projects that would be implemented under the Master Plan Update that would overlap with the potentially eligible archaeological resources include the Aquatics Center and Pool Renovation, Engineering Replacement Building, Faculty and Staff Housing, Jack Rose Track/Commencement Facilities, and Baseball Field Conversion to Multi-Use Field. The proposed Aquatics Center and Pool Renovation, Jack Rose Track/Commencement Facilities, and Baseball Field Conversion to Multi-Use include renovations at existing facilities that could not be located elsewhere within the main campus. While the Engineering Replacement Building and Faculty and Staff Housing projects represent new facilities, they would be constructed on sites containing existing facilities. The Engineering Replacement Building would demolish the existing EN2, EN3, and EN4 buildings and consolidate the programming and uses in those buildings into a new, larger building at the same site. Considering an alternate site for the Engineering Replacement Building would place the proposed programming farther from related College of Engineering buildings and programs on the main campus, which would interfere with the educational curriculum of the Engineering department, rendering an alternate site infeasible. An alternate site for the Faculty and Staff Housing project was considered but rejected from further consideration, as discussed in Section 5.3.4 above.

The required mitigation includes consultation with a qualified archaeologist to identify avoidance or minimization measures to ensure that development under the Master Plan Update would not impact cultural resources. The measures comprehensively address initial project review; approval of designated staging and stockpiling areas for individual development projects; Worker Environmental Awareness Programs; treatment of unanticipated finds of human remains; extended Phase I investigations; Construction Monitoring and Discovery Plans for projects within

or in close proximity to known and potentially eligible archaeological sites; conduct of archaeological monitoring; evaluation of unanticipated finds and Phase II testing; Treatment Plans; Phase III Data Recovery Plans; reporting; and curation and final disposition of archaeological materials. All potentially significant impacts to archaeological resources would be mitigated to less than significant levels with implementation of Mitigation Measures AR-A through AR-K.

Therefore, as many of the proposed improvements within archaeological resources-sensitive areas are proposed at existing facilities and/or would not require major ground-disturbing activities, and feasible mitigation has been identified to reduce all potentially significant impacts to less than significant, this alternative has been eliminated from further consideration.

5.4 Alternatives Carried Forward for Detailed Analysis

Two alternatives have been carried forward for detailed analysis in this EIR, including the "No Project Alternative," as required by CEQA. In accordance with CEQA Guidelines Section 15126.6(d), each alternative has been evaluated in sufficient detail to determine whether the overall environmental impacts of the alternatives would be less than, similar to, or greater than the corresponding impacts identified for the proposed Master Plan Update. The alternatives carried forward for detailed analysis in this chapter include:

- No Project Alternative: This alternative considers limited continued buildout of the campus in accordance with the approved 2008 Master Plan.
- Faculty and Staff Housing Design Alternative: This alternative was selected for its potential to reduce or avoid the significant but mitigable impacts identified for the Master Plan Update related to aesthetics; biological resources; cultural resources; geology, soils, and paleontological resources; noise; and tribal cultural resources.
- Reduced Development Footprint Alternative: This alternative would eliminate proposed near-term development projects that partially overlap significant or potentially significant archaeological resources. The alternative was chosen for its potential to avoid significant but mitigable impacts identified for the Master Plan Update related to archaeological resources.

5.4.1 No Project Alternative

Pursuant to CEQA Guidelines Section 15126.6(e)(3)(A), when the project is the revision of an existing land use plan, the No Project Alternative is defined as the continuation of the existing plan into the future. Under this alternative, the proposed Master Plan Update would not be adopted and the proposed improvements to CSULB facilities and individual development projects identified to accommodate the gradual student enrollment growth of approximately 36,000 FTES and overall campus population of 38,165, which includes FTE employees, auxiliary employees, and faculty/staff household members by 2035 would not be implemented. The renovation of existing facilities and the optimization of the physical assets on campus proposed under the Master Plan Update would not occur under this alternative. Instead, CSULB would continue to operate in accordance with the 2008 Master Plan, as amended most recently in July 2020, which includes proposed improvements to campus facilities to accommodate up to 31,000 FTES. Additionally, any new mitigation measures identified to avoid potentially significant impacts under the proposed Master Plan Update would not be implemented and mitigation applicable to development under the No Project Alternative would be limited to those measures already adopted in conjunction with the 2008 Campus Master Plan EIR and 2020 Supplemental EIR.

Under the No Project Alternative, the improvements and facilities under the 2008 Master Plan that have not yet been constructed could be implemented as proposed under the existing plan (refer to Figure 2-3, Existing Campus Master Plan, in Chapter 2, Project Description). Improvements proposed under the 2008 Master Plan that have not yet been developed include the following:

- a new soccer field complex at the George Allen Field in the North District which includes bleacher seating to accommodate approximately 1,000 spectators on the east side of the field, locker rooms, ticket booths, public restrooms, and food concessions;
- a new parking structure at the location of the existing surface Parking Lot G6 north of the Bouton Creek channel in the West District; and
- the addition of the remaining 925 beds of the originally proposed 2,000 student housing beds, which would be provided in existing student housing buildings at the CSULB main campus with no new housing buildings being constructed.

Therefore, the following impact analysis for the No Project Alternative considers the implementation of these improvements (new soccer field complex, new parking structure, and the addition of 925 beds).

Additionally, if the proposed Master Plan Update is not implemented, other new development projects proposed in future would require individual environmental review and would not be evaluated as part of a comprehensive plan.

Impact Analysis

Aesthetics

As discussed in Section 3.1, Aesthetics, nighttime construction activities associated with development under the Master Plan Update would potentially result in spillover lighting on adjacent residential uses, requiring implementation of mitigation measure AES-A to reduce impacts to less than significant. The 2008 Master Plan EIR did not identify any mitigation measures for nighttime construction lighting. The three projects that would be implemented under the No Project Alternative include a new soccer field complex, a new parking structure, and the addition of 925 beds provided in existing student housing buildings at the CSULB main campus. All three projects would be located on the interior of the main campus. As such, all construction under the No Project Alternative would occur within the interior of the CSULB main campus away from off-site sensitive residential properties. As such, this alternative would not have the potential to result in spillover light and glare impacts if nighttime construction activities are required. Therefore, light and glare impacts from construction under the No Project Alternative would be reduced as compared to the proposed Master Plan Update.

Under the Master Plan Update, the proposed Jack Rose Track/Commencement Facilities improvements would introduce new permanent flood lighting, requiring implementation of Mitigation Measure AES-B to reduce potential light and glare impacts during operation to less than significant. The No Project Alternative would not construct the Jack Rose Track/Commencement Facilities project and would not require the associated operational lighting mitigation. The 2008 Master Plan included the installation of new field lighting at the George Allen Soccer Field on the CSULB main campus, which has been installed and is currently operational. As such, no new field lighting would be installed under the No Project Alternative. All other operational lighting, including security lighting, parking lighting, and interior building lighting installed under the No Project Alternative would be located on the interior of the CSULB main campus and would not be visible from off-site residential properties.

Additionally, similar to the proposed Master Plan Update, all development on the campus under the No Project Alternative would be required to comply with the applicable development standards and regulations for exterior lighting under the California Building Standards Code, the CSU Outdoor Lighting Design Guide, and the CALGreen-mandated BUG ratings for exterior lighting related to light and glare. Therefore, light and glare impacts would be less than significant during operation under the No Project Alternative. Because the No Project Alternative would avoid the potentially significant impact associated with the new permanent lighting at the Jack Rose Track/Commencement Facilities, impacts would be reduced as compared to the proposed Master Plan Update.

Air Quality

As discussed in Section 3.2, Air Quality, implementation of the Master Plan Update would result in less than significant impacts related to air quality and would not require mitigation. The 2008 Master Plan EIR identified significant and unavoidable air quality impacts associated with peak construction activity and operational air quality emissions projected for the year 2020, the horizon year identified for the 2008 Master Plan. As shown in Table 3.2-9 in Section 3.2, Air Quality, air quality emissions were calculated for the proposed Master Plan Update for the baseline year of 2019 and for the buildout horizon year of 2035. The net change in operational air quality emissions indicates that none of the SCAQMD thresholds for criteria pollutants would be exceeded with implementation of the Master Plan Update.

Construction of new facilities under the No Project Alternative would be limited to a new soccer field complex and a new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. Although the 2008 Master Plan EIR identified significant and unavoidable air quality impacts during construction, the intensity of construction analyzed was greater than the two construction projects (the new soccer field complex and new parking structure) that would be developed under the No Project Alternative. As such, construction emissions under this alternative would not reach the peak emissions identified in the 2008 Master Plan EIR. Additionally, the analysis of air quality emissions in the 2008 Master Plan EIR used the Ambient Air Quality Standards and emissions factors in effect at that time, neither of which are currently applicable. The two development projects under this alternative would be constructed during the planning horizon through 2035. As discussed in Section 3.2, Air Quality, of this EIR, USEPA Tier 4 emissions standards require the use of construction equipment with low emission factors and high energy efficiency. The use of such equipment and ongoing compliance with current regulatory requirements would be applicable to construction activities under this alternative and would minimize construction-related emissions. As less development would occur under this alternative, construction air quality emissions would be reduced as compared to the Master Plan Update. Therefore, construction air quality impacts would be reduced under the No Project Alternative as compared to the Master Plan Update.

The 2008 Master Plan EIR identified significant and unavoidable operational air quality impacts. Operational air quality emissions under the No Project Alternative would be associated with mobile sources (i.e., vehicle trips) and stationary sources, such as energy used during operation of the ancillary facilities developed for the soccer field complex and operation of the parking structure. The 925 new student beds added under this alternative would be provided in existing student housing buildings. As these buildings are already operating, no significant increase in air quality emissions would be associated with the addition of new student beds under this alternative. Operational vehicle trip generation is based on the total campus population. While development under the No Project Alternative would accommodate up to 31,000 FTES, it is

anticipated that the gradual student enrollment growth at CSULB would continue to grow at the 1% anticipated annual growth per the CSU Chancellor's Office beyond the 2020 horizon year identified in the 2008 Master Plan. Additionally, it is anticipated that faculty, staff, and employees would also gradually increase accordingly. Therefore, vehicle trip generation would be nominally different and would result in similar mobile source air quality emissions. Additionally, operation of the new ancillary facilities at the new soccer field complex and operation of the new parking structure under this alternative would require energy usage, which contributes to stationary source emissions. The 2008 Master Plan EIR identified mitigation requiring CSULB to exceed Title 24 energy saving requirements by 15 percent or more on all new or renovation projects. CSULB already exceeds Title 24 energy efficiency requirements, which would be incorporated into the projects developed under this alternative. However, with less new development at the CSULB main campus, aged or outdated utility infrastructure at existing facilities would remain in place and updates to enhance utility and energy efficiency, which would also result in decreased air quality emissions, would not be implemented. Therefore, stationary source emissions under the No Project Alternative would be increased as compared to the Master Plan Update. Therefore, operational air quality impacts under the No Project Alternative would be greater than under the Master Plan Update.

Biological Resources

As discussed in Section 3.3, Biological Resources, removal of vegetation and structures during construction activities associated with implementation of the proposed Master Plan Update would result in potentially significant impacts to special-status bird species and roosting bats, and thus, would require the implementation of Mitigation Measures BIO-A and BIO-B to reduce impacts to less than significant. The projects that would be implemented under the No Project Alternative (new soccer field complex, new parking structure, and the addition of 925 student beds) would not require the removal of substantial amounts of vegetation or buildings or structures. However, the 2008 Master Plan EIR did not identify any mitigation measures for biological resources. Projects that occur on campus would be required to adhere to the Migratory Bird Treaty Act and California Fish and Game Code (CFGC) Sections 3500-3516 that prohibit take of all birds and their active nests including raptors and other migratory nongame birds. However, no pre-construction nesting bird or roosting bat surveys (i.e., Mitigation Measures BIO-A and BIO-B under the Master Plan Update, respectively) would be implemented under the No Project Alternative. Thus, construction activities associated with development under this alternative could result in potentially significant impacts to special-status bird species and roosting bats. Therefore, impacts to special-status wildlife species would be greater under the No Project Alternative than under the proposed Master Plan Update.

The No Project Alternative would not involve construction activities over or adjacent to the Bouton Creek channel, an aquatic feature potentially falling under federal and/or state jurisdiction. As such, no regulatory review would be required, as outlined in Mitigation Measure BIO-C under the proposed Master Plan Update. Therefore, no impacts to aquatic features would occur under the No Project Alternative and impacts would be reduced as compared to the proposed Master Plan Update.

As discussed in Section 3.3, Biological Resources, there are no migratory wildlife movement corridors within the boundaries of the CSULB main campus. Therefore, no impact would occur under the No Project Alternative, similar to the proposed Master Plan Update.

Cultural Resources

As discussed in Section 3.4, Cultural Resources, there are several archaeological resources within the CSULB main campus and ground-disturbing activities during construction would result in potentially significant impacts to archaeological resources, requiring implementation of Mitigation Measures AR-A through AR-K to reduce impacts to less than significant. Construction of new facilities under the No Project Alternative would be limited to a new soccer field complex and a new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. The 2008 Master Plan EIR also identified mitigation for ground-disturbing activities that would apply to construction activities under the No Project Alternative. Similar to the proposed Master Plan Update, impacts to archaeological resources under the No Project Alternative would be less than significant with implementation of mitigation measures. However, because the No Project Alternative would require less ground disturbance and construction activities for the approved projects that could be implemented would not occur within the boundaries of known or potentially eligible archaeological resources, impacts to archaeological resources under the No Project Alternative would be reduced as compared to the proposed Master Plan Update.

As discussed in Section 3.4, Cultural Resources, construction activities associated with implementation of the Master Plan Update would result in potentially significant impacts to historical resources, requiring implementation of Mitigation Measures HR-A through HR-F to reduce impacts to less than significant. The No Project Alternative would not involve development that could impact individually eligible historical resources or the Upper Campus Historic District. Therefore, impacts to historical resources under the No Project Alternative would be reduced as compared to the proposed Master Plan Update.

Geology and Soils

As discussed in Section 3.5, Geology, Soils, and Paleontological Resources, ground-disturbing activities extending to a depth of 4 feet or greater below ground surface during construction would result in potentially significant impacts to paleontological resources, requiring implementation of Mitigation Measures GEO-A through GEO-D to reduce impacts to less than significant. The three projects that would be implemented under the No Project Alternative include a new soccer field complex, a new parking structure, and the addition of 925 beds provided in existing student housing buildings at the CSULB main campus. The 2008 Master Plan EIR identified mitigation related to the discovery of paleontological resources. The only development under the No Project Alternative that may require excavations of 4 feet or more below ground surface is the new parking structure. Although development under the No Project Alternative would involve less overall ground disturbance than the proposed Master Plan Update, the 2008 Master Plan does not require project review by a qualified paleontologist or paleontological monitoring as outlined in Mitigation Measures GEO-A and GEO-B and, as such, there is a slightly increased risk of encountering previously unknown paleontological resources. Therefore, although impacts to paleontological resources would be less than significant with implementation of mitigation, impacts under the No Project Alternative would be slightly greater than the proposed Master Plan Update.

Greenhouse Gas Emissions

As discussed in Section 3.6, Greenhous Gas Emissions, implementation of the Master Plan Update would result in less than significant impacts related to GHG emissions and would not require mitigation. The 2008 Master Plan EIR did not include an analysis of GHG emissions, as it

was not required under CEQA at the time that document was prepared. GHG emissions were calculated for the proposed Master Plan Update for the baseline year of 2019 and for the buildout horizon year of 2035. The net change in operational GHG emissions was calculated for the proposed Master Plan Update, which indicates that the campus-specific mass emission threshold would not be exceeded with implementation of the Master Plan Update.

GHG emissions estimates are based on construction activity, mobile sources (i.e., vehicle trips), energy (electricity) use, solid waste disposal, and water demand. As previously discussed, while development under the No Project Alternative would accommodate up to 31,000 FTES, it is anticipated that the gradual student enrollment growth at CSULB would continue to grow at the 1% anticipated annual growth per the CSU Chancellor's Office beyond the 2020 horizon year identified in the 2008 Master Plan. Additionally, it is anticipated that faculty, staff, and employees would also gradually increase accordingly. Therefore, vehicle trip generation would be similar, resulting in similar mobile source GHG emissions.

Construction and operation of new facilities under this alternative would be limited to the new soccer field complex and the new parking structure. The 925 net new student beds added under this alternative would be provided in existing student housing buildings. Since these buildings are already operating, no significant increase in GHG emissions would be associated with the addition of new student beds under this alternative. Construction equipment and activities would be similar to those described under the Master Plan Update. As such, construction GHG emissions under this alternative would not exceed established thresholds. As less development would occur under this alternative, construction GHG emissions would be reduced as compared to the Master Plan Update. Therefore, construction GHG emissions impacts would be reduced under the No Project Alternative as compared to the Master Plan Update.

Operation of the new ancillary facilities at the new soccer field complex and operation of the new parking structure under this alternative would generate GHG emissions associated with energy use, solid waste disposal, and water demand. CSULB already exceeds Title 24 energy efficiency requirements, which would be incorporated into the projects developed under this alternative. Therefore, operation GHG emissions under the No Project Alternative would be similar to the Master Plan Update. As construction and operation of the new soccer field complex, new parking structure, and 925 additional student beds under the No Project Alternative would be required to comply with the same regulatory requirements as under the Master Plan Update, it can reasonably be assumed that GHG emissions associated with construction and operation under this alternative would be below the threshold. However, with less new development at the CSULB main campus, aged or outdated utility infrastructure at existing facilities would remain in place and updates to enhance utility and energy efficiency, which would also result in decreased GHG emissions, would not be implemented. Therefore, operational GHG impacts under the No Project Alternative would be greater than the Master Plan Update.

Hydrology and Water Quality

As discussed in Section 3.7, Hydrology and Water Quality, implementation of the Master Plan Update would result in less than significant impacts related to hydrology and water quality and would not require mitigation. Construction of new facilities under the No Project Alternative would be limited to a new soccer field complex and a new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. Similar to the proposed Master Plan Update, development under the No Project Alternative would be required to comply with all applicable stormwater runoff regulations, including the NPDES permit and

project-specific SWPPPs during construction, and Small MS4 Permit requirements and LID standards, as applicable, during operation. The new soccer field complex would be located at the existing George Allen Soccer Field and the new parking structure would be developed on an existing paved surface parking lot, while the 925 net new student beds would be provided in existing student housing buildings. As such, similar to the proposed Master Plan Update, development under the No Project Alternative would not substantially increase the area of impervious surfaces present at the CSULB main campus such that increased volumes and/or rates of runoff would result in erosion or flooding. However, as the No Project Alternative would involve less development overall than that proposed under the Master Plan Update, impacts related to hydrology and water quality would be reduced as compared to the Master Plan Update.

Noise

As discussed in Section 3.8, Noise, construction activities associated with development under the Master Plan Update would result in potentially significant noise impacts at nearby sensitive uses, requiring implementation of Mitigation Measures NOI-A and NOI-B to reduce impacts to less than significant. Construction of new facilities under the No Project Alternative would be limited to a new soccer field complex and a new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. The 2008 Master Plan EIR also identified mitigation to reduce construction-related noise, such as adhering to the construction hours identified in the City of Long Beach construction noise regulations and scheduling construction activities when classes are not in session, which would apply to construction activities under the No Project Alternative. Nonetheless, the 2008 Master Plan EIR concluded that impacts from construction noise would remain significant and unavoidable even with implementation of mitigation. Therefore, construction noise impacts under the No Project Alternative would be greater than under the proposed Master Plan Update.

Under the Master Plan Update, crowd noise associated with operation of the Jack Rose Track/Commencement Facilities project could exceed the threshold for increases over ambient noise levels at the nearest sensitive receptor during events due to the increased spectator capacity associated by the project. As such, implementation of Mitigation Measure NOI-C is required under the Master Plan Update to reduce noise levels during events such that they would not cause a significant increase over ambient noise levels. The 2008 Master Plan EIR identified mitigation to reduce event noise associated with operation of the proposed soccer field complex. As mitigation would reduce event noise levels to less than significant for both the Master Plan Update and No Project Alternative, operational noise impacts under the No Project Alternative would be similar to the proposed Master Plan Update.

Construction activities and equipment associated with development under the Master Plan Update would generate vibration; however, vibration levels would not exceed the threshold for human annoyance or building damage and no mitigation is required. As discussed in Section 3.8 for the Master Plan Update, the closest sensitive receptor is located approximately 145 feet from the CSULB main campus. For a conservative analysis, vibration levels for construction equipment, including pile drivers, were calculated at a distance of 130 feet. At this distance, the 0.2 inch per second PPV threshold for human annoyance and building damage would not be exceeded. The 2008 Master Plan EIR identified potentially significant construction vibration impacts associated with the use of pile drivers for the construction of the new parking structure. The parking structure that would be developed under the No Project Alternative would be located on the interior of the CSULB main campus more than 130 feet from the closest sensitive receptor. As such, pile drivers used in the construction of the parking structure under the No Project

Alternative would also not exceed the 0.2 inch per second PPV threshold. The 2008 Master Plan EIR also identified mitigation measures to reduce construction-related vibration, such as adhering to the construction hours identified in the City of Long Beach construction noise regulations and scheduling construction activities when classes are not in session, which would apply to construction activities under the No Project Alternative. Therefore, construction vibration impacts associated with development under the No Project Alternative would be similar to those of the proposed Master Plan Update.

Similar to the proposed Master Plan Update, development under the No Project Alternative would not introduce new land uses that could result in perceptible groundborne vibration during operation.

Population and Housing

As discussed in Section 3.9, Population and Housing, the Master Plan Update proposes new campus facilities, including student housing, to accommodate existing students and the projected campus population of 38,165, with a gradual increase in the on-campus population through the horizon year to with the provision of approximately 1,602 net new student beds and approximately 285 new faculty and staff housing units. Under the No Project Alternative, approximately 925 new student beds would be provided to accommodate up to 31,000 FTES. Similar to the proposed Master Plan Update, the projected campus population growth under the No Project Alternative is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS. As such, the No Project Alternative would not directly or indirectly induce substantial unplanned population growth in the area. However, the net new beds provided under this alternative would include student beds only; no faculty or staff housing units would be provided. As such, although the No Project Alternative would not induce unplanned population growth, the provision of fewer student beds and elimination of faculty and staff housing units under this alternative would not offset the housing need identified in the RHNA to the same extent as the Master Plan Update. As such, impacts under the No Project Alternative would be greater than the proposed Master Plan Update.

The new student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. The development of the new soccer field complex and new parking structure under this alternative would not include residential uses or displace existing people or housing. Under the proposed Master Plan Update, development of new campus housing would require demolition of some existing residence halls, which would temporarily require the shifting of those student beds to other student housing buildings until construction of the new buildings is completed. As the No Project Alternative would not displace existing people or housing, the impact would be reduced under this alternative as compared to the proposed Master Plan Update.

Public Services and Recreation

As discussed in Section 3.10, Public Services and Recreation, implementation of the Master Plan Update would result in less than significant impacts to public services and recreation and would not require mitigation. The three projects that would be implemented under the No Project Alternative include a new soccer field complex, a new parking structure, and the addition of 925 provided in existing student housing buildings at the CSULB main campus. The demand for public services is based on the service population. While development under the No Project Alternative would accommodate fewer FTES than the proposed Master Plan Update, the gradual increase in campus population projected through the horizon year 2035 would still occur. Per CSU charter, universities are obligated to allow all students accepted regardless of space planning and

programming on a campus. As such, while development under the No Project Alternative would accommodate up to 31,000 FTES, it is anticipated that student enrollment projected through the year 2035 would still be approximately 36,000 FTES. Under the No Project Alternative enhancements to public services proposed under the Master Plan Update, such as the expansion of the UPD facilities, provision of additional study space outside of the University Library, and upgrades to fire life safety systems, would not be implemented. As such, the No Project Alternative would not provide the public service facilities and improvements to accommodate the projected future campus population through the horizon year. Therefore, impacts to public services under the No Project Alternative would be greater than under the proposed Master Plan Update.

The need for new or expanded parks and recreational facilities is based on service population and access to existing open space and recreational facilities. The CSULB main campus currently contains open space such as open lawn areas, the Campus Quad, landscaped pedestrian pathways, and informal gathering spaces located within and near student housing buildings. Additionally, several public parks and recreational facilities are available in the surrounding area. Although the open space improvements proposed under the Master Plan Update would not be implemented under the No Project Alternative, many of these improvements would enhance existing open space uses at the CSULB main campus, rather than create additional new open space uses. The existing open space uses would still be available for use by the campus population under this alternative. Therefore, impacts to recreation under the No Project Alternative would be similar to the proposed Master Plan Update.

Transportation

As discussed in Section 3.11, Transportation, implementation of the Master Plan Update would result in less than significant impacts to transportation and would not require mitigation. The three projects that would be implemented under the No Project Alternative include a new soccer field complex, a new parking structure, and the addition of 925 provided in existing student housing buildings at the CSULB main campus. All three projects would be located on the interior of the main campus. The Master Plan Update proposes several mobility and circulation improvements that would not be implemented under the No Project Alternative. As such, none of the improvements that have the potential to affect external bicycle or pedestrian facilities, public transit facilities, or roadway facilities under City of Long Beach jurisdiction would occur. Therefore, the No Project Alternative would result in no impacts related to conflict with plans, ordinances, or policies addressing transit facilities, and impacts would be reduced as compared to the proposed Master Plan Update.

As previously discussed, while development under the No Project Alternative would accommodate up to 31,000 FTES, it is anticipated that student enrollment projected through the year 2035 would still be approximately 36,000 FTES. As the VMT model is based on total population, it can reasonably be assumed that travel patterns to and from the campus and associated VMT under the No Project Alternative would be similar to the proposed Master Plan Update.

Proposed pedestrian and bicycle mobility improvements under the Master Plan Update would reduce vehicle/pedestrian and vehicle/bicycle conflict locations and enhance safety. Additionally, proposed improvements to campus entry points under the Master Plan Update would reduce intersections with left turn conflicts, resulting in a beneficial impact of reducing the potential for crashes involving left turning vehicles. As the No Project Alternative would not implement these improvements to bicycle and pedestrian facilities and campus entry points, these beneficial

impacts would not be realized under this alternative. Therefore, although no impacts related to hazards due to a geometric design feature would occur under the No Project Alternative, impacts would be slightly greater under this alternative than under the proposed Master Plan Update.

Construction of new facilities under the No Project Alternative would be limited to a new soccer field complex and a new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. Similar to the proposed Master Plan Update, development under the No Project Alternative would be required to implement construction traffic control plans per the CSU standard construction BMPs outlined in the CSU Owner Controlled Insurance Program Safety Manual and follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects to confirm adequate emergency access and building safety features. Therefore, impacts related to emergency access under the No Project Alternative would be similar to the proposed Master Plan Update.

Tribal Cultural Resources

As discussed in Section 3.12, Tribal Cultural Resources, a restrictive covenant prohibiting development has been established on a large portion of the undeveloped land on the northwest border of the CSULB main campus that is part of the National Register-listed Puvunga Indian Village Sites Archaeological District and is listed in the Native American Heritage Commission's Sacred Lands Inventory. Due to the potential presence of tribal cultural resources on the CSULB main campus, ground-disturbing activities during construction would result in potentially significant impacts to such resources, requiring implementation of Mitigation Measures TCR-A through TCR-D and Mitigation Measures AR-A through AR-K to reduce impacts to less than significant. The 2008 Master Plan EIR did not include AB 52 consultation, as it was not required at the time that document was prepared and, as such, input from Native American tribal representatives on potential impacts to tribal cultural resources was not addressed in the 2008 Master Plan EIR. However, the 2008 Master Plan EIR identifies mitigation for ground-disturbing activities, including requiring Native American monitoring, which would apply to the construction activities under the No Project Alternative. The footprints of the new soccer field complex and new parking structure that would be constructed under this alternative would not overlap with the restrictive covenant or occur within the boundaries or buffer distance of a known tribal resource site. The new student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. Additionally, the No Project Alternative would require less overall ground disturbance, therefore, the potential to encounter previously unknown tribal cultural resources would be reduced as compared to the development under the proposed Master Plan Update.

Utilities and Energy

As discussed in Section 3.13, Utilities and Energy, implementation of the Master Plan Update would result in less than significant impacts to utilities and energy and would not require mitigation. Utilities and energy usage is based on the service population and the amount of new development implemented that would require new utility connections. While the total campus population under this alternative would remain similar to that of the proposed Master Plan Update, overall development of new facilities would be limited to the new soccer field complex and the new parking structure. New student beds added under the No Project Alternative would be provided in existing student housing buildings at the CSULB main campus and no new housing buildings would be constructed. Operation of the new ancillary facilities at the new soccer field complex and operation of the new parking garage under this alternative would require less energy usage when compared to the proposed new construction projects that would occur under the Master

Plan Update. However, with less new development at the CSULB main campus, aged or outdated utility infrastructure at existing facilities would remain in place and updates to enhance utility and energy efficiency would not be implemented. Therefore, impacts related to utilities and energy under the No Project Alternative would be greater than under the proposed Master Plan Update.

Relationship to Project Objectives

Development under the No Project Alternative would occur at the George Allen Soccer Field in the North District and at the site of the existing Parking Lot G6 in the West District, thereby preserving space in the campus core that could be used for academic uses and student-focused programming. Therefore, this alternative would achieve the following project objective:

7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.

As only limited development would occur under the No Project Alternative, net new gross square footage would be minimal. However, improvements implemented under the No Project Alternative would not include renovations to optimize existing facilities to accommodate the gradual increase in campus enrollment. Therefore, the No Project Alternative would partially achieve the following objective:

2. Optimize the existing campus space and minimize net new gross square footage.

This alternative would include development of a new soccer field complex at the George Allen Field. However, none of the other improvements to athletics facilities would be implemented under the No Project Alternative. Therefore, this alternative would partially achieve the following project objective:

12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

Under the No Project Alternative, CSULB would continue to operate under the current adopted 2008 Master Plan, which would include improvements to campus facilities to accommodate up to 31,000 FTES. As proposed development under the No Project Alternative would be limited to the accommodation of up to 31,000 FTES, this alternative would not achieve the following project objective:

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

The No Project Alternative would only implement those proposed improvements that have not yet been developed, including a new soccer field complex at the George Allen Field in the North District; a new parking structure at the location of the existing surface Parking Lot G6 north of the Bouton Creek channel in the West District; and the addition of the remaining 925 beds of the originally proposed 2,000 student housing beds. As no other proposed improvements would be implemented under the No Project Alternative, upgrades and renovations to existing facilities would not occur. Therefore, this alternative would not achieve the following project objectives:

3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.

4. Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces.
5. Support an expanded residential environment by constructing new or replacement buildings or renovating existing student housing villages to:
    - Include a more diverse mix of housing typologies for students (pod configurations, suites, and apartments); and
    - Include common spaces, active outdoor spaces, and space for student services.
6. Strengthen the physical connection between the two housing villages on the CSULB main campus.
8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.
9. Provide new faculty and staff housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.
10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.
11. Provide defined campus gateways and edges with increased wayfinding and signage to highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.

Improvements to campus housing under the No Project Alternative would be limited to the provision of up to 925 beds, providing some contribution to the overall campus housing need. However, these would be implemented as student beds within existing residence halls, some of which are in need of renovations to restore common living spaces that have been converted to accommodate additional beds, which would not occur under the No Project Alternative. As a result, the quality of student housing options under the No Project Alternative would not include the social, programming, and support space offered under the proposed Master Plan Update. For these reasons, the No Project Alternative would not achieve the following objectives:

5. Support an expanded residential environment by constructing new or replacement buildings or renovating existing housing villages to:
    - Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention; and
    - Provide high quality and affordable options with an equitable mix of offerings for students.

Conclusion

As discussed above, the No Project Alternative would not implement any of the improvements proposed under the Master Plan Update. Due to the limited development associated with the No Project Alternative, it would result in reduced impacts as compared to the Master Plan Update in the following eight areas: aesthetics; air quality (construction); cultural resources (construction); GHG emissions (construction); hydrology and water quality; transportation (construction); utilities and energy (construction); and tribal cultural resources. However, because mitigation measures identified to avoid potentially significant impacts to nesting birds, roosting bats, and

paleontological resources would not be implemented, the No Project Alternative would result in greater construction impacts related to biological resources and geology, soils, and paleontological resources. Additionally, this alternative would not implement pedestrian, bicycle, or campus entry improvements that would enhance safety, and the No Project Alternative would result in greater transportation related impacts during operation. The No Project Alternative would also result in greater impacts related to air quality (operation); GHG emissions (operation); noise and vibration (construction); population and housing; public services and recreation, and utility and energy usage. Impacts in the following four areas would be similar to those identified for implementation of the Master Plan Update: biological resources (operation); cultural resources (operation); and geology, soils, and paleontological resources (operation).

The No Project Alternative would avoid the potentially significant impacts associated with the proposed new permanent lighting and crowd noise at the Jack Rose Track/Commencement Facilities. However, similar crowd noise impacts associated with the soccer field complex have been identified in the 2008 Master Plan, resulting in similar noise impacts for the alternative during operation. This alternative would also result in greater impacts in nine areas as compared to implementation of the Master Plan Update, including a significant and unavoidable impact associated with parking structure construction vibration.

The No Project Alternative would achieve one of the 12 project objectives; would partially achieve two of the project objectives to a lesser extent than the Master Plan Update; and would not achieve nine of the project objectives. Therefore, the No Project Alternative would not fully achieve or attain most of the project objectives.

5.4.2 Faculty and Staff Housing Project Design Alternative

The Faculty and Staff Housing Project Design Alternative would construct and operate the Faculty and Staff Housing project at the same location as proposed under the Master Plan Update. However, instead of demolishing the existing Design building and relocating its programming elsewhere on the CSULB main campus, that programming would be incorporated into the design of the project. Whereas the proposed Faculty and Staff Housing project would include four stories of housing above two levels of podium parking for a total of six stories, the building constructed under this alternative would include two levels of podium parking, one story for the relocated Department of Design programming, and four stories of housing, for a total of seven stories. Incorporating the Department of Design programming within the Faculty and Staff Housing project would result in the same number of faculty and staff housing units and an overall increase of approximately 50,000 square feet and one additional story over the project proposed under the Master Plan Update. All other improvements and individual development projects would be implemented as proposed under the Master Plan Update.

Development of this alternative would eliminate the need to renovate or construct a new space for the existing Department of Design programming elsewhere on the CSULB main campus. As such, this alternative was selected for its potential to reduce or avoid the significant but mitigable impacts identified for the Master Plan Update related to aesthetics; biological resources; cultural resources; geology, soils, and paleontological resources; noise; and tribal cultural resources.

Impact Analysis

Aesthetics

Similar to the proposed project, nighttime construction activities associated with development of this alternative would potentially result in spillover lighting on adjacent residential uses which would require implementation of Mitigation Measure AES-A to reduce impacts to less than

significant. Implementation of Mitigation Measure AES-A, requiring shielding of any construction lighting, would be required under this alternative to reduce impacts from light and glare to less than significant during construction. As such, construction impacts under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

The building constructed under the Faculty and Staff Housing Project Design Alternative would be one story taller than the project proposed under the Master Plan Update. As such, the new building may be visible from more residential properties than the proposed project. The building materials and types of lighting used under this design alternative would be similar to the proposed project developed under the Master Plan Update. Additionally, development of this alternative would be required to comply with the applicable development standards and regulations for exterior lighting under the California Building Standards Code, the CSU Outdoor Lighting Design Guide, and the CALGreen-mandated BUG ratings for exterior lighting related to light and glare. However, the taller building that would be located at this site would be more visible from off-site properties than the six-story building under the Master Plan Update. Therefore, light and glare impacts during operation under the Faculty and Staff Housing Project Design Alternative would be greater than the proposed Master Plan Update.

Air Quality

Construction and operational air quality emissions are estimated for all development under the proposed Master Plan Update, including the Faculty and Staff Housing project. As discussed in Section 3.2, air quality emissions associated with construction and operation would not exceed significance thresholds. Construction of the Faculty and Staff Housing Project Design Alternative would include one additional story, or approximately 50,000 more square feet, than the building proposed under the Master Plan Update. As such, both construction and operation activities would be slightly increased. It is not anticipated that the additional square footage would result in substantially more air quality emissions that could exceed thresholds. Furthermore, although the increased construction and operation activities under this alternative would result in slightly increased air quality emissions as compared to those of the project proposed under the Master Plan Update, development of this alternative would eliminate the need to renovate or construct a new space for the existing Department of Design programming elsewhere on the CSULB main campus. Therefore, air quality impacts associated with construction and operation of the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Biological Resources

As discussed in Section 3.3, Biological Resources, construction activities associated with development of new projects under the Master Plan Update, including the Faculty and Staff Housing project, may require the removal of vegetation and structures, which could result in potentially significant impacts to nesting birds and roosting bats, requiring implementation of Mitigation Measures BIO-A and BIO-B to reduce impacts to less than significant. Construction activities associated with the development of the Faculty and Staff Housing Project Design Alternative would be similar to those described under the proposed Master Plan Update. As such, Mitigation Measures BIO-A and BIO-B, requiring pre-construction nesting bird and roosting bat surveys, would be applicable under this alternative. Construction impacts to special-status wildlife species under the Faculty and Staff Housing Project Design Alternative would be less than significant with implementation of mitigation measures, similar to the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, the Faculty and Staff Housing Project Design Alternative would not result in any other potential impacts to biological resources during construction or operation, including special-status plant species, protected wetlands, or migratory wildlife corridors.

Cultural Resources

As discussed in Section 3.4, Cultural Resources, the footprint of the proposed Faculty and Staff Housing project is located within the boundary of a known archaeological resource. As such, construction activities occurring at that location could result in significant impacts to archaeological resources, requiring implementation of Mitigation Measures AR-A through AR-K to reduce impacts to less than significant. Construction activities associated with the development of the Faculty and Staff Housing Project Design Alternative would be similar to and would occur in the same location as those described under the proposed Master Plan Update. Thus, Mitigation Measures AR-A through AR-K would be implemented under this alternative, as applicable. With implementation of mitigation measures, construction impacts under the Faculty and Staff Housing Project Design Alternative would be less than significant, similar to the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, no impacts to archaeological resources would occur during operation of the Faculty and Staff Housing Project Design Alternative.

Similar to the project proposed under the Master Plan Update, the Faculty and Staff Housing Project Design Alternative would not involve development that could impact an individually eligible historical resource or the Upper Campus Historic District, and no impacts to such resources would occur under this alternative.

Geology and Soils

As discussed in Section 3.5, Geology, Soils, and Paleontological Resources, ground-disturbing activities associated with development of new projects under the Master Plan Update, including the Faculty and Staff Housing project, may require excavation for foundations that may reach undisturbed geologic contexts, which could result in potentially significant impacts to paleontological resources, requiring implementation of Mitigation Measures GEO-A through GEO-D to reduce impacts to less than significant. Construction activities associated with the development of the Faculty and Staff Housing Project Design Alternative would be similar to those described under the proposed Master Plan Update. As such, if it is determined that ground-disturbing activities at depths of 4 feet or greater would be required under this alternative, Mitigation Measures GEO-A through GEO-D would be implemented, as applicable. Construction impacts to paleontological resources under the Faculty and Staff Housing Project Design Alternative would be less than significant with implementation of mitigation measures, similar to the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, no impacts to paleontological resources would occur during operation of the Faculty and Staff Housing Project Design Alternative.

Greenhouse Gas Emissions

Construction and operational GHG emissions are estimated for all development under the proposed Master Plan Update, including the Faculty and Staff Housing Project. As discussed in Section 3.6, GHG emissions associated with construction and operation would not exceed

significance thresholds. Construction of the Faculty and Staff Housing Project Design Alternative would include one additional story, or approximately 50,000 more square feet, than the building proposed under the Master Plan Update. As such, both construction and operation activities would be slightly increased as compared to the Master Plan Update. It is not anticipated that the additional square footage would result in substantially more GHG emissions that could exceed thresholds. Furthermore, although the increased construction and operation activities under this alternative would result in slightly increased GHG emissions as compared to those of the project proposed under the Master Plan Update, development of this alternative would negate the need to renovate or construct a new space for the existing Department of Design programming elsewhere on the main campus. Therefore, GHG emissions impacts associated with construction and operation of the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Hydrology and Water Quality

Construction activities associated with development of the Faculty and Staff Housing Project Design Alternative would include ground-disturbing activities that could increase the potential for erosion of exposed soils. Additionally, potential increases in impervious surfaces could increase rates of runoff from the site. Similar to the project proposed under the Master Plan Update, development of this alternative would be required to comply with all applicable stormwater runoff regulations, including obtaining an NPDES permit, implementing project-specific SWPPPs during construction, and adhering to Small MS4 Permit requirements and LID standards, as applicable, during operation. Additionally, although the building proposed under this alternative would be of greater square footage than the project proposed under the Master Plan Update, this additional square footage would occur vertically in the form of one additional floor, rather than increase the size of the building footprint. As such, similar to the Master Plan Update, development under this alternative would not substantially increase the area of impervious surfaces present at the site such that increased runoff would result in erosion or flooding. Therefore, with adherence to existing requirements, impacts to hydrology and water quality would be less than significant under the Faculty and Staff Housing Project Design Alternative, similar to the project proposed under the Master Plan Update.

Noise

As discussed in Section 3.8, Noise, construction activities associated with development of the Faculty and Staff Housing project would result in noise levels exceeding thresholds at the nearest sensitive receptor, which is the multi-family residential building located approximately 170 feet southeast of the project site, requiring implementation of Mitigation Measures NOI-A and NOI-B to reduce impacts to less than significant. Construction activities associated with the development of the Faculty and Staff Housing Project Design Alternative would be similar to and would occur in the same location as those described under the proposed Master Plan Update. As such, Mitigation Measures NOI-A and NOI-B would be applicable under this alternative. With implementation of the mitigation measures, daytime and nighttime construction noise levels would be less than significant under this alternative, similar to the project proposed under the Master Plan Update. However, because this alternative would develop a larger building at the project site than that proposed under the Master Plan Update, the construction activities would occur for a slightly longer duration at this location. Therefore, construction noise impacts under the Faculty and Staff Housing Project Design Alternative would be slightly greater than those of the project proposed under the Master Plan Update.

Operational noise sources under this alternative would be similar to those described for the Master Plan Update and would include stationary noise from HVAC units, crowd noise, and

parking activities, and mobile noise from vehicular traffic. Noise levels for HVAC units were calculated at a distance of 140 feet, which would not exceed the daytime or nighttime operational noise thresholds. HVAC units used during operation under this alternative would be located at the same distance from the nearest sensitive receptor as for the project proposed under the Master Plan Update, approximately 170 feet. As such, noise from HVAC units associated with operation under this alternative would be similar to that of the project proposed under the Master Plan Update and would not exceed noise thresholds. Additionally, similar to the project proposed under the Master Plan Update, crowd noise associated with this alternative would be well below the established thresholds for day and nighttime noise. However, the building developed under this alternative would accommodate more people by combining the Department of Design programming with the proposed housing uses. As such, crowd noise associated with outdoor gathering spaces, while not anticipated to exceed thresholds, would be slightly increased as compared to the project proposed under the Master Plan Update. No increase in parking facilities would occur under this alternative from that proposed for the Faculty and Staff Housing project under the Master Plan Update. Therefore, noise from parking activities under this alternative would be similar to that of the project proposed under the Master Plan Update. Noise levels from mobile sources were calculated to account for all development under the Master Plan Update through the horizon year, including the Faculty and Staff Housing project, and are based on the total campus population, rather than individual development projects. As such, mobile source noise levels associated with operation of the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

As discussed in Section 3.8, the closest sensitive receptor to the CSULB main campus is located approximately 145 feet away. For a conservative analysis, vibration levels for construction equipment were calculated at a distance of 130 feet. At this distance, the 0.2-inch-per-second PPV threshold for human annoyance and building damage would not be exceeded. The closet sensitive receptors from the Faculty and Staff Housing project site are approximately 170 feet away. As such, construction activities associated with this alternative would also not exceed the 0.2 inch per second PPV threshold. Therefore, construction vibration impacts associated with development under the Faculty and Staff Housing Project Design Alternative would be less than significant, similar to those of the project proposed under the Master Plan Update. However, because this alternative would develop a larger building at the project site than that proposed under the Master Plan Update, the construction activities would occur for a slightly longer duration at this location. Therefore, construction vibration impacts under the Faculty and Staff Housing Project Design Alternative would be slightly greater than those of the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, development under the Faculty and Staff Housing Project Design Alternative would not introduce new land uses that could result in perceptible groundborne vibration during operation.

Population and Housing

The number of faculty and staff housing units provided under this alternative and the location of development would be the same as under the Master Plan Update. As discussed in Section 3.9, Population and Housing, the net increase in faculty and staff housing units that would be provided in the Faculty and Staff Housing project is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS and would not directly or indirectly induce substantial unplanned population growth in the area. Additionally, the faculty and staff housing units would be developed at a site that does not currently contain housing units or beds and, as a result, would not displace existing housing or people. Therefore, impacts to population and housing under the

Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Public Services and Recreation

The demand for public services is based on the service population. This alternative would develop a larger building at the project site than that proposed under the Master Plan Update, and it would accommodate more people by combining the Department of Design programming with the faculty and staff housing units in the same building. A slight increase in the number of people accommodated at the project site would not increase the demand for fire or police protection services, as LBFD and UPD already service the campus and the total campus population would be the same under this alternative as for the Master Plan Update. The number of faculty and staff housing units provided under the Faculty and Staff Housing Project Design Alternative would be the same as described for the project proposed under the Master Plan Update. As such, the number of school-aged children generated by faculty and staff housing units would be the same under this alternative. Finally, similar to the project proposed under the Master Plan Update, the Faculty and Staff Housing Project Design Alternative would not increase the demand for library facilities, as adequate service is provided by the University Library at the CSULB main campus. Therefore, impacts to public services under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Development under this alternative would not be anticipated to result in a need for new or expanded parks or recreational facilities, as residents and students at the building would have access to the existing open space opportunities throughout the CSULB main campus. Additionally, the open space improvements proposed under the Master Plan Update would still be implemented under this alternative. Therefore, impacts to parks and recreational facilities under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Transportation

Development under the Faculty and Staff Housing Project Design Alternative would occur at the same location and within generally the same footprint as the project proposed under the Master Plan Update. As such, development of this alternative would not interfere with implementation of the mobility and circulation improvements proposed under the Master Plan. As such, this alternative would not conflict with plans, ordinances, or policies addressing the circulation system. Additionally, as previously discussed, the VMT model is based on total campus population, which would not be changed with the development of this alternative. Therefore, impacts related to VMT under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, implementation of the Faculty and Staff Housing Project Design Alternative would introduce a new driveway entrance onto Palo Verde Avenue, the construction of which would require a temporary pedestrian detour as a section of the sidewalk would be closed. It could also include the temporary closure of one lane of traffic on southbound Palo Verde Avenue. These proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Following completion of construction, implementation of this new driveway would permanently alter the geometry of access at this location. However, similar to the project proposed under the Master Plan Update, the location and design of the new driveway would be required to adhere to all applicable standards. With adherence to existing regulations,

impacts related to hazards due to a design feature under the Faculty and Staff Housing Project Design Alternative would be less than significant, similar to those of the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, development under this alternative would be required to implement construction traffic control plans per the CSU standard construction BMPs outlined in the CSU Owner Controlled Insurance Program Safety Manual and follow the CSU standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects to confirm adequate emergency access and building safety features. Therefore, impacts related to emergency access under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Tribal Cultural Resources

As discussed in Section 3.12, Tribal Cultural Resources, due to the potential presence of tribal cultural resources at the CSULB main campus, ground-disturbing activities during construction would result in potentially significant impacts to such resources, requiring implementation of Mitigation Measures TCR-A through TCR-D to reduce impacts to less than significant. The footprint of the proposed Faculty and Staff Housing project is located within the boundary of a known archaeological resource. As such, construction activities occurring at that location have the potential to result in significant impacts to tribal cultural resources requiring mitigation. Construction activities associated with the development of the Faculty and Staff Housing Project Design Alternative would be similar to and would occur in the same location as those described under the proposed Master Plan Update. Thus, Mitigation Measures TCR-A through TCR-D would be implemented under this alternative, as applicable. With implementation of mitigation measures, construction impacts under the Faculty and Staff Housing Project Design Alternative would be less than significant, similar to the project proposed under the Master Plan Update.

Similar to the project proposed under the Master Plan Update, no impacts to tribal cultural resources would occur during operation of the Faculty and Staff Housing Project Design Alternative.

Utilities and Energy

As discussed in Section 3.13, Utilities and Energy, development of the Faculty and Staff Housing project would require the rerouting of, modifications to, or connections to some existing utilities at the site, including water, stormwater drainage, electric power, and telecommunications lines. Since development under this alternative would occur at the same location and within generally the same footprint as the project proposed under the Master Plan Update, this alternative would require the same activities associated with connections to utility infrastructure.

The building constructed under the Faculty and Staff Housing Project Design Alternative would be one story taller and accommodate more people than the project proposed under the Master Plan Update. As such, operation under this alternative would result in slightly increased consumption of water and energy, as well as slightly increased generation of wastewater and solid waste as compared to the project proposed under the Master Plan Update. However, similar to the project under the Master Plan Update, development under this alternative would implement water conservation measures, such as low water use fixtures and drought-tolerant landscaping, and would exceed the most current version of the Title 24 Building Energy Efficiency Standards by 10 percent. Furthermore, development of this alternative would negate the need to renovate or construct a new space for the existing Department of Design programming elsewhere on the CSULB main campus, thereby offsetting the slight increase in utility and energy usage at the site.

Therefore, impacts to utilities and energy under the Faculty and Staff Housing Project Design Alternative would be similar to those of the project proposed under the Master Plan Update.

Relationship to Project Objectives

The Faculty and Staff Housing Project Design Alternative would only include changes to the Faculty and Staff Housing project to accommodate the existing Department of Design programming within the new building by increasing the building height by one story. All other aspects of this alternative would remain similar to the project proposed under the Master Plan Update. Additionally, all other improvements and projects proposed under the Master Plan Update would be implemented under this alternative. As such, this alternative would achieve all of the project objectives:

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth to approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.
2. Optimize the existing campus space and minimize net new gross square footage.
3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and that have critical deferred maintenance issues.
4. Replace demolished buildings with higher density, mixed-use buildings that consolidate and integrate colleges and student support spaces.
5. Support an expanded residential environment by constructing new or replacement buildings or renovating housing villages to:
    - Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention;
    - Include a more diverse mix of housing typologies for students (undergraduate students, single graduate students, and graduate students with families);
    - Provide high quality and affordable options with an equitable mix of offerings for students; and
    - Include common spaces, active outdoor spaces, and space for student services.
6. Strengthen the physical connection between the two housing villages on the CSULB main campus.
7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.
8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.
9. Provide new graduate student and faculty housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.
10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.
11. Provide defined campus gateways and edges with increased wayfinding and signage to

highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.

12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

Conclusion

Construction and operation of the Faculty and Staff Housing Project Design Alternative would be largely the same as described for the project proposed under the Master Plan Update. Additionally, all applicable mitigation measures identified under the Master Plan Update would be implemented under this alternative. As such, construction and operation of this alternative would result in similar impacts to those identified under the Master Plan Update for all areas except noise. Construction of the Faculty and Staff Housing Project Design Alternative would include one additional story, or approximately 50,000 more square feet, than the building proposed under the Master Plan Update. As such, the construction duration would be slightly increased, resulting in greater construction noise impacts at the nearest residential sensitive receptors. Additionally, the Department of Design programming would be incorporated into the new building, resulting in more people at the site. As such, noise associated with outdoor gathering spaces under the Faculty and Staff Housing Project Design Alternative would be slightly increased as compared to the project proposed under the Master Plan Update. Furthermore, the additional height of the building under this alternative would make it more visible from off-site properties than the six-story building proposed under the Master Plan Update, resulting in comparatively greater light and glare impacts during operation.

The Faculty and Staff Housing Project Design Alternative would not avoid or substantially lessen any of the potentially significant impacts associated with the project proposed under the Master Plan Update. Additionally, this alternative would result in slightly increased noise impacts during construction and operation and increased light and glare impacts during operation. It should be noted that all potentially significant impacts identified under this alternative would be mitigated to levels less than significant. Additionally, the increased noise generated by occupancy and operation of the larger facility would not exceed the threshold. The Faculty and Staff Housing Project Design Alternative would achieve all 12 of the project objectives.

5.4.3 Reduced Development Footprint Alternative

This alternative would eliminate three near-term projects, including one new development project and two facility replacement projects, that partially overlap with two significant or potentially significant archaeological resources. These include the Faculty and Staff Housing project, the Aquatics Center and Pool Renovation replacement project, and the Engineering Replacement project. All other development under the Master Plan Update would be implemented as proposed under the project.

Under the Master Plan Update, the Faculty and Staff Housing project, which would demolish the existing Design Building and replace it with a six-story building with 285 apartment-style units, is proposed to occupy an approximately 2.5-acre site that overlaps a portion of a potentially eligible archaeological resource on the main campus. The Aquatics Center and Pool Renovation project, which would either repair and upgrade the existing pool or increase the facility size with additional bleachers, requiring the demolition of the existing pool, is proposed to occupy an approximately 1-acre site that is adjacent to the existing athletic fields and overlaps a portion of a potentially eligible archaeological resource on the main campus. Finally, the Engineering Replacement Building project would demolish the existing EN2, EN3, and EN4 buildings and construct a new six-story building. The Engineering Replacement Building project would provide right-sized

classrooms, teaching labs, faculty and staff workspaces, and flexible lab spaces into a higher-density building on an approximately 1.5-acre site that overlaps with a portion of a potentially eligible archaeological resource. The majority of the site would remain open space for a quad and to provide space for future buildings as the College of Engineering grows over time.

None of these facilities would be developed under this alternative, at these locations or any other locations on the main campus. The existing Aquatics facility would remain in use and would undergo minor maintenance upgrades in place. The Engineering Replacement Building project, including the accompanying open space for future growth and expansion of the College of Engineering, would not be constructed and its programs would not be realized; the College of Engineering would remain in its current facilities.

Impact Analysis

Aesthetics

The Reduced Development Footprint Alternative would eliminate development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and Engineering Replacement Building project proposed under the Master Plan Update. Of these projects, only the Faculty and Staff Housing project is located at the perimeter of the main campus and visible from off-site locations. All other development proposed under the Master Plan Update would be implemented under this alternative.

Because the majority of development proposed under the Master Plan Update would continue to be implemented, nighttime construction activities associated with development under this alternative would still potentially result in spillover lighting on adjacent residential uses, which would require implementation of Mitigation Measure AES-A requiring shielding of any construction lighting, to reduce impacts to less than significant. Implementation of Mitigation Measure AES-A would also be required under the Reduced Development Footprint Alternative to reduce impacts from light and glare to less than significant during construction. However, eliminating development of the Faculty and Staff Housing project from the campus perimeter would eliminate potential light and glare impacts on the adjacent off-site residential uses during construction. As such, construction impacts under the Reduced Development Footprint Alternative would be slightly reduced as compared to the Master Plan Update.

Under the Master Plan Update, the proposed Jack Rose Track/Commencement Facilities improvements would still be implemented and would introduce new permanent flood lighting, requiring implementation of Mitigation Measure AES-B to reduce potential light and glare impacts during operation to less than significant. This project would result in the potential for additional skyglow that would be visible from off-site locations. As such, Mitigation Measure AES-B would still apply to this alternative. Additionally, the building materials and types of lighting used for development under this alternative would be similar to those proposed for development under the Master Plan Update, and therefore impacts related to glare and lighting would be the same. Furthermore, development of this alternative would be required to comply with the applicable development standards and regulations for exterior lighting under the California Building Standards Code, the CSU Outdoor Lighting Design Guide, and the CALGreen-mandated BUG ratings for exterior lighting related to light and glare.

Overall, with implementation of Mitigation Measure AES-B and compliance with existing standards and regulations, light and glare impacts would be minimized and would generally be similar to the proposed Master Plan Update. However, eliminating development of the Faculty and Staff Housing project would eliminate potential light and glare impacts on adjacent residential

properties associated with operation of a new, taller building at that site. Therefore, light and glare impacts under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Air Quality

Construction and operational air quality emissions are estimated for all development under the proposed Master Plan Update. As discussed in Section 3.2, air quality emissions associated with construction and operation would not exceed significance thresholds. The Reduced Development Footprint Alternative would eliminate the construction and operation of the Faculty and Staff Housing Project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. The elimination of these three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that would generate air emissions. However, aged or outdated utility infrastructure at existing facilities would not be demolished under this alternative (i.e., Design Building, EN2, EN3, EN4, and the pool) and instead would remain in use, and as a result, infrastructure improvements proposed under the Master Plan Update that would enhance utility and energy efficiency and reduce air emissions would not be realized. Therefore, stationary source emissions under the Reduced Development Footprint Alternative would be increased as compared to the Master Plan Update. Therefore, operational air quality impacts under the Reduced Development Footprint Alternative would be slightly greater than under the Master Plan Update.

Biological Resources

As discussed in Section 3.3, Biological Resources, construction activities associated with development of new projects under the Master Plan Update may require the removal of vegetation and structures, which could result in potentially significant impacts to nesting birds and roosting bats, requiring implementation of Mitigation Measures BIO-A and BIO-B to reduce impacts to less than significant.

Construction activities associated with the development of the Reduced Development Footprint Alternative would be substantially similar in nature to those described under the proposed Master Plan Update, albeit slightly reduced in magnitude because of the elimination of three projects. As such, Mitigation Measures BIO-A and BIO-B, requiring pre-construction nesting bird and roosting bat surveys, would still be applicable under this alternative. However, the elimination of the Staff and Faculty Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project would avoid the removal of vegetation and structures associated with construction of these projects. As such, the elimination of the three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that could impact special-status bird species projected under the MBTA and CFGC, and/or roosting bats. Therefore, construction impacts to special-status wildlife species under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the proposed Master Plan Update, the Reduced Development Footprint Alternative would not result in any other potential impacts to biological resources during construction or operation, including special-status plant species, protected wetlands, or migratory wildlife corridors.

Cultural Resources

As discussed in Section 3.4, Cultural Resources, the footprints for eight projects proposed under the Master Plan Update, including the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, overlap with the

boundaries of six potentially significant archaeological resources at the main campus. As such, ground-disturbing activities occurring during construction at these locations could result in significant impacts to archaeological resources, requiring implementation of Mitigation Measures AR-A through AR-K to reduce impacts to less than significant. Construction activities associated with development under the Reduced Development Footprint Alternative would be substantially similar in nature, although slightly reduced in magnitude, to those described under the proposed Master Plan Update. Thus, Mitigation Measures AR-A through AR-K would be required under this alternative, as applicable.

However, this alternative would eliminate development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, which collectively total approximately 5 acres. Elimination of these projects under the Reduced Development Footprint Alternative would entirely avoid ground-disturbing activities at two potentially significant archaeological resources at the main campus. Therefore, construction impacts to archaeological resources under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the Master Plan Update, no impacts to archaeological resources would occur during operation of the Reduced Development Footprint Alternative, as operations do not require ground disturbance.

Construction activities associated with implementation of the Master Plan Update were also determined to result in potentially significant impacts to historical resources. Specifically, renovation, replacement, or new construction projects have the potential to impact individually eligible resources or the historic district, including its contributors, although no individually eligible resources are identified as sites for demolition in the Master Plan Update. Nonetheless, construction activities involving renovation, replacement, or new construction were determined to require implementation of Mitigation Measures HR-A through HR-F to reduce impacts to less than significant.

Construction activities associated with development under the Reduced Development Footprint Alternative would be substantially similar to those described under the proposed Master Plan Update. This alternative would eliminate the development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, none of which impact historical resources. As such, elimination of these three projects would not avoid or reduce impacts to any historical resources compared to the project. All other development proposed under the Master Plan Update would be implemented under this alternative. Thus, Mitigation Measures HR-A through HR-F would be implemented under this alternative, as applicable. As three identified projects were determined not to impact any historical resources, impacts to historical resources under the Reduced Development Footprint Alternative would be similar to the proposed Master Plan Update.

Geology and Soils

As discussed in Section 3.5, Geology, Soils, and Paleontological Resources, ground-disturbing activities associated with development of new projects, replacement projects, and renovation projects that include additions and/or renovations to the exterior of existing facilities under the Master Plan Update, may require excavation for foundations that may reach undisturbed geologic contexts, which could result in potentially significant impacts to paleontological resources. As such, implementation of Mitigation Measures GEO-A through GEO-D would be required to reduce impacts to less than significant.

Construction activities associated with the development under the Reduced Development Footprint Alternative would be substantially similar to those described under the proposed Master Plan Update, albeit slightly reduced in magnitude because of the elimination of three projects. As such, if it is determined that ground-disturbing activities at depths of 4 feet or greater would still be required under this alternative, Mitigation Measures GEO-A through GEO-D would be implemented, as applicable under this alternative. However, the elimination of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, would avoid the ground-disturbing activities associated with construction of these projects. As such, the elimination of these three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that could impact paleontological resources. Therefore, construction impacts under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the Master Plan Update, no impacts to paleontological resources would occur during operation of the Reduced Development Footprint Alternative.

Greenhouse Gas Emissions

Construction and operational GHG emissions are estimated for all development under the proposed Master Plan Update. As discussed in Section 3.6, GHG emissions associated with construction and operation would not exceed significance thresholds. The Reduced Development Footprint Alternative would eliminate the construction and operation of the Faculty and Staff Housing Project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. The elimination of the three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that would generate GHG emissions. As such, with less development occurring under this alternative, construction-related GHG impacts would be slightly reduced as compared to the Master Plan Update. However, aged or outdated utility infrastructure at existing facilities would not be demolished under this alternative (i.e., Design Building, EN2, EN3, EN4, and the pool) and instead would remain in use, and as a result, infrastructure improvements proposed under the Master Plan Update that would enhance utility and energy efficiency and reduce GHG emissions would not be implemented. Therefore, operational GHG emissions under the Reduced Development Footprint Alternative would be increased as compared to the Master Plan Update. Therefore, operational GHG impacts under the Reduced Development Footprint Alternative would be slightly greater than under the Master Plan Update.

Hydrology and Water Quality

Construction activities associated with development of the Reduced Development Footprint Alternative would include ground-disturbing activities that could increase the potential for erosion of exposed soils. Additionally, potential increases in impervious surfaces could increase rates of runoff from the site. Similar to the Master Plan Update, development of this alternative would be required to comply with all applicable stormwater runoff regulations, including obtaining an NPDES permit, implementing project-specific SWPPPs during construction, and adhering to Small MS4 Permit requirements and LID standards, as applicable, during operation. As such, similar to the proposed Master Plan Update, development in compliance with existing regulations under this alternative would not substantially increase the area of impervious surfaces present at the CSULB main campus such that increased volumes and/or rates of runoff would result in erosion or flooding. However, the Reduced Development Footprint Alternative would eliminate the construction and operation of the Faculty and Staff Housing Project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. The elimination of these three projects would result in fewer construction

and operation activities that would impact erosion, runoff, and other hydrology and water quality parameters. As such, with less development occurring under this alternative, both construction and operation activities would be slightly reduced. Therefore, impacts to hydrology and water quality associated with construction and operation of the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Noise

The Reduced Development Footprint Alternative would eliminate development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. As discussed in Section 3.8, Noise, construction activities associated with development under the Master Plan Update would result in noise levels exceeding thresholds at the nearest sensitive receptors, requiring implementation of Mitigation Measures NOI-A and NOI-B to reduce impacts to less than significant. Construction activities associated with the development under the Reduced Development Footprint Alternative would be substantially similar to the proposed Master Plan Update, albeit slightly reduced in magnitude because of the elimination of three projects. As such, Mitigation Measures NOI-A and NOI-B would still be applicable under this alternative. With implementation of the mitigation measures, daytime and nighttime construction noise levels would be less than significant under this alternative, similar to the proposed Master Plan Update. However, with less development occurring under this alternative, construction activities would be slightly reduced. Additionally, eliminating development of the Faculty and Staff Housing project would eliminate potential construction noise impacts at the adjacent residential uses at that location. Therefore, construction impacts under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Operational noise sources under this alternative would be similar to those described for the Master Plan Update and would include stationary source noise from HVAC units, crowd noise from outdoor gathering spaces, and parking activities, and mobile source noise from vehicular traffic. Noise levels for HVAC units were calculated at a distance of 140 feet, which would not exceed the daytime or nighttime operational noise thresholds. As such, noise from HVAC units associated with operation under this alternative would be similar to the Master Plan Update.

Under the Master Plan Update, crowd noise associated with operation of the Jack Rose Track/Commencement Facilities project could exceed the threshold for increases over ambient noise levels at the nearest sensitive receptor during events due to the increased spectator capacity associated by the project. As such, implementation of Mitigation Measure NOI-C, requiring preparation of a noise assessment for the Jack Rose Track/Commencement Facilities, is required under the Master Plan Update to reduce noise levels during events such that they would not cause a significant increase over ambient noise levels. The Jack Rose Track/Commencement Facilities would be also implemented under the Reduced Development Footprint Alternative. As such, Mitigation Measure NOI-C would be applicable under this alternative. However, elimination of the Faculty and Staff Housing project under this alternative would eliminate the associated noise from outdoor gathering spaces that could be heard at the adjacent residential uses at that location. Therefore, crowd noise levels associated with operation under the Reduced Development Footprint Alternative would be slightly reduced as compared to the Master Plan Update.

As discussed in Section 3.8, Noise, the only project proposed under the Master Plan Update that includes parking is Faculty and Staff Housing. While implementation of this project would not significantly increase parking facility operational noise over the existing conditions, elimination of

the Faculty and Staff Housing project would result in reduced noise associated with parking activities as compared to the Master Plan Update.

Noise levels from mobile sources were calculated to account for all development under the Master Plan Update through the horizon year based on the total campus population, rather than for individual development projects. As such, mobile source noise levels associated with operation of the Reduced Development Footprint Alternative would be substantially similar to the Master Plan Update.

As discussed in Section 3.8, the closest sensitive receptor to the CSULB main campus is located approximately 145 feet away. For a conservative analysis, vibration levels for construction equipment were calculated at a distance of 130 feet. At this distance, the 0.2-inch-per-second PPV threshold for human annoyance and building damage would not be exceeded. Development of three projects would be eliminated under the Reduced Development Footprint Alternative. All other development proposed under the Master Plan Update would be implemented under this alternative. Of the projects eliminated under this alternative, the Faculty and Staff Housing project site is located nearest to an off-site sensitive receptor, at 170 feet away. Although construction activities associated with development of this project would not exceed the applicable vibration threshold, elimination of the Faculty and Staff Housing project would entirely construction vibration impacts at this and other nearby sensitive receptors. Additionally, with less development occurring under this alternative, construction activities overall would be slightly reduced. Therefore, construction vibration impacts under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the Master Plan Update, development under the Reduced Development Footprint Alternative would not introduce new land uses that could result in perceptible groundborne vibration during operation.

Population and Housing

As discussed in Section 3.9, Population and Housing, the net increase in student beds and faculty and staff housing units that would be provided under the Master Plan Update is accounted for in the SCAG regional demographics and growth forecasts in the 2020-2045 RTP/SCS and would not directly or indirectly induce substantial unplanned population growth in the area. Additionally, development of new campus housing under the Master Plan Update would require demolition of some existing residence halls, which would temporarily require the shifting of those student beds to other student housing buildings until construction of the new buildings is completed. While the student beds provided under this alternative would remain unchanged from the proposed Master Plan Update, the Faculty and Staff Housing project would be eliminated. Elimination of faculty and staff housing units under this alternative would not offset the housing need identified in the RHNA to the same extent as the Master Plan Update. As such, impacts to population and housing under the Reduced Development Footprint Alternative would be greater than the proposed Master Plan Update.

Public Services and Recreation

The demand for public services is based on the service population. The total campus population under this alternative would be similar to the Master Plan Update. As such development under this alternative would not increase the demand for fire or police protection services, as LBFD and UPD already service the campus. Additionally, as adequate service is provided by the University Library at the CSULB main campus, development under this alternative would not increase the demand for library facilities. However, the elimination of the Faculty and Staff Housing project

under this alternative would eliminate the generation of school-aged children that would occur with the provision of faculty and staff housing units under the Master Plan Update. Therefore, impacts to public services under the Reduced Development Footprint Alternative would be slightly reduced as compared to the Master Plan Update

The need for new or expanded parks and recreational facilities is based on service population and access to existing open space and recreational facilities. As previously discussed, the total campus population under this alternative would be similar to the Master Plan Update, and the open space improvements proposed under the Master Plan Update would still be implemented under this alternative. Development of the Aquatics Center and Pool Renovation project and the Engineering Replacement Building project, which would include the creation of a new quad, would be eliminated under this alternative. Nonetheless, the CSULB main campus currently contains open space such as open lawn areas, the Campus Quad, landscaped pedestrian pathways, and informal gathering spaces, and the existing aquatics center and pool would remain in place under this alternative. Therefore, impacts to recreation under the Reduced Development Footprint Alternative would be similar to the proposed Master Plan Update.

Transportation

The Reduced Development Footprint Alternative would eliminate the development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. All other development proposed under the Master Plan Update would be implemented under this alternative, including the proposed mobility and circulation improvements. As such, this alternative would not conflict with plans, ordinances, or policies addressing the circulation system and impacts would be similar to the Master Plan Update. Additionally, the VMT model is based on total campus population. As previously discussed, the total campus population under this alternative would be similar to the Master Plan Update. Therefore, impacts related to VMT under the Reduced Development Footprint Alternative would be similar to the Master Plan Update.

Under the Master Plan Update, implementation of the Faculty and Staff Housing project would introduce a new driveway entrance onto Palo Verde Avenue, the construction of which would require a temporary pedestrian detour as a section of the sidewalk would be closed. It could also include the temporary closure of one lane of traffic on southbound Palo Verde Avenue. These proposed improvements that would affect roadway design under City of Long Beach jurisdiction would be subject to review and approval by the City of Long Beach and would be subject to the City's requirements for the preparation of temporary construction traffic control plans. Following completion of construction, implementation of this new driveway would permanently alter the geometry of access at this location. The location and design of the new driveway would be required to adhere to all applicable standards to ensure impacts related to hazards due to a design feature would remain less than significant. The elimination of the Faculty and Staff Housing project under this alternative would eliminate the need to alter vehicular access at that location, which would avoid related impacts associated with development of that project. Therefore, impacts related to design features under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the Master Plan Update, development under this alternative would be required to implement construction traffic control plans per the CSU standard construction BMPs outlined in the CSU Owner Controlled Insurance Program Safety Manual and follow the standards set forth in PolicyStat, which requires the State Fire Marshal to review all projects to confirm adequate emergency access and building safety features. Therefore, impacts related to emergency access

under the Reduced Development Footprint Alternative would be similar to those of the project proposed under the Master Plan Update.

Tribal Cultural Resources

As discussed in Section 3.12, Tribal Cultural Resources, the footprints for eight projects identified under the Master Plan Update, including the proposed Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, overlap with the boundaries of potentially eligible archaeological resources on the CSULB main campus that could be considered tribal cultural resources. As such, ground-disturbing activities occurring during construction at these locations could result in significant impacts to tribal cultural resources, requiring implementation of Mitigation Measures TCR-A through TCR-D to reduce impacts to less than significant. Construction activities associated with development under the Reduced Development Footprint Alternative would be similar to those described under the proposed Master Plan Update. Thus, Mitigation Measures TCR-A through TCR-D would be implemented under this alternative, as applicable. However, this alternative would eliminate development of the Faculty and Staff Housing project, the Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project, thereby avoiding ground-disturbing activities at two potentially eligible archaeological resources on the CSULB main campus that could be considered tribal cultural resources. Therefore, construction impacts to tribal cultural resources under the Reduced Development Footprint Alternative would be reduced as compared to the Master Plan Update.

Similar to the Master Plan Update, no impacts to tribal cultural resources would occur during operation of the Reduced Development Footprint Alternative.

Utilities and Energy

As discussed in Section 3.13, Utilities and Energy, development under the Master Plan Update would require the rerouting of, modifications to, or connections to some existing utilities at individual development sites, including water, stormwater drainage, electric power, and telecommunications lines. Development under this alternative would require similar activities associated with connections to utility infrastructure. Additionally, similar to the Master Plan Update, updates to enhance utility and energy efficiency would be implemented under this alternative. However, the Reduced Development Footprint Alternative would eliminate the construction of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project proposed under the Master Plan Update. The elimination of these three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that would require utility and energy consumption. As such, construction-related impacts would be slightly reduced. However, aged or outdated utility infrastructure at existing facilities that would not be demolished under this alternative (i.e., Design Building, EN2, EN3, EN4, and the pool) would remain in place and updates to enhance utility and energy efficiency would not be implemented. Therefore, operational impacts related to utilities and energy under the Reduced Development Footprint Alternative would be greater than under the proposed Master Plan Update.

Relationship to Project Objectives

Under the Reduced Development Footprint Alternative, all proposed improvements related to student housing facilities would be implemented as described under the Master Plan Update, including the New Parkside Housing Village, Hillside College Renovations/Addition, Beachside Housing, and landscape, open space, and mobility improvements between and around the student housing facilities. Therefore, this alternative would achieve the following project objectives:

5. Support an expanded residential environment by constructing new or replacement buildings, or renovating existing student housing villages to:
    - Increase student housing capacity by approximately 1,600 beds to enhance student experience, support, and wellness to support student success and retention.
    - Include a more diverse mix of housing typologies for students (undergraduate students, single graduate students, and graduate students with families)
    - Provide high quality and affordable options with an equitable mix of offerings for students.
    - Include common spaces, active outdoor spaces, and space for services.
6. Strengthen the physical connection between the two housing villages on the CSULB main campus.

The Reduced Development Footprint Alternative would eliminate development of the proposed Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and Engineering Replacement Building project. All other development proposed under the Master Plan Update would be implemented under this alternative. Additionally, this alternative would not introduce any other development projects not already included in the Master Plan Update. As this alternative would result in less development occurring at the main campus, the Reduced Development Footprint Alternative would achieve the following project objective:

7. Preserve space in the campus core for academic uses and student-focused facilities and programming to allow for greater integration of student residents.

All proposed mobility and circulation improvements would be implemented under the Reduced Development Footprint Alternative. Therefore, this alternative would achieve the following project objectives:

10. Provide mobility enhancements for safe and accessible circulation around the campus for pedestrians and bicyclists to help the campus become less reliant on vehicular mobility.
11. Provide defined campus gateways and edges with increased wayfinding and signage to highlight resources for the surrounding community by designating pathways to connect neighboring communities through the campus.

Similar to the Master Plan Update, the Reduced Development Footprint Alternative would include improvements to campus facilities proposed to accommodate anticipated student enrollment and campus population growth up to 36,000 FTES in the horizon year 2035. However, the elimination of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and Engineering Replacement Building project would limit the physical development and improvements implemented to accommodate the anticipated student enrollment growth. Therefore, this alternative would partially achieve the following project objective:

1. Support and advance the University's educational mission by guiding the physical development of the campus to accommodate gradual student enrollment growth approximately 36,000 FTES in 2035, including approximately 33,000 FTES on campus and 3,000 FTES off-campus.

The proposed Engineering Replacement Building project would demolish the existing EN2, EN3, and EN4 buildings and consolidate the programming and uses at those buildings into a new larger building at the same site. The elimination of this project under the Reduced Development Footprint Alternative would limit the ability of the University to consolidate academic programming and reduce inefficiencies associated with the existing configuration of the College of Engineering buildings on the main campus and would also constrain and possibly preclude future growth and expansion of the College. As other proposed renovation, replacement, and new construction projects and other improvements would be implemented under this alternative, this alternative would partially achieve the following project objectives:

2. Optimize the existing campus space and minimize net new gross square footage.
3. Renovate or demolish buildings that are inefficient in terms of operation, maintenance, and user comfort due to age and have critical deferred maintenance issues.
4. Replace demolished buildings with higher density, mixed use buildings that consolidate and integrate colleges and student support spaces.

The proposed Aquatics Center and Pool Renovation project would repair and upgrade the existing pool and may increase the size of the facility and include additional bleacher seating. This project would be eliminated under the Reduced Development Footprint Alternative; however, other proposed improvements to athletic facilities would be implemented. Therefore, this alternative would partially achieve the following project objective:

12. Provide high-quality athletic facilities and optimize existing recreational fields by better utilizing land area and improving connections to and through the sports precinct facilities.

The proposed Faculty and Staff Housing project would provide 285 new faculty and staff housing units in a new six-story building near the northwest corner of State University Drive and Palo Verde Avenue. This project would be eliminated under the Reduced Development Footprint Alternative. Therefore, this alternative would not achieve the following project objectives:

8. Retain and recruit high-quality faculty and staff by providing on-campus affordable housing options.
9. Provide new faculty and staff housing at the perimeter of the campus to allow ease of access for faculty and staff who maintain social connections and conduct other daily activities off-campus, such as grocery shopping, dropping children off at school, and other family functions.

Conclusion

As discussed above, the Reduced Development Footprint Alternative would eliminate development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project. All other development proposed under the Master Plan Update would be implemented under this alternative. The reduction in the amount of development that would occur under this alternative would result in reduced construction activities. As such, impacts under this alternative would be reduced as compared to the Master Plan Update in eight areas: aesthetics; air quality (construction); GHG emissions (construction); hydrology and water quality; noise; public services and recreation; transportation; and utilities and energy (construction).

Additionally, development under this alternative would require implementation of the same mitigation measures to reduce construction impacts to special-status wildlife species and paleontological resources. However, the elimination of the three identified projects under this alternative would avoid the ground-disturbing activities associated with construction of these projects. As such, the elimination of these three projects under the Reduced Development Footprint Alternative would result in fewer construction activities that could impact special-status bird and bat species, archaeological resources, paleontological resources, and tribal cultural resources. Therefore, this alternative would result in reduced construction impacts in the following areas: biological resources; cultural resources; geology, soils, and paleontological resources; and tribal cultural resources. Elimination of faculty and staff housing units under this alternative would not offset the housing need identified in the RHNA to the same extent as the Master Plan Update. As such, Reduced Development Footprint Alternative would result in greater population and housing impacts than the proposed Master Plan Update.

The Reduced Development Footprint Alternative would also result in greater impacts in six areas: air quality (operation); GHG emissions (operation); and utility and energy usage. Impacts in the following areas would be similar to those identified for implementation of the Master Plan Update: biological resources (operation); cultural resources (operation); geology, soils, and paleontological resources (operation); and tribal cultural resources (operation).

As the Reduced Development Footprint Alternative would eliminate development of three projects that partially overlap significant or potentially significant archaeological resources, this alternative would avoid the potentially significant impacts to archaeological resources and tribal cultural resources associated with development at those sites. Additionally, the reduced development that would occur under this alternative would reduce construction and operation impacts in several areas as compared to implementation of the Master Plan Update. However, the elimination of the Faculty and Staff Housing project would result in increased impacts to population and housing.

The Reduced Density Development Footprint Alternative would achieve five of the 12 project objectives; would partially achieve five of the project objectives to a lesser extent than the Master Plan Update; and would not achieve two of the project objectives. Therefore, the Reduced Development Footprint Alternative would not fully achieve or attain a majority of the project objectives.

5.5 Environmentally Superior Alternative

In accordance with CEQA Guidelines Section 15126.6, an EIR shall identify an environmentally superior alternative among the feasible alternatives. The analysis in this chapter is summarized in Table 5-1, which provides a comparison of the impacts of the alternatives to the Master Plan Update. The No Project Alternative would avoid the potentially significant aesthetics impacts associated with new permanent lighting at the Jack Rose Track/Commencement Facilities proposed under the Master Plan Update. However, the No Project Alternative would not implement the mitigation measures identified to reduce impacts under the Master Plan Update. As such, the No Project Alternative would result in greater potential impacts to nesting birds, roosting bats, and paleontological resources, which would not be mitigated. Additionally, improvements to the operation of facilities at the CSULB main campus would not be implemented, resulting in greater impacts related to vehicle/pedestrian, vehicle/bicycle, and left turn conflicts, and utility and energy usage. Thus, while the No Project Alternative would avoid one potentially significant impact associated with the Master Plan Update, it would also result in nine increased impacts, including a significant unavoidable impact associated with construction vibration. Additionally, the No Project Alternative would not achieve most of the project objectives.

The Faculty and Staff Housing Project Design Alternative would not avoid or substantially lessen any of the potentially significant impacts associated with the project proposed under the Master Plan Update. However, similar to the Master Plan Update, all potentially significant impacts identified under this alternative would be mitigated to levels less than significant. Although this alternative would result in slightly increased noise impacts during construction and operation due to the increased size of the building, construction noise impacts would be less than significant with mitigation and crowd noise levels from outdoor gathering spaces during operation would not exceed the threshold. Additionally, the Faculty and Staff Housing Project Design Alternative would achieve all of the project objectives.

The Reduced Development Footprint Alternative would avoid the potentially significant impacts to archaeological resources and tribal cultural resources associated with development of the Faculty and Staff Housing project, Aquatics Center and Pool Renovation project, and the Engineering Replacement Building project. However, with the elimination of the Faculty and Staff Housing project, this alternative would not offset the housing need identified in the RHNA to the same extent as the Master Plan Update, thereby resulting in increased population and housing impacts. The Reduced Development Footprint Alternative would also result in greater impacts related to air quality, GHG, and utility and energy usage as updates to enhance utility and energy efficiency would not be implemented. Nonetheless, the reduction in development under this alternative would result in reduced construction impacts as compared to the Master Plan Update and would avoid impacts in two areas. As such, this alternative would result in the least impacts of the three alternatives. Additionally, the Reduced Development Footprint Alternative would achieve most of the project objectives, although not to the same extent as under the Master Plan Update. Therefore, the Reduced Development Footprint Alternative is considered the environmentally superior alternative.

Table 5-1: Comparison of Impacts of the Alternatives to the Proposed Master Plan Update

Impact Area	Proposed Master Plan Update	No Project Alternative	Faculty and Staff Housing Project Design Alternative	Reduced Development Footprint Alternative
Aesthetics				
Construction	I	Less	Similar	Less
Operation	I	Less	Greater	Less
Air Quality				
Construction	II	Less	Similar	Less
Operation	II	Greater	Similar	Greater
Biological Resources				
Construction	I	Greater	Similar	Less
Operation	III	Similar	Similar	Similar
Cultural Resources				
Construction	I	Less	Similar	Less
Operation	II	Similar	Similar	Similar
Geology, Soils, and Paleontological Resources				
Construction	I	Greater	Similar	Less
Operation	III	Similar	Similar	Similar
Greenhouse Gas Emissions				
Construction	II	Less	Similar	Less
Operation	II	Greater	Similar	Greater
Hydrology and Water Quality				
Construction	II	Less	Similar	Less
Operation	II	Less	Similar	Less
Noise				
Construction	I	Greater	Greater	Less
Operation	I	Similar	Greater	Less
Population and Housing	II	Greater	Similar	Greater
Public Services and Recreation				
Construction	II	Similar	Similar	Less
Operation	II	Greater	Similar	Less

Table 5-1: Comparison of Impacts of the Alternatives to the Proposed Master Plan Update

Impact Area	Proposed Master Plan Update	No Project Alternative	Faculty and Staff Housing Project Design Alternative	Reduced Development Footprint Alternative
Transportation				
Construction	II	Less	Similar	Less
Operation	II	Greater	Similar	Less
Tribal Cultural Resources				
Construction	I	Less	Similar	Less
Operation	II	Similar	Similar	Similar
Utilities and Energy				
Construction	II	Less	Similar	Less
Operation	II	Greater	Similar	Greater

Notes:

I. Potentially Significant Impact Unless Mitigated
II. Less than Significant Impact
III. No Impact

Less: Impact is lower in magnitude than impacts of the proposed Master Plan Update.
Similar: Impact is similar in magnitude to impacts of the proposed Master Plan Update.
Greater: Impact is greater in magnitude than impacts of the proposed Master Plan Update.

CHAPTER 6

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CHAPTER 7
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4.0 Other CEQA Considerations

No references were used.

5.0 Alternatives

No references were used.

6.0 List of Preparers and Persons Consulted

No references were used.