UCSF
University of California
San Francisco

UCSF Real Estate

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January 16, 2024

Project: UCSF Benioff Children's Hospital Oakland New Hospital Building Project
Location: 747 52nd Street, Oakland, California 94609
Assessor's Parcel Numbers: 14-1205-19-1, 14-1204-14-5, and 14-1204-15
Sponsor: University of California, San Francisco (UCSF)
Lead Agency: The Regents of the University of California
Staff Contact: Diane Wong, UCSF (415) 502-5952

This is the Draft Environmental Impact Report (Draft EIR – State Clearinghouse Number 2023050540) for the above-named project, prepared pursuant to the requirements of the California Environmental Quality Act (CEQA). The document is available at https://tiny.ucsf.edu/BCHOaklandNHBCommunity for a 45-day public review and comment period beginning **January 16, 2024 through March 1, 2024**.

Project Description

UCSF Benioff Children's Hospital (BCH) Oakland is a safety net hospital that serves as one of the very few acute care pediatric hospitals providing Level 1 trauma services. UCSF is proposing to construct a new hospital building and associated improvements at the BCH Oakland campus site, collectively known as the New Hospital Building (NHB) Project. The NHB Project would address seismic safety requirements, other regulatory requirements, and industry standards for contemporary hospitals; increase inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site. Construction of the NHB Project would begin in Summer 2024 and be completed by early 2031, with the exception of renovations to existing building which would extend into early 2033.

The NHB Project would include a 332,523 gross square feet (gsf) new hospital building, consisting of 8 stories with rooftop helistop, and a full basement; a 4-story 270-space parking structure; a one-story, 6,100 gsf site support building; renovation and/or structural retrofitting of existing buildings within the Project site; and a variety of transportation, infrastructure, and landscape improvements. The NHB Project would also involve demolition or relocation of approximately 110,700 gsf of existing buildings, and renovation of approximately 30,000 gsf of existing building space. Under the NHB Project, the new hospital building would house 128 inpatient beds, of which 72 beds would be relocated from the existing facilities on the Project site, and 82 beds would remain in the existing facilities, for a total of 210 inpatient beds at the Project site (a net increase of 33 inpatient beds over existing conditions). A Project variant is analyzed in this EIR at an equal level of detail as the proposed Project involving a design change in which case the proposed helistop structure would be constructed on top of the new parking structure instead of atop the new hospital building.

UCSF is one of 10 campuses in the University of California system. Each UC campus is required periodically to prepare a Long Range Development Plan (LRDP) to guide campus growth and future physical development. In 2014, the UC Regents adopted the UCSF 2014 LRDP, which serves as a comprehensive physical land use plan and policy document to guide the physical development of UCSF at all its campus sites, accommodating future increases in enrollment and projected clinical, educational and research demand. UCSF proposes to amend the 2014 LRDP to include the BCH Oakland facilities in the UCSF 2014 LRDP space program. This would include the main UCSF BCH Oakland campus site, and smaller BCH Oakland-owned off-site locations.

For purposes of the California Environmental Quality Act (CEQA), the University of California is lead agency for the proposed NHB Project.

Anticipated Environmental Effects

The proposed NHB Project is anticipated to result in potentially significant environmental effects relating to Air Quality, Biological Resources, Cultural Resources and Tribal Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology and Water Quality, Noise and Vibration; Transportation; and Cumulative Impacts. The Project site is located on a list of sites enumerated under Section 65962.5 of the Government Code.

Public Review and Comment

As indicated above, the Draft EIR is available at https://tiny.ucsf.edu/BCHOaklandNHBCommunity for a 45-day public review and comment period beginning **January 16, 2024 through March 1, 2024**.

If you would like a paper copy of the Draft EIR, please call (415) 502-5952 and leave a message clearly stating your full name, mailing address, and contact information (email or phone number).

During the public comment period, the public may submit comments on the content and adequacy of the Draft EIR analysis. Comments may be submitted in writing and/or orally at the Draft EIR public hearing (see information below).

Submission of Written Comments

- Submission of written comments via email is encouraged. Please email comments to **BCHOaklandNHB@ucsf.edu.**
- Should you wish to send written comments via regular mail, please mail your comment letter to Diane Wong, UCSF Real Estate - Campus Planning, 654 Minnesota Street, San Francisco, CA 94143-0287.

Please include your full name and address in written correspondence. All comments must be received no later than **5:00 PM** on **March 1, 2024**.

Draft EIR Public Hearing

UCSF will hold a Draft EIR Public Hearing on **February 15, 2024** beginning at 6:00 p.m. to receive oral comments on the adequacy of the information presented in the Draft EIR. The Draft EIR Public Hearing will be conducted online via Zoom. If you are interested in attending this meeting, please register at: https://tiny.ucsf.edu/NHBDraftEIRHearing. After registering, you will receive a confirmation email containing information about joining the meeting. If you would like to attend the public hearing but do not have online access to attend via Zoom, please contact us by February 9, 2024 for accommodation.

Please note that all public comments made in writing or in oral testimony at the Draft EIR Public Hearing will be part of the public record. Comments received at the Public Hearing or in writing will be responded to in a Comments and Responses document to be prepared subsequent to the close of the comment period. The Comments and Responses document, together with the Draft EIR, will comprise the Final EIR which will be prepared for the University of California Board of Regents to consider for certification.

Thank you for your interest in this project.

Diane Wong, Environmental Coordinator
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DRAFT

JANUARY 2024

UCSF BENIOFF CHILDREN'S HOSPITAL OAKLAND NEW HOSPITAL BUILDING PROJECT

Environmental Impact Report

State Clearinghouse Number 2023050540

Artist's Rendering

DRAFT

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TABLE OF CONTENTS

UCSF Benioff Children's Hospital Oakland New Hospital Building Project Environmental Impact Report

Page

Page

Page

Figures

Page

Figures (Continued)

Tables

Page

Tables (Continued)

Page

Tables (Continued)

Appendices

Acronyms and Other Abbreviations

2014 LRDP	2014 Long Range Development Plan
AADT	average annual daily traffic volume
ABAG	Association of Bay Area Governments
AB 32	California Global Warming Solutions Act
AB 52	California Assembly Bill 52
AB 117	California Assembly Bill 117
AB 197	California Assembly Bill 197
AB 341	California Assembly Bill 341
AB 939	California Integrated Waste Management Act of 1989
AB 1007	California Assembly Bill 1007
AB 1279	California Assembly Bill 1279
AB 1395	California Assembly Bill 1395
AB 1493	California Assembly Bill 1493
AB 1807	California Assembly Bill 1807
AB 1826	California Assembly Bill 1826
AB 1881	California Assembly Bill 1881
AB 2588	California Assembly Bill 2588
ACC	Advanced Clean Cars
ACFCWD	Alameda County Flood Control and Water Conservation District
AC Transit	Alameda-Contra Costa Transit District
ACUPCC	American College and University Presidents' Climate Commitment
ADA	federal Americans with Disabilities Act of 1990
AEDT	Aviation Environmental Design Tool
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AF	acre-feet
AFY	acre-feet per year
AQI	Air Quality Index
ASB	Administrative Support Building
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASI	Area of Secondary Importance

asl	above sea level
AST	Aboveground Storage Tank
ATCM	Airborne Toxic Control Measure
BAAQMD	Bay Area Air Quality Management District
BACT	best available control technology
BART	San Francisco Bay Area Rapid Transit District
BCH Oakland	Benioff Children's Hospital Oakland
bgs	below ground surface
BMPs	best management practices
Btu	British thermal units
°C	degrees Celsius
CAA	federal Clean Air Act
CACS	Chancellor's Advisory Committee on Sustainability
CalARP	California Accidental Release Prevention Program
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
Cal OES	Governor's Office of Emergency Services
Caltrans	California Department of Transportation
CalRecycle	California Department of Resources Recycling and Recovery
CALSTAR	California Shock Trauma Air Rescue
CAP	Clean Air Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
Cath/IR	cardiac catheterization and interventional radiology
CBSC	California Building Standards Code
CCA	Community Choice Aggregation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDHS	California Department of Health Services
CII	commercial, industrial and institutional
CDPH-RHB	California Department of Public Health, Radiological Health Branch
CDMG	California Division of Mines and Geology
CEC	California Energy Commission

CEQA	California Environmental Quality Act
CERCLA	federal Comprehensive Environmental Response, Compensation and Liability Act of 1980
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CH_4	methane
CHRCO	Children's Hospital & Research Center Oakland
CNDDB	California Natural Diversity Database inventory of rare plants and animals
CMP	Campus Master Plan
CNEL	Community Noise Equivalent Level
CNI	Carbon Neutrality Initiative
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CSC	California Species of Concern
CNI	Carbon Neutrality Initiative
CSPD	central sterile processing department
CT	computed tomography
CTC	Alameda County Transportation Commission
CUP	Central Utility Plant
CUPAs	certified unified program agencies for hazardous materials programs
CVC	California Vehicle Code
CVP	Central Valley Project
CWA	federal Clean Water Act
cy	cubic yards
D&T Center	Ford Diagnostic and Treatment Center
dB	decibel
dBA	A-weighted decibel
DDT	dichloro-diphenyl-trichloroethane

DNL	day-night noise level
DOE	U.S. Department of Energy
DOC	California Department of Conservation
DOSD	California Department of Water Resources, Division of Safety of Dams
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
DPR	Department of Parks and Recreation
DSA	Division of State Architect
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EAP	Emergency Action Plan
EBCE	East Bay Community Energy
EBMUD	East Bay Municipal Utility District
EBRPD	East Bay Regional Park District
EC	UCSF Environmental Coordinator
ECAP	Oakland 2030 Equitable Climate Action Plan
ED	Emergency Department
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EJ	Environmental Justice
EO	Executive Order issued by California Governor or U.S. President
ESA	federal Endangered Species Act
ESA	phase 1 Environmental Site Assessment
EV	electric vehicle
EVSE	Electric Vehicle Supply Equipment
°F	degrees Fahrenheit
FAA	Federal Aviation Administration
FAR	floor area ratio
FDP	Final Development Plan
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FICAN	Federal Interagency Committee on Aviation Noise
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps

FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
FQHC	Federally Qualified Health Center
FY	Fiscal Year
GFRC	glass fiber reinforced concrete
GHGRS	Greenhouse Gas Reduction Strategy
GHG	Greenhouse gas
gpm	gallons per minute
gsf	gross square feet
GSA	groundwater sustainability agency
GSP	Groundwater Sustainability Plan
GWh	gigawatt hours
GWP	global warming potential
HABS	Historic American Buildings Survey
HCAI	California Department of Health Care Access and Information
HEPA	high-efficiency particulate air
HI	hazard index for hazardous or toxic air pollutant exposure
HMBP	hazardous materials business plan
HCN	Healthy Campus Network
HP	horsepower
HRA	health risk assessment for hazardous or toxic air pollutants
HVAC	heating, ventilation and air conditioning
I-80	Interstate 80
I-880	Interstate 880
IEPR	Integrated Energy Policy Report
I/I	inflow and infiltration
ICU	intensive care unit
IP	inpatient pharmacy
IPCC	Intergovernmental Panel on Climate Change
kV	kilovolt
kW	kilowatt
kWh	kilowatt-hours
L_{90}	noise level exceeded 90 percent of the time
L_{dn}	day-night noise level
L_{eq}	equivalent continuous sound level

L_{max}	maximum noise level
lb	pounds
LUTE	Land Use and Transportation Element
LBP	lead-based paint
LCFS	Low Carbon Fuel Standard
LEED®	Leadership in Energy and Environmental Design
LID	Low Impact Development
LRA	Local Responsibility Area
LRDP	Long Range Development Plan
MBTA	Federal Migratory Bird Treaty Act
MEI	maximally exposed individual
mgd	million gallons per day
MLD	most likely descendant
MLK Jr. Way	Martin Luther King Junior Way
MMBTUs	million British Thermal Units
MMI	Modified Mercalli Intensity
MMRP	Mitigation Monitoring and Reporting Program required by CEQA
$MMTCO_2e$	Million metric tons of carbon dioxide equivalent
mph	miles per hour
MRI	magnetic resonance imagery
MRZ	Mineral Resource Zone designated by the State Geologist
MS4	Municipal Separate Storm Sewer System
msl	mean sea level
MTC	Metropolitan Transportation Commission
MT CO_2e	metric tons of carbon dioxide equivalent
MVA	megavolt amperes
Mw	Maximum Moment Magnitude Earthquake
MW	megawatt
MWh	megawatt-hours
MWh/year	megawatt-hours per year
MWWTP	Main Wastewater Treatment Plant
NAAQS	national ambient air quality standards
NAHC	California Native American Heritage Commission
NAVD	The North American Vertical Datum of 1988

NECPA	National Energy Conservation Policy Act
NFIP	National Flood Insurance Program
NHB	New Hospital Building
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NLR	noise level reduction
NICU	neonatal intensive care unit
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	CEQA Notice of Availability
NOP	CEQA Notice of Preparation
NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NPC	Nonstructural Performance Category
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NWIC	Northwest Information Center of the California Historical Resources Information System
OFD	Oakland Fire Department
OPD	Oakland Police Department
OHP	State of California Office of Historic Preservation
OPC 1	Outpatient Center 1
OPC 2	Outpatient Center 2
OPR	Governor's Office of Planning and Research
OSCAR	Open Space, Conservation, and Recreation
OSHA	Occupation Safety and Health Administration
OSHPD	Office of Statewide Health Planning and Development
PCBs	polychlorinated biphenyls
PDA	Priority Development Area identified by ABAG
PDP	Preliminary Development Plan
PG&E	Pacific Gas and Electric Company
PEV	plug-in electric vehicle
PHB	pedestrian hybrid beacon
PHEVs	plug-in hybrid electric vehicles
PICU	pediatric intensive care unit

PM	particulate matter
$PM_{2.5}$	particulate matter of 2.5 microns in diameter or less
PM_{10}	particulate matter of 10 microns in diameter or less
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
PUD	Planned Unit Development
PV	photovoltaic
RCRA	Resource Conservation and Recovery Act of 1976
RCNM	Roadway Construction Noise Model
REACH	Redwood Empire Air Care Helicopter
REL	reference exposure level
RHNA	Regional Housing Need Allocation developed by ABAG
ROG	reactive organic gases
RPP	residential parking permit
RPS	Renewable Portfolio Standard established by the CEC
RWQCB	Regional Water Quality Control Board
SAAQS	State ambient air quality standards
SARA	Superfund Act and Reauthorization Act of 1986
SB X1-2	California Senate Bill X1-2
SB 32	California Senate Bill 32
SB 100	California Senate Bill 100
SB 107	California Senate Bill 107
SB 350	California Senate Bill 350
SB 375	California Senate Bill 375
SB 610	California Senate Bill 610
SB 743	California Senate Bill 743
SB 1078	California Senate Bill 1078
SB 1383	California Senate Bill 1383
SCA	City of Oakland's Standard Conditions of Approval
SB 1953	California Senate Bill 1953
SCS	Sustainable Communities Strategy required by SB 375
SEL	Sound Exposure Level
SEP	UC Strategic Energy Plan

SFBAAB	San Francisco Bay Area Air Basin
SGMA	Sustainable Groundwater Management Act of 2014
SO_2	sulfur dioxide
SOV	single-occupant vehicle
SPC	Structural Performance Category
SR 24	State Route 24
SRA	State Responsibility Areas
STC	sound transmission class
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TA	Time Above
TACs	toxic air contaminants
TAZ	Transportation Analysis Zone
TAF	thousand acre-feet
TDM	Transportation Demand Management
TMDL	total maximum daily load for water quality standards
TMP	Transportation Management Plan
TPA	Transit Priority Area
TPY	tons per year
TRU	Transportation Refrigeration Units
TSCA	Toxic Substances Control Act
UC	University of California
UACS	University's Advisory Committee on Sustainability
UCMP	University of California Museum of Paleontology
UCOP	University of California Office of the President
UCPD	University of California, San Francisco Police Department
UCSF	University of California San Francisco
USBR	U.S. Bureau of Reclamation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USTs	Underground storage tanks
UWMP	Urban Water Management Plan
$\mu g/m^3$	micrograms per cubic meter

VdBs	vibration decibels
VDECS	Verified Diesel Emission Control Strategy
VMT	vehicle miles traveled
VOCs	volatile organic compounds
WDRs	Waste Discharge Requirements
WGCEP	Working Group on California Earthquake Probabilities
WMAC	Waste Management of Alameda County
WRCC	Western Regional Climate Center
WSCP	Water Shortage Contingency Plan
WSA	Water Supply Assessment
WSE	Water Supply Evaluation
ZEV	zero emission vehicles

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CHAPTER 1
Introduction

1.1 Purpose of the NHB Project EIR

This Draft EIR Environmental Impact Report (EIR) assesses the potentially significant environmental effects from the implementation of the proposed University of California, San Francisco (UC San Francisco or UCSF) New Hospital Building (NHB) Project on the UCSF Benioff Children's Hospital Oakland (BCH Oakland) campus site.

The University has prepared this EIR on the NHB Project for the following purposes:

- To inform the general public, the local community, and responsible, trustee and federal public agencies of the nature of the NHB Project, its potentially significant environmental effects, feasible measures to mitigate those effects, as well as reasonable and feasible alternatives;
- To enable the University to consider the environmental consequences of implementing the NHB Project, adopting an amendment of the UCSF 2014 Long Range Development Plan (LRDP) to incorporate the BCH Oakland campus site into the LRDP, and approving the proposed NHB Project;
- To enable responsible agencies to consider the environmental consequences of those aspects of the NHB Project for which they have a role in approving or issuing permits; and
- To satisfy California Environmental Quality Act (CEQA) requirements.

The NHB Project consists of a new hospital building and associated improvements on the UCSF BCH Oakland campus site. The NHB Project would address seismic safety requirements, other regulatory requirements, and industry standards for contemporary hospitals; increase inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site.

The NHB Project would include the construction of a 332,573 gross square foot (gsf) new hospital building with a rooftop helistop; a parking structure with 270 parking stalls; a 6,100 gsf site support building; 30,000 gsf of renovation and/or structural retrofitting of existing buildings within the Project site; and a variety of transportation, infrastructure, and landscape improvements.

The UCSF BCH Oakland campus site is not included in the UCSF 2014 LRDP at the present time. As the UCSF BCH Oakland campus site is controlled by the University, UCSF proposes to amend the 2014 LRDP to include the UCSF BCH Oakland campus site. Approval of an amendment of the UCSF 2014 LRDP will be requested from the UC Board of Regents (UC Regents) at the same time that the NHB Project is presented to the UC Regents for approval.

As required by CEQA, this EIR: (1) assesses the potentially significant direct and indirect environmental impacts, as well as the potentially significant cumulative impacts, associated with implementation of the NHB Project; (2) identifies feasible means of avoiding or substantially lessening significant adverse impacts; and (3) evaluates a range of reasonable alternatives to the proposed NHB Project, including the required No Project Alternative.

As described in CEQA and the *CEQA Guidelines*, public agencies cannot approve projects that may cause a significant environmental impact without adopting mitigation measures or alternatives to avoid or substantially lessen those significant environmental effects, where feasible. In discharging this duty, a public agency shall balance the project's significant effects on the environment with its benefits, including economic, legal, social, or technological. This EIR is an informational document, the purpose of which is to identify the potentially significant environmental effects of implementing the NHB Project, and to indicate the manner in which those significant effects can be avoided or significantly lessened. The EIR also identifies any significant and unavoidable adverse impacts that cannot be mitigated to a less-than-significant level. Reasonable and feasible alternatives to the NHB Project are identified that would avoid or substantially lessen any significant adverse environmental effects of the NHB Project.

The University of California (University or UC) is the "lead agency" for the environmental review of the NHB Project and the related amendment to the UCSF 2014 LRDP to include the UCSF BCH Oakland campus. UC is governed by the UC Regents, which under Article IX, Section 9, of the California Constitution, has "full powers of organization and government" subject only to very specific areas of legislative control. The UC Regents has the responsibility for certifying this EIR and approving the UCSF 2014 LRDP amendment. Although the EIR does not determine the ultimate decision that will be made regarding implementing the NHB Project, CEQA requires the UC Regents to consider the information in the EIR and make findings regarding each significant effect identified in the EIR.

1.2 Background

In 2014, UCSF entered into an affiliation agreement with Children's Hospital & Research Center Oakland (CHRCO) to align the two institutions. At that time, a Campus Master Plan (CMP) for the 11-acre campus, which provided for the development of new and replacement facilities within the existing campus, was already under review by the City of Oakland, which maintained land use jurisdiction and CEQA lead agency status for the campus as CHRCO was then a solely private institution.

In 2015, the City of Oakland certified the *Children's Hospital and Research Center Oakland Campus Master Plan Project Final EIR* (CHRCO CMP Project FEIR) and approved the CMP. The entitlements for the CMP included, among other things, a Planned Unit Development (PUD) permit. CMP Phase 2 included certain development on the NHB Project site, including a new Acute Care Patient Pavilion, a Link Building with a helipad on the roof, expansion of the central utility plant, a new parking structure, and demolition of several buildings. A Preliminary Development Plan (PDP) for Phase 2 was approved in 2015.

Following the 2014 agreement between CHRCO and UCSF, the hospital was renamed UCSF BCH Oakland. As the UCSF BCH Oakland campus site is now controlled by the University, UCSF has revised its approach to the modernization of the campus site. The proposed NHB Project represents the next stage of campus modernization. Although the proposed Project is conceptually the same as the Phase 2 development analyzed in the CHRCO CMP Project FEIR for the portion of the campus site south of 52nd Street, there are some differences in the proposed improvements. As such, the University, acting as the lead agency under CEQA, determined that it will prepare a project EIR that analyzes and discloses the environmental impacts of the proposed NHB Project.

The NHB Project EIR is a stand-alone project EIR. As such, while the NHB Project EIR draws from the CHRCO CMP Project FEIR for relevant background information where appropriate, it assesses all environmental topics required under CEQA without scoping out any issues, discloses all project and cumulative impacts, and identifies project-specific mitigation measures to reduce or avoid significant impacts.

1.3 Environmental Review Process

1.3.1 Notice of Preparation and Public Scoping

On May 22, 2023, a Notice of Preparation (NOP) was published for the NHB Project EIR. A 30-day public comment period was provided which ended on June 21, 2023. A copy of the NOP is included in **Appendix A**. A scoping meeting was held on June 6, 2023 via Zoom to accept public input on environmental topics to be analyzed in the EIR and approaches to the impact analyses. Written comments received on the NOP, and a transcript of the scoping meeting, are included in **Appendix B**.

The NOP indicated that the NHB Project may have a significant effect on the environment and therefore, an EIR is required. It identified specific environmental topics that require detailed study in the EIR, and topics that did not require analysis in the EIR.

1.3.2 Draft EIR

This Draft EIR is being circulated to governmental agencies, interested organizations, and individuals that may wish to review and comment on the document. *CEQA Guidelines* Sections 15086(c) and 15096(d) require Responsible Agencies or other public agencies to provide comment on those project activities within the agency's area of expertise or project activities that are required to be carried out or approved by the agency, and the agency should support those comments with either oral or written documentation. Publication of this Draft EIR initiates a 45-day public review period, during which time UCSF will accept comments on the Draft EIR. The public review period for this Draft EIR for the proposed NHB Project is from **January 16, 2024** through **March 1, 2024**.

This Draft EIR, including supporting technical appendices and reference materials, can be found at: UCSF Real Estate – Campus Planning, 654 Minnesota Street, San Francisco, CA 94143. The University encourages agencies and interested parties to submit written comments on the Draft EIR electronically to the following email address: BCHOaklandNHB@ucsf.edu. Written comments may also be submitted via email at BCHOaklandNHB@ucsf.edu, or via regular mail to Diane Wong, UCSF Real Estate - Campus Planning, 654 Minnesota Street, San Francisco, CA 94143-0287.

1.3.3 Comments and Responses and Final EIR

Following the close of the public and agency comment period for this Draft EIR on **March 1, 2024**, the University will prepare responses to all written comments and to oral comments received at the public hearing that raise CEQA-related environmental issues regarding the NHB Project and the analysis in this Draft EIR. The responses will be published in the Final EIR. The Final EIR will be considered by the UC Regents in a public meeting and certified if it is determined to be in compliance with CEQA. Upon certification of the Final EIR, the UC Regents will consider whether to adopt the proposed LRDP amendment, as well as approve the proposed NHB Project.

1.3.4 Mitigation Monitoring and Reporting Program

Throughout this EIR, mitigation measures have been described in language that will facilitate establishment of a Mitigation Monitoring and Reporting Program (MMRP). As required under CEQA (see *CEQA Guidelines*, Section 15097), an MMRP will be prepared and presented to the Regents at the time of certification of the Final EIR for the proposed NHB Project and will identify the specific timing and roles and responsibilities for implementation of adopted mitigation measures.

1.4 Campus, Public and Agency Outreach

The NHB Project planning process included extensive outreach to individuals, agencies and the general public to provide information about the proposal and to receive feedback. Over the course of 2023, UCSF hosted a series of community meetings to discuss various NHB Project topics, including the need for the project, the important history of the original on-site hospital, site constraints, proposed building massing and design, site circulation and transportation planning, and helistop planning. Community meetings are ongoing and feedback from the community continues to shape and refine the proposal.

UCSF also provided informational presentations to the City of Oakland Landmarks Preservation Advisory Board, and the Planning Commission. UCSF staff continue to meet with City agencies on topics of mutual interest, including on aspects of the proposal that will require City approval, such as the proposed helistop relocation, street tree removals and plantings, and curb cuts.

1.5 Uses of the NHB Project EIR

This NHB Project EIR will be used by the UC Regents to evaluate the environmental implications of implementing the proposed NHB Project.

1.6 Approvals Required

UC Regents Approvals

- Certification of the Final EIR
- Amendment of the UCSF 2014 LRDP to include the BCH Oakland campus site
- NHB Project design, including construction and operation of the helistop

City Approvals

- Oakland City Council approval of helistop relocation, pursuant to California PUC Code 21661.5
- New and widened curb cuts
- Public utility easements
- Street tree removals
- Other improvements in the public right-of-way

Bay Area Air Quality Management District

- Stationary source permit for diesel generators

California Department of Healthcare Access and Information (HCAI)

- Building permit approval and construction oversight for clinical facilities

Caltrans Division of Aeronautics

- Heliport Site Approval Permit, authorizing construction
- Heliport Permit, authorization operations

Federal Aviation Administration

- Heliport Airspace Analysis Determination

1.7 Report Organization

Chapter 1, ***Introduction***, provides an introduction and overview of the proposed NHB Project; describes the intended uses of the EIR, including the review and certification process; and discusses the organization of the Draft EIR.

Chapter 2, ***Summary of Environmental Impacts and Mitigation Measures***, summarizes the environmental impacts that would result from implementation of the proposed NHB Project, lists proposed mitigation measures and indicates the level of significance of impacts after mitigation.

A summary of the alternatives to the NHB Project, and the environmentally superior alternative, is also provided.

Chapter 3, ***Project Description***, provides a detailed description of the proposed NHB Project, including a discussion of project need and objectives, a description of proposed physical development at the campus site under the NHB Project, a description of projected increases in operations, a description of Project construction details, and a description of the proposed revisions to the UCSF 2014 LRDP.

Chapter 4, ***Environmental Setting, Impacts and Mitigation Measures****,* provides, with respect to each environmental impact category an introduction to environmental analysis; describes the NHB Project's environmental setting, includes a regulatory framework, and discusses the methodology used for evaluating the environmental impacts of the proposed NHB Project; provides a project-level analysis of the proposed NHB Project; an analysis of cumulative impacts; and identifies mitigation measures that would reduce or avoid those impacts that are found to be significant.

Chapter 5, ***CEQA Statutory Sections***, summarizes significant and unavoidable impacts, significant irreversible environmental changes, and any growth-inducing impacts.

Chapter 6, ***Alternatives***, describes the alternatives to the proposed NHB Project that could avoid or substantially lessen the project's significant effects and evaluates their environmental effects in comparison to the proposed NHB Project.

Chapter 7, ***Report Preparation***, identifies the persons who prepared the EIR, and individuals who were consulted during its preparation.

Appendices. The appendices include the NOP, written and oral comments, and various supporting technical studies prepared for the Draft EIR.

CHAPTER 2
Summary

2.1 Introduction

This EIR assesses the potentially significant environmental effects that could result from the implementation of the proposed University of California, San Francisco (UC San Francisco or UCSF) Benioff Children Hospital (BCH) Oakland New Hospital Building Project (NHB Project or the Project).

The University of California (University or UC) is the "lead agency" for the environmental review of the NHB Project under the California Environmental Quality Act (CEQA) and a related proposed amendment to the UCSF 2014 Long Range Development Plan (LRDP) to incorporate the UCSF BCH Oakland campus site into the LRDP.

This summary highlights the major areas of importance in the environmental analysis for the proposed NHB Project, as required by Section 15123 of the *CEQA Guidelines*. It provides a brief description of the NHB Project, the project objectives, the significant and unavoidable environmental effects, alternatives to the NHB Project, and areas of controversy known to the University. In addition, this chapter summarizes (1) all potential environmental impacts that would occur as the result of implementation of the NHB Project; (2) the recommended mitigation measures that would avoid or reduce significant environmental impacts; and (3) the level of impact significance after mitigation measures are implemented.

2.2 Project Description

In 2014, UCSF entered into an affiliation agreement with Children's Hospital & Research Center Oakland (CHRCO) to align the two institutions. At that time, a Campus Master Plan (CMP) for the 11-acre campus, which provided for the development of new and replacement facilities within the existing campus, was already under review by the City of Oakland, which maintained land use jurisdiction and CEQA lead agency status for the site as CHRCO was then a solely private institution. In 2015, the City of Oakland certified the *Children's Hospital and Research Center Oakland Campus Master Plan Project Final EIR* (CHRCO CMP Project FEIR) and approved the CMP.

The entitlements for the CMP included a Planned Unit Development (PUD) permit, which consisted of two phases. The Preliminary Development Plan (PDP) and Final Development Plan (FDP) for Phase 1 were approved consisting of various improvements in the northern half of the campus site (north of 52nd Street); construction of the improvements is still in progress. Phase 2 included additional development in the northern half of the campus site, and development in the southern half of the campus site (south of 52nd Street), including an Acute Care Patient Pavilion/Hospital, a Link Building with a helistop on the roof, new parking structure, and demolition of several buildings. The PDP for Phase 2 was approved in 2015.

Following the 2014 agreement between CHRCO and UCSF, the hospital was renamed UCSF BCH Oakland. The hospital is still under the management control of UCSF BCH Oakland, a non-profit public benefit corporation, and the UC Regents are the sole member of the nonprofit. As the UCSF BCH Oakland campus site is now controlled by the University, UCSF has revised its approach to the modernization of the campus site, and the proposed NHB Project represents the next stage of campus modernization on the campus site south of 52nd Street. Although the proposed Project is conceptually the same as the Phase 2 development analyzed in the CHRCO CMP Project FEIR for the portion of the campus site south of 52nd Street, there are some differences in the proposed improvements. As such, the University, acting as the lead agency under CEQA, determined that it will prepare a project EIR that analyzes and discloses the environmental impacts of the proposed NHB Project.

The NHB Project consists of a new hospital building and associated improvements at the campus site. The Project would address seismic safety requirements, other regulatory requirements, and industry standards for contemporary hospitals; increase inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site. The Project would include a 332,523 gsf new hospital building, consisting of 8 stories with a rooftop helistop, and a full basement; a 4-story 270-space parking structure; a one-story, 6,100 gsf site support building; renovation and/or structural retrofitting of existing buildings within the Project site; and a variety of transportation, infrastructure, and landscape improvements. The Project would also involve demolition or relocation of approximately 110,700 gsf of existing buildings, and renovation of approximately 30,000 gsf of existing building space.

Under the Project, the new hospital building would house 128 inpatient beds, of which 72 beds would be relocated from the existing facilities on the Project site, and 82 beds would remain in the existing facilities, for a total of 210 inpatient beds at the Project site (a net increase of 33 inpatient beds over existing conditions).

The Project would shift the Emergency Department (ED) access to the east side of the Project site while maintaining the main front entry access and passenger drop-off as-is at the northwest corner of the hospital complex. The principal vehicular ingress/egress point to the Project site for the public, emergency, and delivery vehicles would be via the Dover Street extension at 52nd Street. In addition, a new driveway on Martin Luther King (MLK) Jr. Way would allow right-turn access to and from the Project site for ambulances only. An internal driveway would access the ED entrance, ambulance patient drop-off, and proposed parking garage.

Approximately two-thirds of an acre of landscaping would be provided at passenger drop off areas and entrances to the new hospital building, and along internal roadways. The new hospital building would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold Certification; as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."

A Project variant is also analyzed in this EIR at an equal level of detail as the proposed Project involving a design change in which case the proposed helistop structure would be constructed on top of the new parking structure instead of atop the new hospital building.

As part of the proposed 2014 LRDP amendment, the BCH Oakland facilities would be included in the UCSF 2014 LRDP space program. This would include the main UCSF BCH Oakland campus site, and smaller BCH Oakland-owned off-site locations.

2.3 Project Objectives

The key objectives for the proposed NHB Project are as follows:

2.3.1 Fundamental Objectives

- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as a premier children's hospital, educational, research, and clinical institution.
- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as nationally recognized teaching hospital, providing accredited residency education in general pediatrics and fellowship education to pediatricians seeking subspecialty training.
- Modernize the UCSF BCH Oakland campus to address challenges that affect the long-term viability of the institution, such as aged, functionally obsolete, undersized and inefficient facilities.
- Meet seismic requirements of California Senate Bill 1953 by redeveloping a new, seismically-sound, state-of-the-art and sustainable inpatient facility.
- Maintain UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center with continued emergency service access via helicopter.
- Address the existing shortage of capacity and access to pediatric care by increasing the number of inpatient beds at UCSF BCH Oakland.
- Address the current unmet need for adolescent mental health care and services by providing behavioral health inpatient beds that meet code requirements, including required outdoor space, at UCSF BCH Oakland and providing such services.
- Address the current unmet need for ED patient services by increasing the size of the ED.
- Site and develop a new inpatient facility in a way that optimizes operational activities and maintains critical adjacencies with other clinical facilities on the site, such as the existing Patient Tower, the Ford D&T Center and Cardiac Catheterization Lab, and critical support functions.
- Develop a new inpatient facility that is optimized in its spatial layout for functionality in terms of workflow and wayfinding, and efficiency so as not to increase operational costs.

2.3.2 Development Objectives

- Develop a new inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards of contemporary hospitals, such as construction codes, sizes of operating rooms, ratio of operating rooms to pre-and post-recovery areas, space for privacy and infection control issues.

- Develop a new inpatient facility that has sufficient space to accommodate patient satisfaction requirements of contemporary hospitals such as private patient rooms, patient rooms of sufficient size to accommodate family overnight stays, and outdoor space for children.
- Develop a new inpatient facility that has sufficient space to accommodate modern technology, including telemedicine, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment, all requiring substantial infrastructure and space.
- Optimize the existing Patient Tower by making non-structural performance improvements and renovating it to continue to provide inpatient beds and necessary clinical and support functions.
- Develop a parking structure to meet the needs of essential healthcare providers and other staff, at a location that provides direct and safe access to patient facilities.
- Develop parking facilities to address patient parking needs, in particular ED patient parking.
- Maintain existing hospital operations throughout construction.

2.4 Significant and Unavoidable Environmental Effects

Throughout this EIR, significant environmental impacts are identified, and mitigation measures are described that would eliminate the impacts or reduce them to a less-than significant level. Similarly, many impacts are identified that would be less than significant without the need for mitigation measures. There are, however, a few impacts that cannot be eliminated or cannot be reduced to a level of insignificance even with the implementation of feasible mitigation measures. The significant and unavoidable environmental impacts of the NHB Project are listed in **Table 2-1**, below.

TABLE 2-1
SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE NHB PROJECT

Impacts
Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity could result in significant cumulative health risk impacts.
Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources.
Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2.5 Alternatives to the Proposed Project

The following alternatives were analyzed in detail in this EIR and compared to the proposed NHB Project. The objective of the alternatives analysis is to determine whether an alternative would feasibly obtain most of the project objectives, while avoiding or substantially lessening some of the significant effects of the proposed NHB Project.

Alternative 1: No Project

Alternative 2: New Hospital Project per the 2015 CHRCO CMP

Alternative 3: Modified Hospital Design Project

Alternative 4: Reduced Project

2.6 Areas of Controversy

Areas of controversy known to the lead agencies, including issues raised by agencies and the public, must be identified in the Summary of an EIR (14 Cal. Code Regs. Section 15123).

On May 22, 2023, a Notice of Preparation (NOP) was published for the NHB Project EIR. A 30-day public comment period ended on June 21, 2023. A copy of the NOP is included in **Appendix A**. A scoping meeting was held on June 6, 2023 via Zoom to accept public input on environmental topics to be analyzed in the EIR and approaches to the impact analyses. Written comments received on the NOP, and a transcript of verbal comments received during the scoping meeting, are included in **Appendix B**.

Based on the comments received during the public scoping period, issues of concern for the proposed NHB Project include the following:

- Address liquefaction as a potential seismic hazard
- Conduct tribal consultation outreach per Assembly Bill 52
- Analyze VMT pursuant to the City of Oakland guidelines
- Describe pedestrian, bicycle and vehicle conditions at the Project site and study area roadways
- Disclose safety issues to the State Transportation Network
- Address Project construction related impacts, including staging and traffic
- Analyze Project operational traffic
- Mitigate significant Project construction and noise impacts
- Maintain bicycle and pedestrian access during construction
- Describe Project community benefits
- Distinguish private properties from the UCSF BCH Oakland campus site
- Analyze Project impacts on migrating birds, and traffic in general (not just during construction)

Please also see Section 4.0.2, *Scope of Analysis*, for a discussion of the approach for determining which issues are within the purview of CEQA and therefore included in the scope of this EIR.

2.7 Summary of Impacts and Mitigation Measures

Table 2-2 summarizes the impacts of the proposed NHB Project, identifies the significance determination of each impact before and after mitigation, and presents the full text of the identified mitigation measures.

TABLE 2-2
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.1 Air Quality			
Impact AIR-1: Implementation of the NHB Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	LTS	None required.	NA
Impact AIR-2: Implementation of the NHB Project would not 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.	LTS	None required.	NA
Impact AIR-3: Implementation of the NHB Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	None required.	NA
Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity would result in significant cumulative health risk impacts.	S	**Mitigation Measure C-AIR-1: Clean Construction Equipment** a. Electric engines shall be used for all equipment that is commercially available as plug-in or battery-electric equipment during each construction phase and activity. Portable equipment shall be powered by grid electricity if available. Electric equipment shall include, but not be limited to, concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps. To qualify for an exception, UCSF shall require construction contractors to provide evidence supporting the conclusion that electric equipment is not commercially available and shall use the next cleanest piece of off-road equipment in terms of DPM and $PM_{2.5}$. “Commercially available” is defined as either: (1) being used for other large-scale projects in the region occurring at the same time; (2) can be obtained without significant delays to critical-path timing of construction; or (3) available within the larger northern California region. UCSF shall be responsible for the final determination of commercial availability, based on all the facts and circumstances at the time the determination is made. For UCSF to make a determination that such equipment is commercially unavailable, the operator must submit documentation from a minimum of three (3) electric off-road equipment dealers demonstrating the inability to obtain the required electric equipment needed within 6 months. b. The construction contractor shall ensure that all diesel off-road equipment shall have engines that meet the Tier 4 Final off-road emission standards, as certified by CARB, except as provided for in this section. This requirement shall be verified through submittal of an equipment inventory that includes the following information: (1) Type of Equipment, (2) Engine Year and Age, (3) Number of Years Since Rebuild of Engine (if applicable), (4) Type of Fuel Used, (5) Engine HP, (6) Verified Diesel Emission Control Strategy (VDECS) information if applicable and other related equipment data. A Certification Statement is also required to be made by the contractor for documentation of compliance and for future review by the BAAQMD as necessary. The Certification Statement shall state that the contractor agrees to compliance and acknowledges that a violation of this requirement shall constitute a material breach of contract.	SU

S = Significant Impact
SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.1 Air Quality (Continued)			
		The requirement for Tier 4 Final equipment may be waived only under the following unusual circumstances: if a particular piece of off-road equipment with Tier 4 Final standards is technically not feasible or not commercially available; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or there is a compelling emergency need to use other alternate off-road equipment. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the region occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction for the project and (ii) geographic proximity to the project site of Tier 4 Final equipment. Sufficient documentation must be provided when seeking any waiver described above. If the waiver is granted, the contractor must use the next cleanest piece of off-road equipment that is commercially available, or another alternative that results in comparable reductions of DPM and $PM_{2.5}$ emissions.	
EIR Section 4.2 Biological Resources			
Impact BIO-1: Implementation of the NHB Project could 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.	S	**Measure BIO-1a: Protection of Nesting Birds** • To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15. If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to UCSF for review and approval. • If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest. **Mitigation Measure BIO-1b: Protection of Roosting Bats** • Prior to project construction, a qualified bat biologist shall conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be demolished within the work area and within a 50-foot radius of the work area. If no roosting bats are found, no further action is required. • If a non-maternal roost of bats is found in a tree or structure to be removed or demolished as part of project construction, the individuals shall be safely evicted, under the direction of a	LTS

S = Significant Impact
SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.2 Biological Resources (Continued)			
		qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Removal or demolition should occur no sooner than at least two nights after the initial minor site modification (to alter airflow). This action allows bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of disturbance. Departure of the bats from the construction area shall be confirmed with a follow-up survey by a qualified bat biologist prior to start of construction. • If active maternity roosts are found in trees or structures that will be removed or demolished as part of project construction, tree removal or demolition of that tree or structure shall commence and be completed before maternity roosting colonies form (generally before March 1), or shall not commence until after young are flying (generally after July 31). Active maternity roosts shall not be disturbed between March 1 and July 31.	
Impact BIO-2: Implementation of the NHB Project could 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.	S	**Mitigation Measure BIO-2: Bird Collision Reduction Measures.** Bird safe measures would be developed in consultation with a qualified expert based on site-specific conditions. Preliminary construction and operational bird safe measures may include, but not limited to, the following: • Construction areas requiring lights shall implement the following measures to the extent feasible: – Construction-related lighting shall be fully shielded and focused down to ensure no significant illumination passes beyond the immediate work area. – Yellow or orange light shall be used where possible. – Construction personnel shall reduce the amount of lighting to the minimum necessary to safely accomplish the work. Building design shall: • Avoid installation of lighting in areas where not required for public safety. • Consider alternatives to all-night, floor-wide lighting when interior lights would be visible from the exterior or when exterior lights must be left on at night, including: – Installing motion-sensitive lighting – Installing task lighting – Installing programmable timers • Installing lower-wattage, sodium, and yellow-red spectrum lighting fixtures (if compatible with personnel safety requirements) • Use fully shielded exterior safety lights to contain and direct light away from the sky. • Employ glazing options, such as use of either fritted glass, Dichroic glass, etched glass, translucent glass, or glass that reflects ultraviolet light in appropriate portions of the building façades.	LTS

S = Significant Impact
SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.2 Biological Resources (Continued)			
Impact BIO-3: Implementation of the NHB Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance.	LTS	None required.	NA
Impact C-BIO-1: Implementation of the NHB Project could result in cumulatively considerable impacts on biological resources, in combination with past, present and reasonably foreseeable future projects in the vicinity of the Project site	S	Implement Mitigation Measures BIO-1a, BIO-1b, and BIO-2.	LTS
EIR Section 4.3 Cultural Resources and Tribal Cultural Resources			
Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources.	S	**Mitigation Measure CUL-1a: Documentation of the A/B Wing** Prior to any demolition work initiated at the A/B Wing, UCSF shall ensure that a qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards thoroughly documents the building and associated landscaping and setting. Documentation shall include still photography and a written documentary record of the building to the National Park Service's standards of the Historic American Buildings Survey (HABS), including accurate scaled mapping and architectural descriptions. If available, scaled architectural plans will also be included. Photographs include large-format (4"x5") black-and-white negatives and 8"x10" enlargements. Digital photography may be substituted for large-format negative photography if archived locally. The record shall be accompanied by a report containing site-specific history and appropriate contextual information relying as much as possible on previous documentation. Copies of the records shall be submitted to the Northwest Information Center at Sonoma State University and the Oakland History Center at the Oakland Public Library. **Mitigation Measure CUL-1b: Public Interpretation and Salvage Plan for the A/B Wing** Prior to any demolition work that would remove character-defining features of the A/B Wing, UCSF shall prepare a Salvage Plan for those components of the building suitable for salvage and/or reuse. A Salvage Plan shall be prepared by a qualified architectural historian or historic architect who meets the Secretary of the Interior's Professional Qualification Standards and presented to UCSF Planning staff. This would be a feasibility study to determine the structural integrity of the character-defining features associated with the A/B Wing, identify environmental factors that may require remediation prior to salvage (e.g., lead paint, chemicals, etc.), and present potential new uses of the salvaged features. The Salvage Plan will identify opportunities for UCSF to reuse character-defining features in the NHB Project.	SU

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SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.3 Cultural Resources and Tribal Cultural Resources (Continued)			
		Prior to any demolition activities that would remove character-defining features of, or demolish, an individual historical resource on the project site, UCSF shall prepare a plan for interpretive displays. The specific location, media, and other characteristics of such interpretive display(s) shall be included in this proposal. The historic interpretation plan shall be prepared in coordination with an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards and an exhibit designer or landscape architect with historical interpretation design experience. Interpretive display(s) shall document the individually eligible resource to be demolished. The interpretative plan should also explore contributing to digital platforms that are publicly accessible. A proposal describing the general parameters of the interpretive program and the substance, media, and other elements of such interpretive display shall be approved by UCSF Planning staff prior to commencement of any demolition activities. Following any demolition activities within the project site, UCSF shall provide within publicly accessible areas of the project site a permanent display(s) of interpretive materials concerning the history and architectural features of the individual historical resources.	
Impact CUL-2: Implementation of the NHB Project would not result in significant impacts to the 55th and Dover Residential District.	LTS	None required.	NA
Impact CUL-3: Implementation of the NHB Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.	S	**Mitigation Measure CUL-3: Inadvertent Discovery of Archaeological Resources and Tribal Cultural Resources** Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general archaeological and tribal cultural sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources. If pre-contact or historic-era cultural materials are encountered by construction personnel during ground-disturbing activities, all construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). The UCSF EC shall retain a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards to inspect the find within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource, construction shall cease in an area determined by the qualified archaeologist until a mitigation plan has been prepared and implemented [*CEQA Guidelines* 15064.5(b)(4)]. If the find is a potential tribal cultural resource, the UCSF EC shall contact a Native American representative or representatives (as provided by the Native American Heritage Commission) [PRC 21074(2)(c)]. The qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s), shall determine when construction can resume. If the resource is determined to be a historical resource or a unique archaeological resource, the preferred mitigation shall be preservation in place. In accordance with PRC Section 21083.2(b), preservation in place shall be accomplished through: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource; or (4) deeding the resource site into a permanent conservation easement. If preservation in place is not	LTS

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SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.3 Cultural Resources and Tribal Cultural Resources (Continued)			
		feasible, the qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s) (if the resource is pre-contact), shall prepare and implement a detailed treatment plan. In all cases treatment will be carried out with dignity and respect (including protecting the cultural character, traditional use, and confidentiality of the resource). For pre-contact Native American resources, the Native American representative(s) will be consulted on the research approach, methods, and whether burial or data recovery or alternative mitigation is appropriate for the find. Treatment for most resources could consist of (but shall not be limited to) sample excavation, site documentation, and historical research, as appropriate to the discovered resource. The treatment plan shall include provisions for analysis of data in a regional context as appropriate to the discovered resource, reporting of results within a timely manner, and dissemination of reports to local and state repositories, libraries, and interested professionals.	
Impact CUL-4: Implementation of the NHB Project could disturb human remains, including those interred outside of dedicated cemeteries.	S	**Mitigation Measure CUL-4: Inadvertent Discovery of Human Remains** In the event of discovery or recognition of any human remains during ground-disturbing activities, treatment shall comply with all applicable state and federal laws. All construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). In accordance with PRC 5097.98, the UCSF EC shall contact the Alameda County Coroner to determine that no investigation of the cause of death is required. The County Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American. Within 48 hours, the MLD shall make recommendations to the UCSF EC of the appropriate means of treating the human remains and any grave goods. Whenever the NAHC is unable to identify an MLD, the MLD fails to make a recommendation, or the parties are unable to agree on the appropriate treatment measures, the human remains shall be reinterred with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.	LTS
Impact CUL-5: Implementation of the NHB Project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 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.	S	**Mitigation Measure CUL-5a: Cultural Resources Awareness Training** UCSF shall provide a cultural resources and tribal cultural resources sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. UCSF shall invite affiliated Native American tribal representatives to participate. The training program shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The training program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located in the Project site and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The training program shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans. **Mitigation Measure CUL-5b: Cultural Resources Monitoring Plan**	LTS

S = Significant Impact
SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.3 Cultural Resources and Tribal Cultural Resources (Continued)			
		Prior to authorization to proceed, a Secretary of the Interior-qualified archaeologist shall prepare a cultural resources monitoring plan. The plan shall be reviewed by the affiliated Native American tribe(s) and UCSF. The plan shall include (but not be limited to) the following components: • Monitoring locations and circumstances based on soil types, geology, distance to known sites, and other factors; • Person(s) responsible for conducting monitoring activities, including a request to the culturally-affiliated Native American tribe(s) for a tribal monitor; • Person(s) responsible for overseeing and directing the monitors; • How the monitoring shall be conducted and the required format and content of monitoring reports; • Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports; • Protocol for notifications in case of encountering cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation); • Methods to ensure security of cultural resources if identified; • Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction. During the course of the monitoring, the archaeologist and tribal monitor may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.	
Impact C-CUL-1: Implementation of the NHB Project could result in cumulatively considerable impacts on cultural and/or tribal cultural resources, in combination with past, present and reasonably foreseeable future projects.	LTS for Historical Resources S for Archaeological Resources, Human Remains and Tribal Cultural Resources	Implement Mitigation Measures CUL-3 and CUL-4.	LTS
EIR Section 4.4 Energy			
Impact ENE-1: Implementation of the NHB Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	None required.	NA
Impact ENE-2: Implementation of the NHB Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	None required.	NA

S = Significant Impact
SU = Significant and Unavoidable with Mitigation
LTS = Less than Significant impact
NA = Not applicable

TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.4 Energy (Continued)			
Impact C-ENE-1: The NHB Project, combined with cumulative development in the BCH Oakland campus site vicinity and citywide, would not result in significant cumulative energy impacts.	LTS	None required.	NA
EIR Section 4.5 Geology and Soils			
Impact GEO-1: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	LTS	None required.	NA
Impact GEO-2: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic related ground failure, including liquefaction.	LTS	None required.	NA
Impact GEO-3: Construction and operation of the NHB Project would not have the potential to result in substantial erosion or the loss of topsoil.	LTS	None required.	NA
Impact GEO-4: The NHB Project would not 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.	LTS	None required.	NA
Impact GEO-5: The NHB Project would be located on expansive soils, but would not cause substantial direct or indirect risks to life or property.	LTS	None required.	NA
Impact GEO-6: The NHB Project could directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	S	**Mitigation Measure GEO-6:** Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general paleontological sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources. If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards (2010). If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource	LTS

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.5 Geology and Soils (Continued)			
		cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA. Any discovered paleontological resources that are determined by the qualified paleontologist to be "unique" in accordance with CEQA shall be subjected to appropriate salvage measures in conformance with SVP standards (2010).	
Impact C-GEO-1: Implementation of the NHB Project, in combination with past, present and reasonably foreseeable future projects, would not result in significant cumulative impacts related to geology and soils.	LTS	None required.	NA
EIR Section 4.6 Greenhouse Gas Emissions			
Impact GHG-1: Construction and operation of the NHB Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	None required.	NA
Impact GHG-2: Construction and operation of the NHB Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	None required.	NA
EIR Section 4.7 Hazards and Hazardous Materials			
Impact HAZ-1: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	None required.	NA
Impact HAZ-2: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	None required.	NA
Impact HAZ-3: Construction and operation of the NHB Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	None required.	NA

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.7 Hazards and Hazardous Materials (Continued)			
Impact HAZ-4: The UCSF BCH Oakland campus site is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Contamination at the NHB Project site could be encountered during construction and could have the potential to create a significant hazard to the public or the environment.	S	**Mitigation Measure HAZ-4a, Soil and Groundwater Management Plan (SGMP):** Prior to development on the campus site, a SGMP shall be prepared by a qualified environmental consulting firm to reflect current regulatory requirements and risk management protocols that are in accordance with ACDEH oversight. The SGMP shall include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils and/or groundwater, if encountered, as summarized below: • Site description, including the hazardous materials that may be encountered.	LTS
		• Roles and responsibilities of onsite workers, supervisors, and the regulatory agency (ACDEH). Onsite personnel shall attend mandatory pre-project training regarding the SGMP. • Training for construction workers focused on the recognition of and response to encountering hazardous materials. • Protocols for the materials (soil and/or dewatering effluent) testing, handling, removing, transporting, and disposing of all excavated materials and dewatering effluent in a safe, appropriate, and lawful manner. • Specified personal protective equipment and decontamination procedures, if needed. • A requirement specifying that any construction worker who identifies hazardous materials has the authority to stop work and notify the site supervisor. • Procedures to follow if evidence of potential soil and/or groundwater contamination is encountered (such as soil staining, unusual odors, debris or buried storage containers). These procedures shall be followed in accordance with hazardous waste operations regulations and specifically include, but not be limited to, immediately stopping work in the vicinity of the unknown hazardous materials release; notifying the ACDEH; and retaining a qualified environmental firm to perform sampling and remediation. Notification and sampling requirements for adequate characterization shall be in accordance with ACDEH requirements and any required removal or remediation work shall be completed to the overseeing agency's standards prior to occupancy of the new structure. **Mitigation Measure HAZ-4b: Vapor Mitigation:** To mitigate exceedances of indoor air standards, the Project shall incorporate at least one or more of the vapor mitigation methods listed below in areas determined to have soil gas concentrations above soil gas screening levels. The proposed work-specific vapor mitigation must be in accordance with vapor mitigation guidance provided by the Department of Toxic Substances Control (DTSC), which provides vapor guidance information at https://dtsc.ca.gov/vapor-intrusion/. • Excavate and remove contaminated materials (soil and, if needed, groundwater), to levels where subsequent testing verifies that soil gas levels are below screening levels. • Install a physical vapor barrier beneath the structure foundation that prevents soil gas from seeping into breathing spaces inside the structure, or	

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.7 Hazards and Hazardous Materials (Continued)			
		• Install a passive or powered vapor mitigation system that draws soil gas out of the under-foundation base rock and directs that soil gas to a treatment system to prevent people from being exposed outdoors to the extracted soil gas. Upon completion, UCSF BCH Oakland shall prepare a report documenting the testing results and installed vapor mitigation method and submit the report to the regulatory agency with jurisdiction (i.e., DTSC). A copy of the report shall be provided to the UCSF Mitigation Monitor to inform them of compliance with this requirement. The implemented mitigation measure shall result in indoor air concentrations that do not exceed the screening levels provided in the DTSC Human Health Risk Assessment (HHRA) Note Number 3.	
Impact C-HAZ-1: Construction and operation of the NHB Project, in conjunction with other cumulative development within the City of Oakland, would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or from risk of upset and accident conditions involving hazardous materials.	LTS	None required.	NA
EIR Section 4.8 Hydrology and Water Quality			
Impact HYD-1: Implementation of the NHB Project would have the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	S	Implement Mitigation Measure HAZ-4.	LTS
Impact HYD-2: Implementation of the NHB Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	None required.	NA
Impact HYD-3: Construction and operation of the NHB Project would not substantially alter the existing drainage patterns of the site or area, in a manner that has the potential to result in substantial erosion or siltation on- or off- site; would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; and would not create or contribute runoff	LTS	None required.	NA

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.8 Hydrology and Water Quality (Continued)			
water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flow.			
Impact HYD-4: Implementation of the Project would not create a risk of release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	LTS	None required.	NA
Impact HYD-5: Implementation of the NHB Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	S	Implement Mitigation Measure HAZ-4.	LTS
Impact C-HYD-1: Construction and operation of the NHB Project, in conjunction with other cumulative development, could cumulatively violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	S	Implement Mitigation Measure HAZ-4.	LTS
Impact C-HYD-2: Construction and operation of the NHB Project, in conjunction with other cumulative development, would not cumulatively alter the drainage pattern of the site or area, through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site; would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; would not 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 impede or redirect flow.	LTS	None required.	NA
EIR Section 4.9 Land Use and Planning			
Impact LU-1: Implementation of the proposed NHB Project would not cause a significant environmental impact due to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	None required.	NA

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.9 Land Use and Planning (Continued)			
Impact LU-2: Development under the proposed NHB would not conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created.	LTS	None required.	NA
Impact C-LU-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a conflict with land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect or a conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created.	LTS	None required.	NA
EIR Section 4.10 Noise and Vibration			
Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	S	**Mitigation Measure NOI-1a: Construction Noise Control Measures** UCSF contractors shall employ site-specific noise attenuation measures during construction of the Project to reduce the generation of construction noise. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance. Measures specified in the Noise Control Plan and implemented during project construction shall include, at a minimum, the following noise control strategies: • Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds). • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible; this could achieve a reduction of 5 dBA. Quieter procedures, such as the use of drills rather than impact tools, shall be used where feasible. • Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures. • Shield staging areas where adjacent sensitive receptors have direct line-of-sight and are within 200 feet of loading and delivery activities. Shielding may consist of plywood fencing with no gaps or acoustical paneling erected in K-rails.	SU

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

<table>
<tr><th>Environmental Impact</th><th>Level of Significance Before Mitigation</th><th>Mitigation Measures</th><th>Level of Significance After Mitigation</th></tr>
<tr><td colspan="4">EIR Section 4.10 Noise and Vibration (Continued)</td></tr>
<tr><td></td><td></td><td>
Mitigation Measure NOI-1b: Construction Hours

Construction hours shall be restricted to the hours listed in the table below. However, in rare circumstances, work may need to occur outside of these work hour limits. For example, there may be times when heavy machinery must be delivered outside the extended hours (during times of low traffic); or concrete pours must occur outside the extended hours. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.

<table>
<tr><th colspan="5">Construction Hours</th></tr>
<tr><th></th><th colspan="2">“Not Noisy” Work[1]</th><th colspan="2">Noisy Work</th></tr>
<tr><th></th><th>Regular hours</th><th>Extended hours[2]</th><th>Regular hours</th><th>Extended hours[1]</th></tr>
<tr><td>Monday - Friday</td><td>7:00 AM to 5:00 PM</td><td>5:00 PM to 8:00 PM</td><td>8:00 AM to 5:00 PM</td><td></td></tr>
<tr><td>Saturday</td><td></td><td>8:00 AM to 5:00 PM</td><td></td><td>9:00 AM to 4:00 PM</td></tr>
<tr><td>Sunday</td><td></td><td>8:00 AM to 5:00 PM</td><td></td><td></td></tr>
</table>
NOTES:
1 “Not Noisy” work = 80 decibels or less at 100 feet; “Noisy” work = more than 80 decibels at 100 feet.
2 Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.
</td><td></td></tr>
<tr><td></td><td></td><td>
Mitigation Measure NOI-1c: Construction Noise Complaints
UCSF shall establish a formal set of procedures for responding to and tracking complaints received pertaining to construction noise and shall implement the procedures during construction. Procedures shall be established prior to commencement of construction. At a minimum, the procedures shall include:
• Designation of an on-site construction complaint and enforcement manager for the project;
• A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager;
• Protocols for receiving, responding to, and tracking received complaints; and
• Maintenance of a complaint log that records received complaints and how complaints were addressed.
</td><td></td></tr>
</table>

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.10 Noise and Vibration (Continued)			
		Mitigation Measure NOI-1d: Pile-Installation Noise-Reducing Techniques • Noise-reducing pile-installation techniques shall be employed during project construction. These techniques shall include: • Installing cast-in-place concrete piles. Noise from auger drilling is 17 dBA less than an impact pile driver. • Vibrating piles into place where feasible. • Implement “quiet” pile-installation technology (such as pre-drilling of piles).	
		Implement Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures.	
Impact NOI-2: Implementation of the NHB Project would not generate a substantial 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.	LTS	None required.	NA
Impact NOI-3: Construction activities for the NHB Project and related improvements could result in generation of excessive groundborne vibration or groundborne noise levels.	S	**Mitigation Measure NOI-3: Assessment and Relocation/Retrofitting of Vibration-Sensitive Equipment** **UCSF** shall evaluate the presence of vibration-sensitive equipment within 150 feet of construction and demolition areas. Any sensitive equipment shall be evaluated for the existing extent of vibration isolation and relocated or vibration isolation shall be further embellished, as warranted. Based on available guidance (FTA, 2018), a performance standard of 65 VdB shall be implemented in lieu of any other available equipment-specific criterion.	LTS
Impact NOI-4: Operation of the NHB Project would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, where ambient noise levels already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use.	LTS	None required.	NA

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Table 2-2 (continued)
Summary of NHB Project Impacts and Mitigation Measures

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.10 Noise and Vibration (Continued)			
Impact C-NOI-1: Implementation of the NHB Project, combined with other concurrent construction projects in the project area, could generate a substantial temporary increase in ambient noise levels from construction activity 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.	S	Implement Mitigation Measures NOI-1a, NOI-1b, and TRANS-5	LTS
Impact C-NOI-2: Implementation of the NHB Project, combined with cumulative development in the project area, would not generate substantial permanent increases 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.	LTS	None required.	NA
Impact C-NOI-3: Implementation of the NHB Project, combined with cumulative construction in the project area, could result in generation of excessive groundborne vibration or groundborne noise levels.	S	Implement Mitigation Measure NOI-3.	LTS
Impact C-NOI-4: Implementation of the NHB Project, combined with cumulative development in the project area, would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use.	LTS	None required.	NA
EIR Section 4.11 Transportation			
Impact TRANS-1: Implementation of the NHB Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	LTS	None required.	NA

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.11 Transportation (Continued)			
Impact TRANS-2: Implementation of the NHB Project would not conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b).	LTS	None required.	NA
Impact TRANS-3: Implementation of the NHB Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	None required.	NA
Impact TRANS-4: Implementation of the NHB Project would not result in inadequate emergency access.	LTS	None required.	NA
Impact TRANS-5: Construction of the NHB Project could temporarily impact travel conditions along sidewalks and roadways serving the campus site.	S	**Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures** In order to reduce potential conflicts between construction activities and pedestrians, bikes, buses, and autos during construction activities at the NHB Project site, UCSF shall require construction contractor(s) to coordinate with the relevant City of Oakland agencies to prepare Construction Transportation Management Plan to address the following during the major phases of project construction (e.g., demolition, construction of new building, or renovation of existing buildings): • Construction Traffic Control Plan to identify construction truck routes, coordinate feasible measures to reduce traffic congestion, reduce potential traffic, bicycle, and transit disruption and pedestrian circulation effects, potential detours for motor vehicles, bicycles, and pedestrians if necessary, and location of off-site construction staging areas for materials and equipment if necessary. • Construction Worker Parking and Travel Management Plan to minimize parking demand and motor vehicle trips generated by construction workers and ensure that construction workers do not use the on-street parking in the nearby residential neighborhood. If parking demand for construction workers cannot be accommodated on-site, the Plan shall identify off-site parking facilities and if necessary, provide a shuttle service between the parking facility and the construction site. • Notification procedures for nearby residences and businesses and public safety personnel regarding construction activities, peak construction vehicle activities (e.g., concrete pours, excavation), and travel lane closures, via a newsletter, website, and/or regular construction update meetings with neighbors. • Coordination with the City of Oakland Department of Transportation to ensure that the final design and construction of the NHB Project and the City's MLK Jr. Way Complete Streets Paving Project, which are expected to overlap, do not conflict with each other, and minimize the potential combined effects of the two construction projects on circulation for various travel modes.	LTS

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.11 Transportation (Continued)			
		• If necessary, make repair to damages to the public right-of way, including streets and sidewalks, caused by project construction within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to the completion of construction.	
Impact C-TRANS-1: Implementation of the NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to significant transportation impacts.	LTS	None required.	NA
EIR Section 4.12 Utilities and Service Systems			
Impact UTIL-1: Implementation of the proposed NHB Project would require or result in the construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or telecommunications facilities, the construction or relocation of which would not cause significant environmental effects.	LTS	None required.	NA
Impact UTIL-2: Sufficient water supply would be available from the EBMUD to serve the NHB Project and reasonably foreseeable future development under normal, dry and multi-dry years. EBMUD would address the anticipated shortfalls through rationing and conservation programs and/or develop new or expanded water supply facilities to address shortfalls during multiple dry years.	LTS	None required.	NA
Impact UTIL-3: The wastewater treatment provider would have adequate wastewater treatment capacity to serve the NHB Project.	LTS	None required.	NA
Impact UTIL-4: The NHB Project would not 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.	LTS	None required.	NA

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TABLE 2-2 (CONTINUED)
SUMMARY OF NHB PROJECT IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
EIR Section 4.12 Utilities and Service Systems (Continued)			
Impact UTIL-5: The NHB Project would comply with applicable management and reduction statutes and regulations related to solid waste.	LTS	None required.	NA
Impact C-UTIL-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the UCSF BCH Oakland campus site, would not result in significant cumulative impacts related to utilities and service systems.	LTS	None required.	NA

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CHAPTER 3
Project Description

The proposed Project would construct a new hospital building and associated improvements at the UCSF's Benioff Children's Hospital (BCH) Oakland campus site, collectively known as the New Hospital Building (NHB) Project, or Project. As described further below, the Project proposes to address seismic safety requirements; other regulatory requirements and industry standards for contemporary hospitals; provide additional inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site. Construction of the Project would begin in Summer 2024 and be completed by early 2031, with the exception of renovations to existing buildings which would extend into early 2033.

For purposes of providing distinction between the various components of this Project, references made in this EIR to "new hospital building" relate only to the new hospital building portion of the overall project, whereas references made to "NHB Project" or "Project" relate to the overall project, including the new hospital building and its associated improvements.

3.1 Introduction

UCSF Benioff Children's Hospital (UCSF BCH Oakland) is a pediatric acute care hospital located in Oakland, California. It is a nationally recognized teaching hospital providing a broad range of inpatient and outpatient services, including comprehensive pediatric specialties and subspecialties to infants, children, teens, and young adults. The hospital features a Level 1 Pediatric Trauma Center, one of only eight in the state. The hospital currently encompasses 177 licensed inpatient beds within its neonatal and pediatric intensive care units (NICU and PICU) and acute care medical/surgery departments. UCSF BCH Oakland medical staff are comprised of faculty physicians and multi-disciplinary teams of psychologists, nurses, pharmacists, dentists, social workers, and physical therapists that provide expert, comprehensive and compassionate patient care, pioneering research, training, and advance pediatric physical and mental health.

UCSF BCH Oakland operates a Federally Qualified Health Center (FQHC), a community-based health care provider to provide primary care services to underserved patients. FQHCs provide primary care services regardless of a patient's ability to pay. As a FQHC, UCSF BCH Oakland provides primary health care and resources to address the social and environmental needs of 9,000 underserved children every year. 70 percent of pediatric patients are covered by Medi-Cal. In addition, UCSF BCH Oakland maintains ongoing agreements with the County of Alameda and other partners in the City of Oakland to implement a variety of mental health programs, including emergency psychiatric services and trauma care; HIV prevention, mental health, and substance abuse services; infant, child and adolescent psychiatry; and substance abuse and addiction therapy, for a diverse patient population. UCSF BCH Oakland is also a nationally recognized teaching hospital providing accredited residency education in general pediatrics and fellowship education to pediatricians seeking subspecialty training.

UCSF BCH Oakland is affiliated with the UCSF School of Medicine and the UCSF Office of Research.

3.2 Background

In 2014, UCSF entered into an affiliation agreement with Children's Hospital & Research Center Oakland (CHRCO), to align the two institutions based on the shared mission of serving the health care needs of all children, regardless of race, religion, or financial status. At that time, a Campus Master Plan (CMP) for the 11-acre campus, which provided for the development of new and replacement facilities within the existing campus, was already under review by the City of Oakland, which maintained land use jurisdiction and California Environmental Quality Act (CEQA) lead agency status for the site as CHRCO was then a solely private institution.

In 2015, the City of Oakland certified the *Children's Hospital and Research Center Oakland Campus Master Plan Project Final EIR* (CHRCO CMP Project FEIR) and approved the CMP. The entitlements for the CMP included, among other things, a Planned Unit Development (PUD) permit, which consisted of two phases:

- Phase 1: The Preliminary Development Plan (PDP) and Final Development Plan (FDP) for Phase 1 were approved in 2015. Phase 1 included construction of an outpatient building, interior renovations to campus buildings, circulation improvements, demolition of a residential structure, and modifications to two residential structures. Construction of the improvements included in Phase 1 is still in progress.
- Phase 2: Phase 2 included the construction of a Clinical Support Building (now named the Administrative Support Building), a new Acute Care Patient Pavilion, the Link Building with a helipad on the roof, a Family Residence Building, expansion of the central utility plant, new parking structure, and demolition of several buildings. The PDP for Phase 2 was approved in 2015.

Following the 2014 agreement between CHRCO and UCSF, the hospital was renamed UCSF Benioff Children's Hospital, Oakland (UCSF BCH Oakland). The hospital is still under the management control of UCSF BCH Oakland, a non-profit public benefit corporation, and the UC Regents are the sole member of the nonprofit.

As the UCSF BCH Oakland campus site is now controlled by the University, UCSF has revised its approach to the modernization of the campus site. UCSF has reduced the scope of Phase 2 development compared to the Phase 2 analyzed in the CHRCO CMP Project FEIR, to include the new construction of the Administrative Support Building (ASB), the ASB-related relocation of two structures on 52nd Street and demolition of two structures on Dover Street and 53rd Street. The ASB project has been approved by the University for implementation.

The proposed NHB Project represents the next stage of campus modernization. Although the proposed Project is conceptually the same as the Phase 2 development analyzed in the CHRCO CMP Project FEIR for the portion of the campus site south of 52nd Street, there are some differences in the proposed improvements. As such, the University, acting as the lead agency under CEQA, determined that it will prepare a project EIR that analyzes and discloses the environmental impacts of the proposed NHB Project. This EIR has been prepared in accordance with CEQA to analyze and disclose potential significant environmental impacts that could result from construction and operation of the Project.

3.3 UCSF BCH Oakland Campus Site Location and Characteristics

3.3.1 UCSF BCH Oakland Campus Site

Figure 3-1 presents an aerial view of the UCSF BCH Oakland campus site and its vicinity. UCSF BCH Oakland is located on an approximately 11-acre campus at 747 52nd Street in the North Oakland neighborhood of Oakland. The main campus is generally bounded by 53rd Street on the north, State Route (SR) 24 on an embankment to the east, and Martin Luther King (MLK) Jr. Way to the south and west.

UCSF BCH Oakland buildings and structures south of 52nd Street are within the Project site, and described under Section 3.2.1, *Project Site*, below. The UCSF BCH Oakland campus area located north of 52nd Street includes the 5-story Outpatient Center 1 and the 6-story Outpatient Center 2 buildings (OPC 1 and OPC 2); a 5-story parking structure; Behavioral Health Building, Sports Medicine Clinic trailer and sports court; and several other small buildings used as office space or for other incidental hospital uses. UCSF BCH Oakland also maintains the Family House (16 residential units) at 5222 Dover Street, which provides short-term stay for BCH Oakland patient families. As indicated in Figure 3-1, there are two residential parcels within the campus site not owned by UCSF. Also illustrated in Figure 3-1, there is a UCSF BCH annex employee surface parking lot located to the west across MLK Jr. Way between 47th and 51st Streets.

The roughly triangular campus site is generally surrounded by residential areas to the north and west and SR 24 to the east. Residential uses are located north of the campus site and consist of predominantly 1- and 2-story single-family homes with neighborhood-serving commercial uses along MLK Jr. Way to the northwest. Residential and commercial uses are located beyond SR 24, east of the campus site and consist of single family and multi-family residential buildings with neighborhood-serving commercial uses along Shattuck Avenue. Residential uses are also located south of the campus site and west of MLK Jr. Way.

Regional vehicular access to the campus site is via Interstate 580 (I 580), SR 13 and SR 24. The nearest access point to SR 24 is located immediately south of the campus site, at the intersection of the SR 24 ramp and MLK Jr. Way, in the vicinity of 47th Street. Local roadways providing access to the campus site include MLK Jr. Way, 52nd Street, and Dover Street. The Alameda-Contra Costa Transit District (AC Transit) provides bus services to the campus via MLK Jr. Way.

Bay Area Rapid Transit (BART) extends in the center of MLK Jr. Way on elevated train tracks to the west of the campus site, and in the center of SR 24 to the east of the campus site. The nearest BART station is the MacArthur Station, located approximately 0.6 miles south of the campus site. UCSF BCH Oakland operates a free weekday shuttle service between the MacArthur BART Station and the campus site.

3.3.2 NHB Project Site

The Project site consists of an approximate 5.74-acre portion of the UCSF BCH Oakland campus site, and is bounded by 52nd Street to the north, MLK Jr. Way to the west and SR 24 to the east (see **Figure 3-1** and **Figure 3-2**).

The majority of the Project site is relatively flat with a ground surface elevation varying between approximately 90 and 100 feet above NAVD.[1] The eastern portion of the Project site is comprised of the SR 24 embankment that rises to an elevation of about 130 feet above NAVD. The slope is stabilized with a retaining wall located along the base of the slope in the central portion of the embankment. The Project site is largely developed with buildings, structures, and paving, with the exception of small areas of landscaping in the vicinity of the buildings.

No open creek or stream channels cross the Project site. Temescal Creek, managed by the Alameda County Flood Control and Water Conservation District (ACFCWD), is contained in an underground 10-foot by 12-foot box culvert that runs east to west through the southern end of the Project site. A number of City storm drains extend into the Project site and connect and discharge to the ACFCWD culvert.

Buildings and Structures

Existing development within the Project site consists of a variety of hospital buildings and supporting structures of varying ages. As illustrated in Figure 3-2 and summarized in **Table 3-1**, these include four inpatient facilities: the Patient Tower, Ford Diagnostic and Treatment (D&T) Center and Cardiac Catheterization Lab Building, and the B/C Wing and A/B Wing. Other buildings, additions and structures within the Project site include the Cafeteria, Western Addition, Central Utility Plant and Chiller Building, loading dock, Bruce Lyon Memorial Research Laboratory and Bruce Lyon Addition (Hematology/Oncology administrative offices), a 36-foot-tall helistop structure, and several temporary trailers that house office and administrative uses.

A pedestrian bridge provides elevated access from the Patient Tower to the north across 52nd Street to OPC 1. In addition, overhead Pacific Gas and Electric Company (PG&E) power lines extend along 52nd Street adjacent to, and on Dover Street within, the Project site. The west, east and south portions of the Project site are fenced off.

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[1] The North American Vertical Datum of 1988 (NAVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary from place to place, season, and time of day.

SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project EIR

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Figure 3-1
UCSF BCH Oakland Campus Site

SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-2
New Hospital Building Project Site

TABLE 3-1
EXISTING BUILDINGS AND STRUCTURES ON NHB PROJECT SITE

Reference No.[a]	Building/Structure	Construction Date	Number of Stories	Area (sq. ft.)
1	Patient Tower	1982	5 stories	105,371
2	Ford Diagnostic and Treatment (D&T) Center	1961	3 stories	44,208
3	Cardiac Catheterization Lab	1994	2 stories	1,750
4	Cafeteria	1988	2 stories	7,779
5	Western Addition	2009	3 stories	7,715
6	Central Utility Plant	ca. 1980; improved in 1987	2 stories	12,217
7	Chiller Building	2022	1 story	1,050
8	Hospital Loading Dock	1982	1 story	637
9	B/C Wing	1946	3 stories	33,510
10	A/B Wing	1928	4 stories	45,177
11	Bruce Lyon Memorial Research Laboratory	1958	2 stories	12,570
12	Bruce Lyon Addition (Hematology/Oncology Administrative offices)	1992	3 stories	4,500
13	Temporary Trailer (MRI)	--	1 story	1,065
14	Temporary Trailer (Facilities Design and Construction)	--	1 story	480
15	Temporary Trailer (Ed Administration)	--	1 story	2,108
16	Temporary Trailer (Social Services)	--	1 story	1,772
17	Temporary Trailer (Center for Vulnerable Children [CVC])	--	1 story	4,555
18	Temporary Trailer (Education/HIS)	--	1 story	1,779
19	Temporary Trailer (Offices)	--	1 story	1,186
20	Helistop Structure	2000	--	4,323

NOTE:
a. Refer to Figure 3-2 for location of existing buildings/structures.

SOURCE: UCSF, 2023

Helistop Operations

Based on helicopter logs for the last two full calendar years, 341 helicopters utilized the existing UCSF BCH Oakland campus site helistop in 2021, and 393 helicopters utilized the helistop in 2022. When counting each landing/takeoff as an aircraft operation, there were a total of 682 helicopter operations in 2021 and 786 helicopter operations at the helistop in 2022. The temporal distribution of those landings vary as they are necessitated by medical emergencies. However, an average of 51 percent occur during the day (7:00 AM to 7:00 PM); 19 percent occur during the evening (7:00 PM and 10:00 PM); and 30 percent occur overnight (10:00 PM to 7:00 AM). UCSF BCH Oakland does not own any helicopters. Rather, patients are brought from all over the Bay Area by emergency medical service (EMS) operators, which include Redwood Empire Air Care Helicopter (REACH) Air Medical Services, California Shock Trauma Air Rescue (CALSTAR), and Stanford Lifeflight.

Due to prevailing wind conditions in the Oakland area, helicopters usually arrive from the east and depart to the west. When feasible, flight crews fly over SR 24 and hospital property when landing at or departing from the helistop in an effort to minimize noise impacts on the surrounding community.

Vehicular Access and Parking

As shown in Figure 3-2, local roadways that provide access to the Project site include MLK Jr. Way and 52nd Street. The existing hospital's public entry is located near the intersection of 52nd Street and MLK Jr. Way with a roundabout drop-off area. The Emergency Department (ED) access, accessible parking, ambulance staging and other emergency vehicle parking is located adjacent to the front entrance. Deliveries are received in the loading dock located off MLK Jr. Way. Gated vehicular access to the Project site is provided via the Dover Street extension for service and staff. Within the Project site, there are approximately 48 striped surface parking spaces (known as the South Lot) used by BCH Oakland employees.

Open Space

Landscaped areas on the Project site support ornamental trees, shrubs and maintained native adaptive and native vegetation. Open space on the Project site is primarily limited to a courtyard between the A/B and B/C Wings (i.e., between Buildings 8 and 13 in Figure 3-2). Within the courtyard there are mature magnolia trees, including a magnolia tree that was planted in about 1860. Adjacent to the courtyard is an approximately 800-square-foot play area and a "Butterfly Garden." The SR 24 embankment is also vegetated, containing a number of trees. Street trees are also located along 52nd Street and MLK Jr Way adjacent to the Project site. Based on a prior tree survey conducted at the Project site, there are 95 trees located on or adjacent to the Project site (Woodreeve Consulting, 2023).

Existing Patients, Visitors and Staff

There are currently a daily average of 785 patients at the UCSF BCH Oakland campus site. These patients include hospital inpatients, ED patients, patients in the outpatient facilities, and accompanying parents or other primary caretakers where necessary. In addition, there are an estimated daily average of 1,332 visitors to UCSF BCH Oakland, which excludes the primary caretakers. There are currently a daily average of 1,210 staff (management, clinical staff, clinical support staff, and administration), vendors and volunteers, and 300 physicians/faculty. Lastly there are an estimated daily average of 150 students and fellows at UCSF BCH Oakland. The total average daily campus population is estimated at 3,777 (Blue Cottage, 2023).

3.4 Project Need

Aged facilities and functional obsolescence present challenges to the long-term viability of the UCSF BCH Oakland hospital, including seismically non-compliant buildings, capacity constraints, inefficient layouts, and undersized facilities for UCSF BCH Oakland's program of care.

The Alquist Seismic Safety Act and Senate Bill (SB) 1953 require hospitals to comply with seismic safety building standards. Seven of the UCSF BCH Oakland campus site buildings or building additions located south of 52nd Street were constructed and renovated in stages from 1928 through 2003; the two oldest buildings (A/B and B/C Wings) carry a Structural Performance Category Rating of 1 (SPC-1), meaning that they currently pose a significant risk of collapse following a strong earthquake and are no longer compliant for acute care. In order to comply with applicable seismic safety building standards, a substantial portion of the existing inpatient facilities at the UCSF BCH Oakland campus must be either structurally retrofitted or decommissioned by January 1, 2030. Planning is also underway to improve the seismic resiliency of other buildings at UCSF BCH Oakland, including overhead bracing upgrades within the critical care areas of the Patient Tower.

UCSF has concluded that the A/B and B/C Wings are obsolete and cannot reasonably be retrofitted and renovated to meet modern requirements for a clinical care facility. The structural layout of the buildings, floor plate sizes, ceiling heights, and building infrastructure systems are such that it would be infeasible to retain, retrofit, and reuse the buildings for acute care. Current seismic requirements, technologies and patient care standards require a modern acute care facility that simply cannot be accommodated in the A/B and B/C Wings. UCSF has determined that the A/B and B/C Wings cannot be retrofitted to accommodate patient care in a manner that would meet the California Department of Health Care Access and Information (HCAI) seismic classifications. UCSF has also determined that it would also not be cost effective to complete a seismic retrofit of A/B and B/C Wings in compliance with the UC Seismic Policy. Further, maintaining the A/B and B/C Wings in place constrains the site, interferes with hospital operations in terms of workflow and wayfinding, results in inefficiency that could increase operational costs, and compromises the ability of UCSF BCH Oakland to build a contemporary high-performing hospital for the community. Accordingly, the A/B and B/C Wings are proposed to be demolished (UCSF, 2023).

Care capacity at UCSF BCH Oakland has been outpaced by demand and limited by aging infrastructure, which has constrained the provision of care and meeting patient and family expectations for care delivery. Newer technological systems and equipment require reconfiguration of space and improvements to the building infrastructure. The current lack of space prevents UCSF BCH Oakland from providing new patient care services, such as inpatient behavioral health. Demand for inpatient beds for behavioral health has increased, as rates of mental health challenges among children and adolescents have soared across the country.[2] These challenges also affect the ability of UCSF BCH Oakland to grow and attract faculty, residents, students and staff, and limits UCSF BCH Oakland's ability to meet its mission of caring, healing, teaching and discovering.

2 American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, and Children's Hospital Association Declaration of a National Emergency in Child and Adolescent Mental Health. https://www.aap.org/en/advocacy/child-and-adolescent-healthy-mental-development/aap-aacap-cha-declaration-of-a-national-emergency-in-child-and-adolescent-mental-health/

As a result, UCSF BCH Oakland has identified areas of needs to be addressed as part of its campus modernization efforts, including the need for private patient rooms, rather than open wards and shared rooms; space for families; an enlarged ED, including properly sized rooms for current patient volumes with adjacent imaging services; larger Operating Rooms to accommodate advanced medical technologies; and dedicated mental health inpatient beds to address the pressing, unmet need for adolescent mental health care and services.

3.5 Project Objectives

The key objectives for the proposed NHB Project are as follows:

3.5.1 Fundamental Objectives

- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as a premier children's hospital, educational, research, and clinical institution.
- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as nationally recognized teaching hospital, providing accredited residency education in general pediatrics and fellowship education to pediatricians seeking subspecialty training.
- Modernize the UCSF BCH Oakland campus to address challenges that affect the long-term viability of the institution, such as aged, functionally obsolete, undersized and inefficient facilities.
- Meet seismic requirements of California Senate Bill 1953 by redeveloping a new, seismically-sound, state-of-the-art and sustainable inpatient facility.
- Maintain UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center with continued emergency service access via helicopter.
- Address the existing shortage of capacity and access to pediatric care by increasing the number of inpatient beds at UCSF BCH Oakland.
- Address the current unmet need for adolescent mental health care and services by providing behavioral health inpatient beds that meet code requirements, including required outdoor space, at UCSF BCH Oakland and providing such services.
- Address the current unmet need for ED patient services by increasing the size of the ED.
- Site and develop a new inpatient facility in a way that optimizes operational activities and maintains critical adjacencies with other clinical facilities on the site, such as the existing Patient Tower, the Ford D&T Center and Cardiac Catheterization Lab, and critical support functions.
- Develop a new inpatient facility that is optimized in its spatial layout for functionality in terms of workflow and wayfinding, and efficiency so as to not increase operational costs.

3.5.2 Development Objectives

- Develop a new inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards of contemporary hospitals, such as construction codes, sizes of operating rooms, ratio of operating rooms to pre-and post-recovery areas, space for privacy and infection control issues.

- Develop a new inpatient facility that has sufficient space to accommodate patient satisfaction requirements of contemporary hospitals such as private patient rooms, patient rooms of sufficient size to accommodate family overnight stays, and outdoor space for children.
- Develop a new inpatient facility that has sufficient space to accommodate modern technology, including telemedicine, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment, all requiring substantial infrastructure and space.
- Optimize the existing Patient Tower by making non-structural performance improvements and renovating it to continue to provide inpatient beds and necessary clinical and support functions.
- Develop a parking structure to meet the needs of essential healthcare providers and other staff, at a location that provides quick and safe access to patient facilities.
- Develop parking facilities to address patient parking needs, in particular ED patient parking.
- Maintain existing hospital operations throughout construction.

3.6 NHB Project

The Project consists of a new hospital building and associated improvements at the UCSF BCH Oakland campus site. The Project would address seismic safety requirements, other regulatory requirements, and industry standards for contemporary hospitals; increase inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site.

Table 3-2 provides a detailed summary of proposed Project construction and demolition. The Project would include the construction of an approximate 332,523 gross square foot (gsf) new hospital building with a rooftop helistop; a 96,912 gsf, 200 to 270-stall parking structure; a 6,100 gsf site support building; renovation and/or structural retrofitting of existing buildings within the Project site; and a variety of transportation, infrastructure, and landscape improvements. The Project would also involve demolition of 109,632 gsf of existing buildings, relocation of the 1,065 gsf MRI trailer on the Project site or on another portion of the campus site, and renovation of approximately 30,000 gsf of existing building space.

Figure 3-3 presents a conceptual site plan for the proposed Project. **Figure 3-4** provides a conceptual massing diagram of the proposed buildings under the Project. **Figure 3-5** illustrates existing buildings and structures that would be demolished or relocated off-site under the Project. The following provides a description of the major Project components.

3.6.1 Proposed Use Program and Space Summary

The proposed new hospital building is planned to be constructed as an 8-story above grade with a rooftop helistop plus a full basement building. Levels 1 through 6 of the new hospital building would be occupied upon completion in 2031, and Levels 7 and 8 would remain as shell space initially but would be occupied later on by the planned programs. The full occupancy of the new hospital building is referred to below as NHB Project buildout.

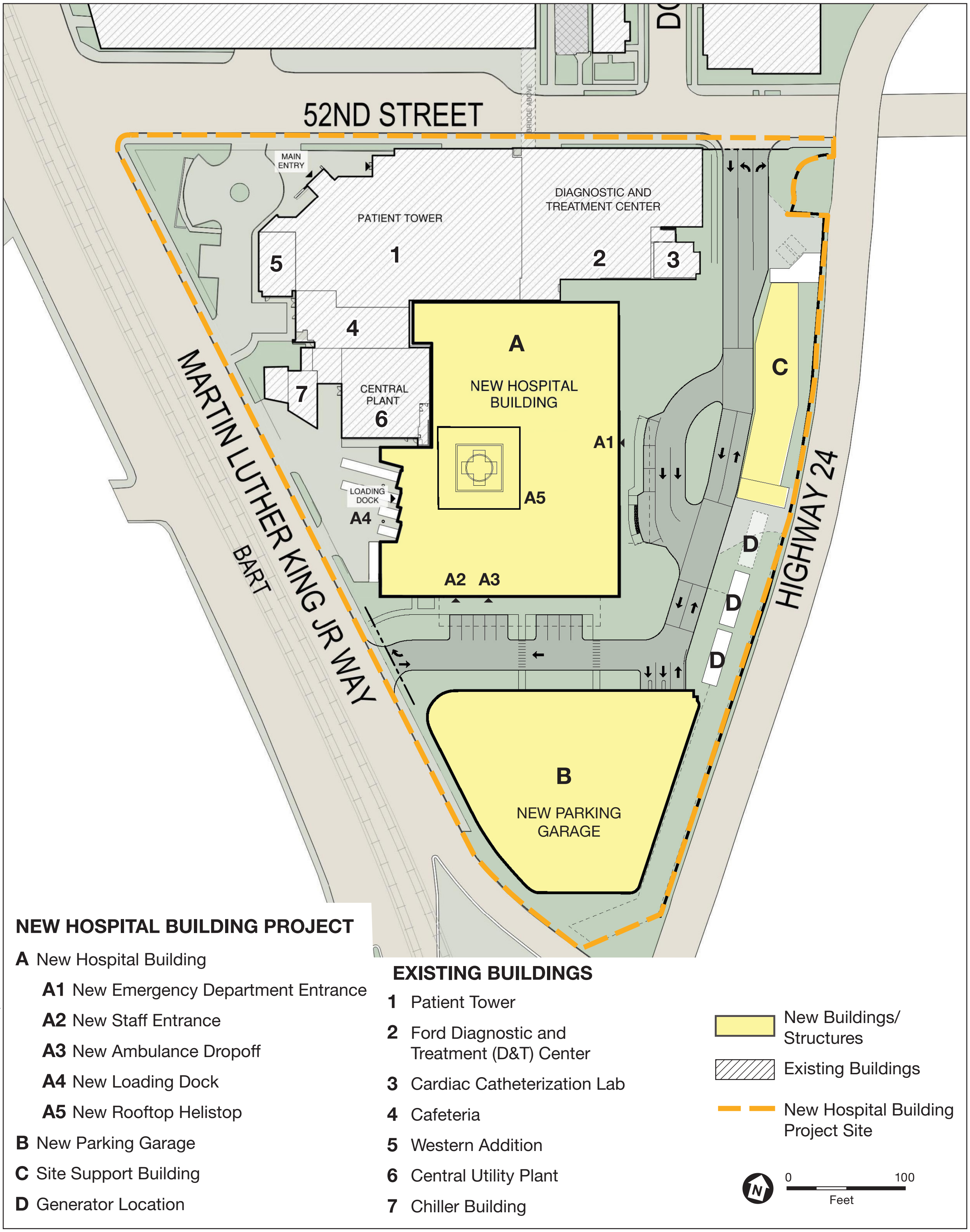
TABLE 3-2
SUMMARY OF BUILDING CONSTRUCTION AND DEMOLITION UNDER NHB PROJECT

Reference No.[a]	Building/Structure	Area (sq. ft.)
New Building Construction		
A	New Hospital Building with Rooftop Helistop	332,523
B	Parking Structure	96,912
C	Site Support Building	6,100
		435,585
Existing Buildings to Remain[b]		
1	Patient Tower	105,371
2	Ford Diagnostic and Treatment (D&T) Center	44,208
3	Cardiac Catheterization Lab	1,750
4	Cafeteria	7,779
5	Western Addition	7,715
6	Central Utility Plant	12,217
7	Chiller Building	1,050
		180,090
Demolition or Removal of Existing Buildings/Structures[c]		
8	Hospital Loading Dock	637
9	B/C Wing	33,510
10	A/B Wing	45,177
11	Bruce Lyon Memorial Research Laboratory	12,570
12	Bruce Lyon Addition (Hematology/Oncology Administrative offices)	4,500
13	Temporary Trailer (MRI)	1,065[d]
14	Temporary Trailer (Facilities Design and Construction)	480
15	Temporary Trailer (Ed Administration & Social Services)	2,108
16	Temporary Trailer (Offices)	1,772
17	Temporary Trailer (Center for Vulnerable Children [CVC])	4,555
20	Helistop Structure	4,323
		110,697

NOTE:

a. Please refer to Figure 3-2 and Figure 3-3 for location of buildings.
b. Approximately 30,000 square feet within existing buildings would be renovated.
c. Existing Temporary Trailer No. 18 (Education/HIS) and Temporary Trailer No. 19 (Offices) are planned to be demolished separate from the NHB Project.
d. MRI Trailer to be removed and relocated on the Project site or elsewhere on the campus site.

SOURCE: UCSF, 2023



2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023; ESA, 2023

UCSF BCH Oakland NHB Project EIR

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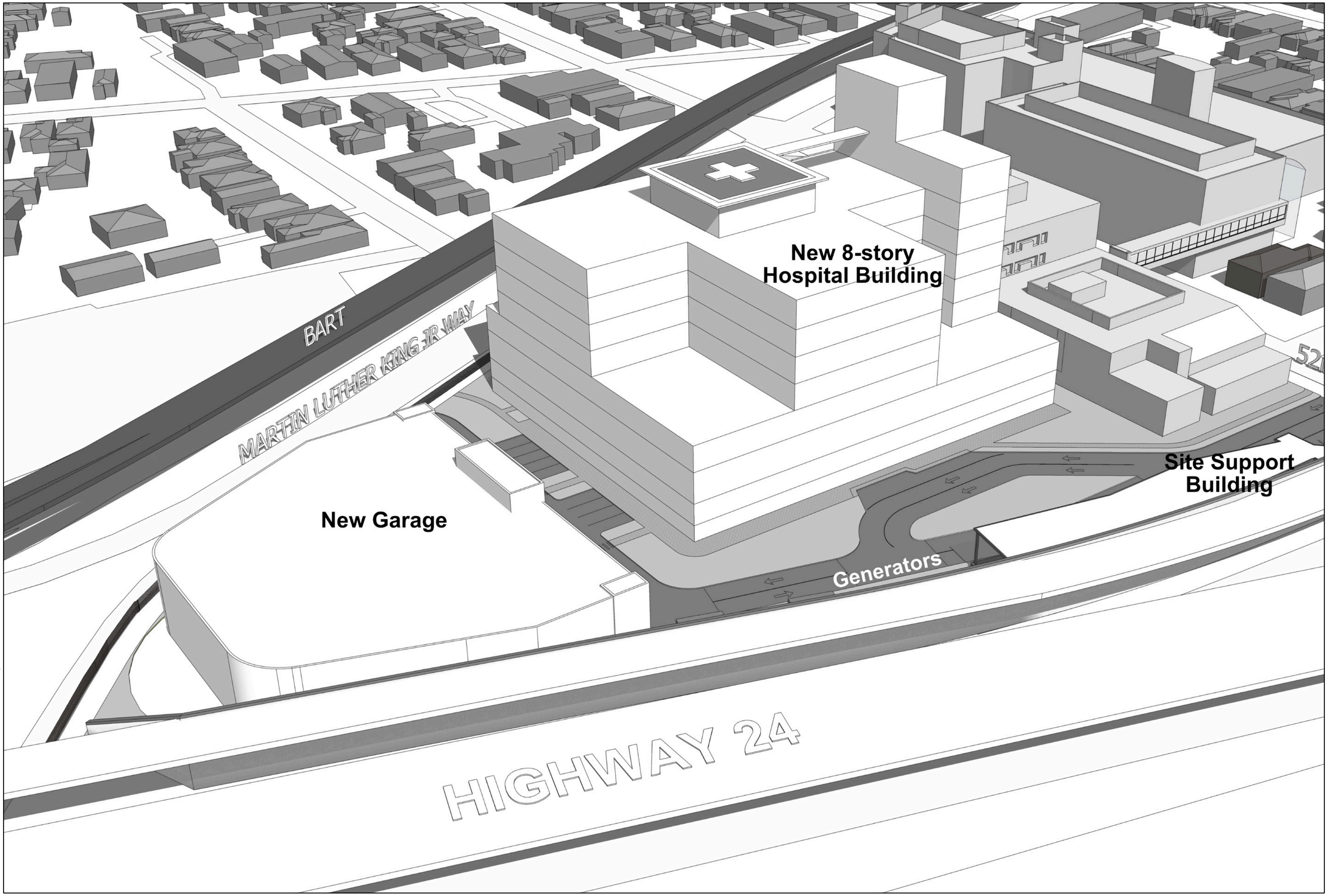
Figure 3-3
New Hospital Building Project Site Plan



SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

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Figure 3-4
Conceptual Massing of Proposed Buildings under NHB Project

SOURCE: ESA, 2023; Google Earth, 2023

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UCSF BCH Oakland NHB Project EIR

Figure 3-5
Proposed Demolition Under New Hospital Building Project

Table 3-3 presents an overview of the UCSF BCH Oakland hospital program, including the existing (2023) hospital program, the hospital program envisioned under the proposed Project buildout, and net change.

TABLE 3-3
UCSF BCH OAKLAND CAMPUS SITE LICENSED BED PROGRAM

Building	Existing (2023)	NHB Project (2031)	NHB Project Buildout
Patient Tower and D&T Building	177	105	82
Proposed New Hospital Building	--	80	128
Total	**177**	**185**	**210**

SOURCE: UCSF, 2023

As shown in Table 3-3 above, there are currently 177 licensed inpatient beds in the Patient Tower and D&T Building. In the first year of operation of the Project (2031), there would be 80 licensed beds in the new hospital building, and 105 licensed beds in the Patient Tower and D&T Building, for a total of 185 licensed beds at the UCSF BCH Oakland campus site. Under full buildout of the Project, the new hospital building bed count would increase to 128 licensed beds, for a total of 210 inpatient beds at the BCH Oakland campus site. As such, the Project would result in a net increase in 33 licensed beds over existing conditions at the campus site. As a conservative approach for addressing the Project's impacts in this EIR, the higher (buildout) estimate of 210 total licensed beds at the campus site is used for analysis in year 2031 as well.

Table 3-4 presents a building space summary estimate for the new hospital building. The proposed new hospital building would provide a comprehensive range of health care services: *Inpatient Nursing and Support Services* would include NICU and PICU, acute care services for medical/surgery and behavioral health, Child Life services, and on-call space. *Diagnostic and Treatment* would include the ED, including ED imaging, surgery, preparation and recovery, and cardiac catheterization and interventional radiology (Cath/IR) services. *Clinical Support Services* would include central sterile processing department (CSPD), inpatient pharmacy (IP);,and resident and fellow support space. *General Support Services* would include materials management, medical equipment processing and staging, facilities management and engineering, environmental services, biomedical engineering, morgue and autopsy, security department, support administration, emergency food and water storage, loading dock receiving, transport lift, waste holding, bed storage and repair, and mailroom. *Building Infrastructure* would include mechanical, electrical, plumbing and communications infrastructure, radio and fire command rooms, fire protection and domestic water storage, and Nonstructural Performance Category-5 (NPC-5) tanks. Lastly, *Building Circulation* would include general circulation, including lobby and corridors, vertical circulation, and public restrooms.

TABLE 3-4
NHB LAND USE PROGRAM / SPACE SUMMARY

Function	Size (GSF)
Inpatient Nursing and Support Services	
Acute Care, Medical/Surgery (Level 6)	21,907
Acute Care, Behavioral Health (Level 5)	21,906
Neonatal Intensive Care Unit (Level 5)	28,278
Shell – Support Space (Level 8)	22,323
Shell – Support Space (Level 7)	21,670
Child Life (Levels 5 and 6)	3,560
On-Call (Levels 4 and 5)	2,837
Unassigned	4,581
	127,062
Diagnostic and Treatment	
Surgery and Cardiac Catheterization-Interventional Radiology	20,440
Preparation/Recovery	12,806
Emergency Department (including Emergency Department Imaging)	32,101
	65,347
Clinical Support Services	
Shell – Support Space (Level 3)	6,166
Shell – Support Space (Basement Level)	6,648
Resident and Fellow Support	2,881
	15,695
General Support Services	
Bed Storage and Repair	1,003
Biomedical Engineering	1,809
Facilities Management/Engineering	2,537
Security Department (Basement)	937
Medical Equipment Processing and Staging	2,599|
Materials Management	5,894
Shell – Support Space (Basement Level)	3,207
Transport/Lift	915
Emergency Food and Water Storage	389
Loading Dock Receiving Waste Holding, Support Administration Mailroom	3,537
	489
	23,316
Building Infrastructure	
Mechanical, Electrical, Plumbing (Basement, Level 2, Penthouse)	16,691
Communications Infrastructure	3,605
Radio Room, Fire Command Room	930
Fire Protection and Domestic Water Storage (Basement)	1,755
Electrical Rooms (all floors)	2,344
Nonstructural Performance Category-5 (NPC-5) Tanks	3,434
Other	7,780
	36,539
Building Circulation + Exterior Skin	
General Circulation, Vertical Transport, Public Restrooms	54,000
Exterior Skin	10,564
	64,564
Total	**332,523 GSF**

NOTE: Space summary square footages are estimated.
SOURCE: UCSF, 2023

The new hospital building would not contain a cafeteria or kitchen facilities. Rather, food services operations to serve the new hospital building would utilize the existing cafeteria/kitchen in the adjacent Patient Tower building. (Please see Section 3.6.11, *Renovation of Existing Project Buildings*, for a discussion of improvements proposed to existing Project site buildings under the Project.)

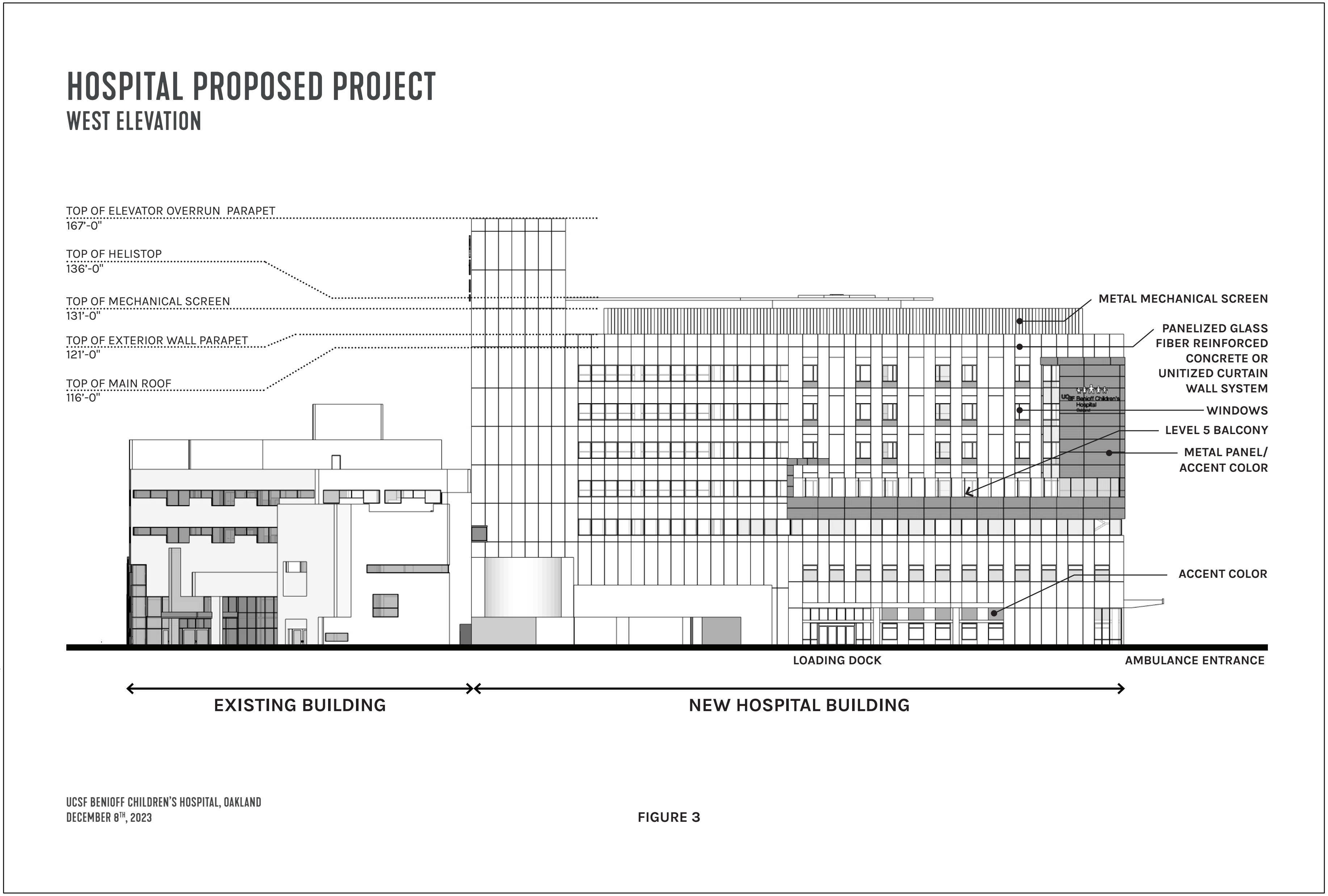
3.6.2 New Hospital Design

Figure 3-3 presents the proposed new hospital building site plan. As proposed, the new hospital building would be 332,523 gsf, and consist of 8 stories above grade plus a full basement and a rooftop helistop. The new hospital building would be situated south of, and adjacent to, the existing Patient Tower and D&T Building. The new hospital building, and renovated Patient Tower and D&T Building would effectively function as one hospital. **Figure 3-6** through **Figure 3-9** present elevation drawings depicting the west, north, east and south elevations, respectively, of the new hospital building. The height of the building above ground level would be approximately 116 feet above ground level (agl) to the building main roof, 131 feet to the top of mechanical screen, and approximately 167 feet agl to top of helistop elevator overrun parapet.

Figure 3--10 presents a stacking diagram of the new hospital building, and adjacent Patient Tower and D&T Building. Due to the greater floor-to-floor heights of the new hospital building, only Levels 1 through 3 of the new hospital building would horizontally connect to the adjacent Patient Tower and D&T Building. Final connection locations and floors would be confirmed during the design process. A transfer elevator core in the new hospital building would allow for connections to the remaining floors. See details of the proposed improvements to the Patient Tower and D&T Building, under *Renovation of Existing Buildings,* below.

Levels 1 and 2 in the new hospital building would primarily contain the ED and supporting services facilities, and ground-level loading dock. The ED would replace the existing ED with more appropriately sized rooms in contiguous space, with updated technologies for the emergency service needs and in support of Level 1 Trauma care. The ED and its access points for Ambulance and Ambulatory entries would fully relocate into the new hospital building. The new ED would be programmed with a total of 42 stations; and augmented with additional imaging modalities, including individual rooms for magnetic resonance imaging (MRI), computed tomography (CT) scan, ultrasound, and general radiography.

Surgery, cardiac Cath/IR services, and preparation and recovery space would be located on Level 3. Six (6) new operating rooms and one new Cath/IR room would be provided. New nursing units would be located on the upper floors (Levels 4 through 8) of the new hospital building. Level 4 would contain the NICU and Graduate Medical Education on-call space. The medical/surgery and behavioral health nursing units, and Child Life services would be located on Levels 5 and 6. The new hospital building basement level would contain various mechanical space, emergency domestic/fire water and wastewater storage, and hospital supporting functions.



2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

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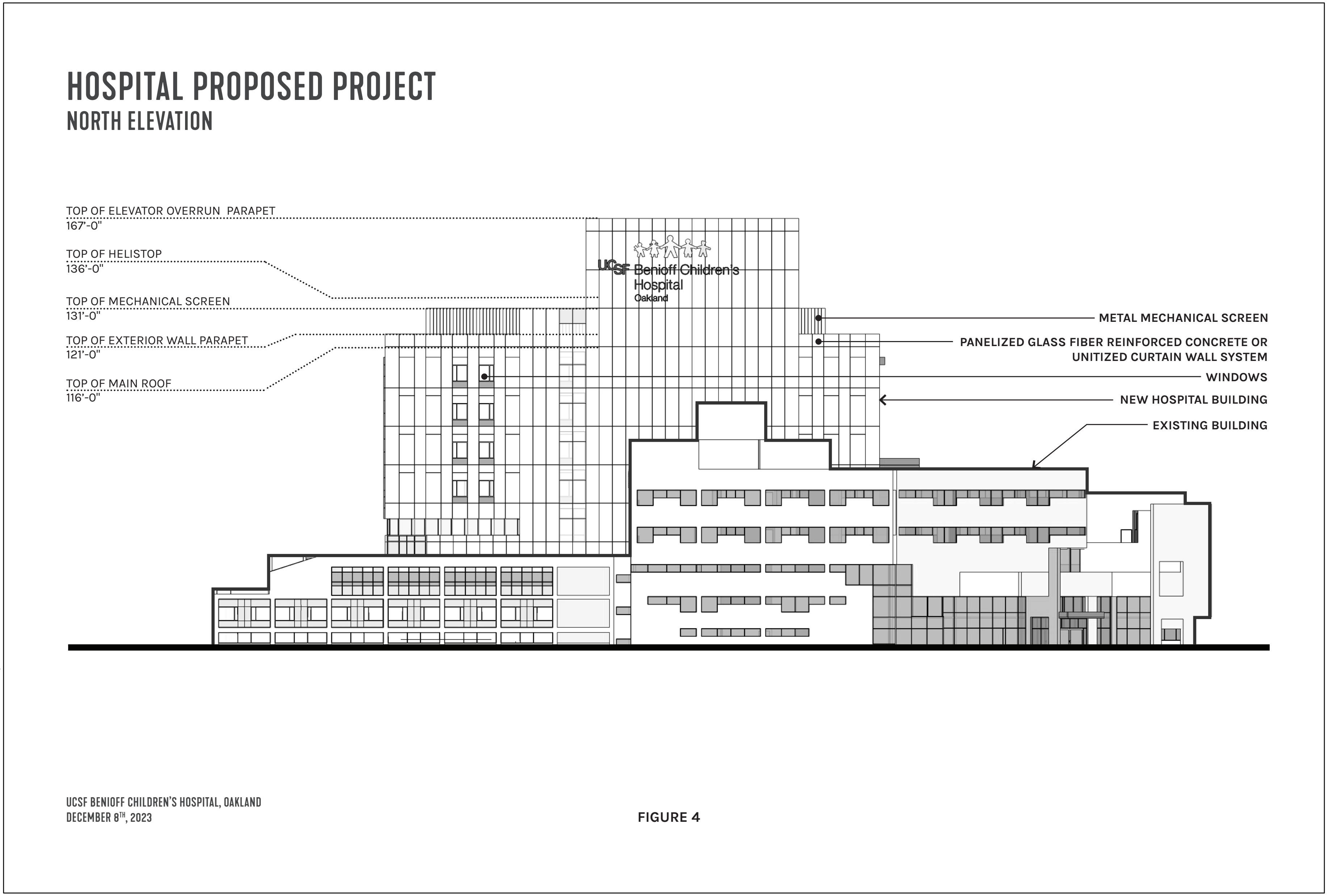
Figure 3-6
New Hospital Building – West Elevation



2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

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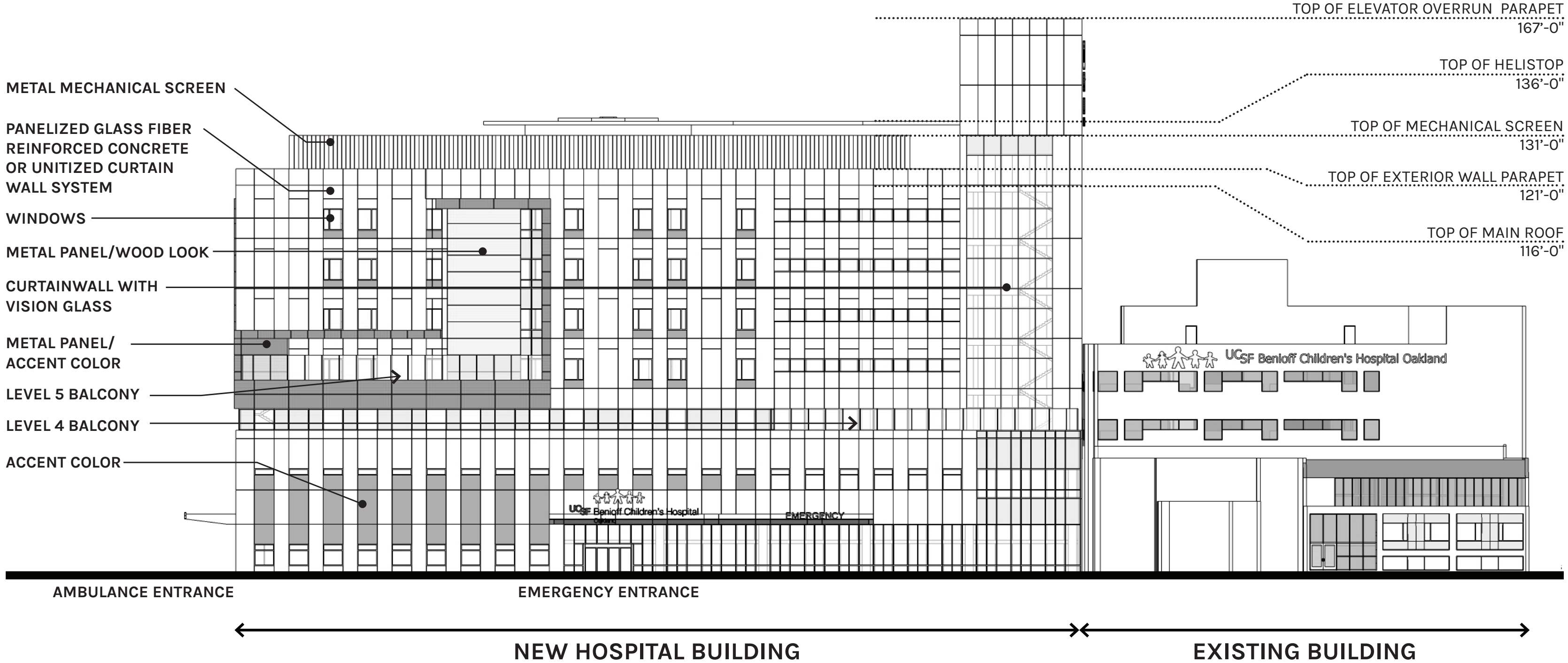
Figure 3-7
New Hospital Building – North Elevation

HOSPITAL PROPOSED PROJECT

EAST ELEVATION



UCSF BENIOFF CHILDREN'S HOSPITAL, OAKLAND
DECEMBER 8TH, 2023

FIGURE 1

2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

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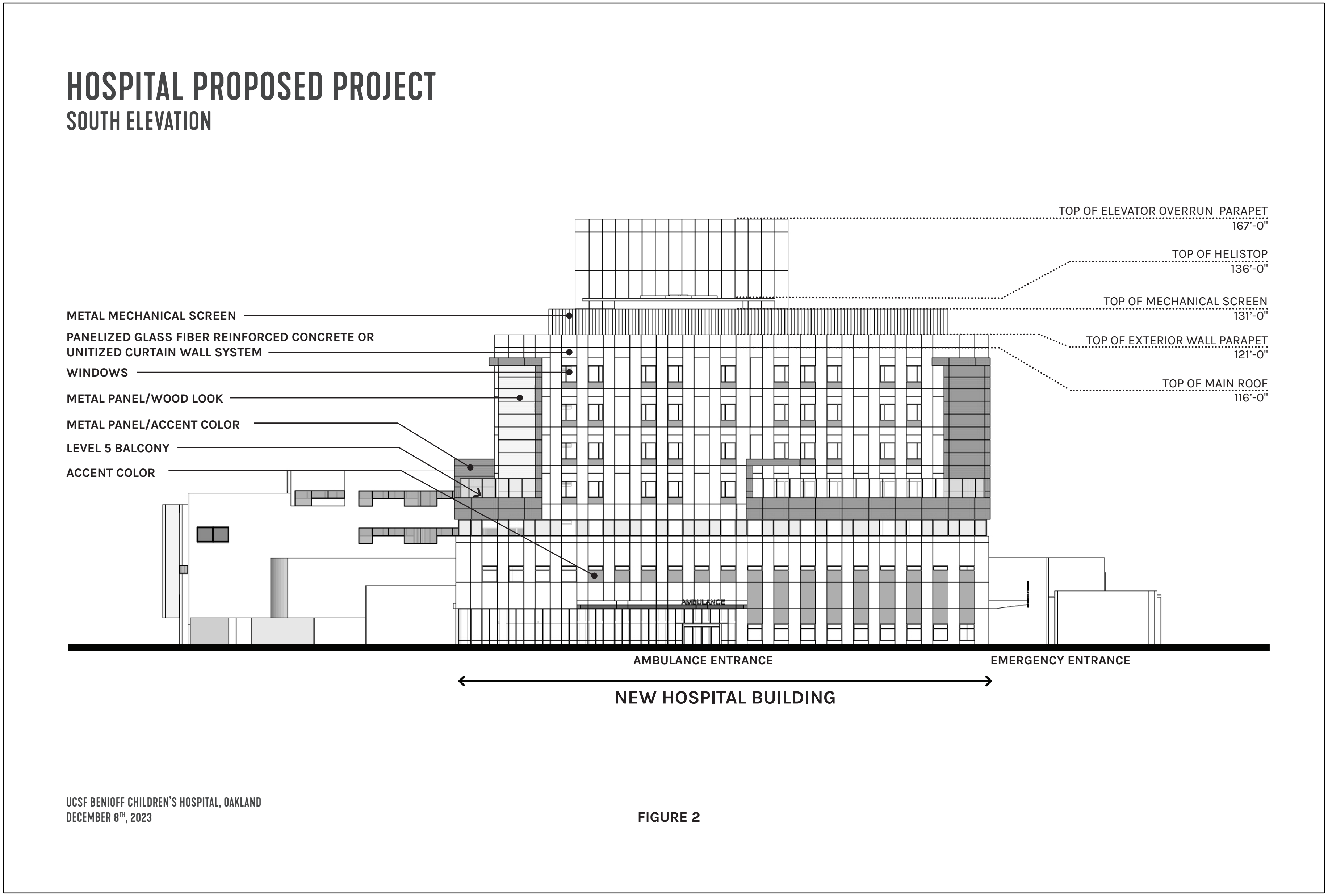
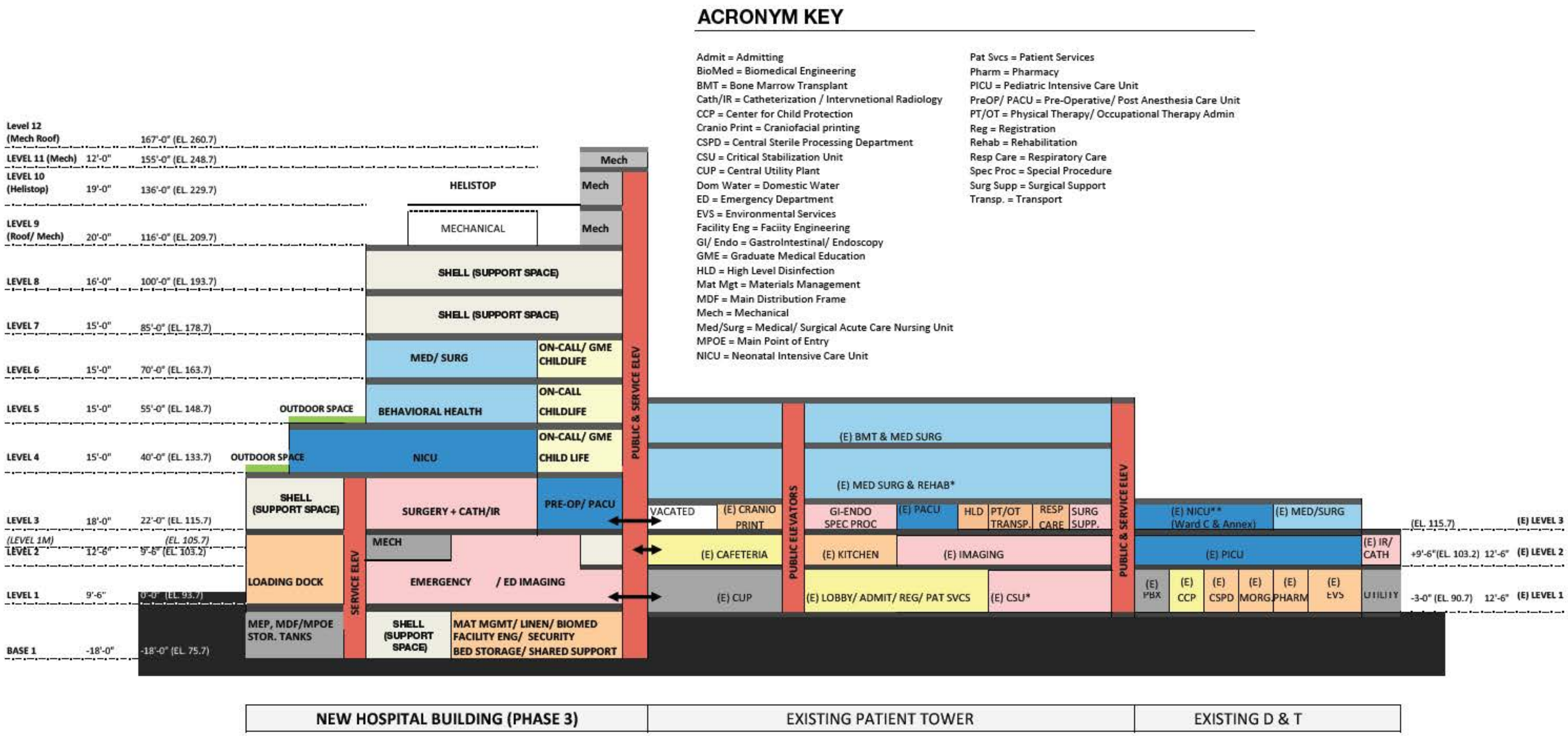
Figure 3-8
New Hospital Building – East Elevation



SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

Figure 3-9
New Hospital Building – South Elevation



SOURCE: SmithGroup, 2023

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Figure 3-10
Stacking Diagram for the New Hospital Building, and Patient Tower and D&T Building

Additional mechanical space would be located on an interstitial level on Level 2, and the building rooftop.

Each typical medical/surgery and ICU nursing unit floor would generally be composed of two 12-bed pods for a total of 24-beds per floor. The behavioral health unit and NICU units would have different bed configurations and counts. All the medical/surgery patient rooms are proposed to be private and be acuity convertible (ability to convert patient rooms from medical/surgery use to intensive care use with minimal additional construction). The NICU would be all private, except for 3 twin-capable beds; the behavioral health floor would also be all private. Elevated outdoor access would be provided for the behavioral health unit (as required) and on the NICU floor for use by all patients, visitors and staff.

An up-to-15-foot high metal rooftop penthouse screen would extend along the roof perimeter to ensure rooftop equipment would not be visible from off-site. Rooftop equipment would be located within enclosures to provide both noise attenuation and weather protection.

The new hospital building would incorporate a variety of exterior materials, textures and colors in its exterior design. The exterior material palette is proposed to be relatively neutral and light to complement the existing campus architecture. The preliminary design includes either a combination of panelized glass fiber reinforced concrete (GFRC) in 2-different neutral colors, with accents of metal panel and colored glass, or a unitized curtain wall system. Terraces and balconies would contain 6- to 8-foot high glass rails for safety and protection from wind.

Rooftop Helistop Structure

The existing helistop would be relocated to the roof of the new hospital building roof. The rooftop helistop landing would measure approximately 20 feet above the building roof deck (i.e., approximately 136 feet agl, or 96 feet higher in elevation compared to the existing helistop landing[3]). A trauma elevator on the building roof serving the helistop deck would provide transport of patients to hospital floors. All supporting systems required for safe operation of the helistop, including lighting, fuel oil separation, and fire suppression would be provided.

After the existing helistop is demolished, helistop operations at the campus site would be temporarily suspended until the new helistop structure is completed atop the roof of the new hospital building. UCSF is considering a temporary off-site helistop location for this interim period, to maintain air ambulance service while construction occurs at the NHB Project site. Patient transport from the temporary helistop location to UCSF BCH Oakland would occur via ground ambulance. The most likely location for the temporary helistop would be Oakland International Airport. However, a vacant site at the terminus of 4th Street (11 4th Street) adjacent to the I-880 freeway is also under consideration. As no location has been firmly identified, the appropriate level of environmental review would be completed by the appropriate CEQA lead agency at the time a location is proposed.

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3 Estimate accounts for differences in existing helistop ground elevation and proposed ground elevation for the new hospital building.

Upon commencement of helistop operation, helicopters would use a similar east-west approach and takeoff zone as under existing conditions, but the operations would be relocated to the north in alignment with the new helistop site.

It is anticipated that the helicopter arrivals/departures may increase by approximately 1 percent per year with or without the proposed Project.[4] Using the 786 helicopter operations (landing plus takeoffs) in 2022 as a baseline, the projected helicopter operations at the Project site in the first year of NHB operation (2031) would be approximately 858.

3.6.3 Parking Garage

As shown in Figure 3-3, the proposed 4-level parking garage would be located at the south end of the Project site, with vehicular access provided via an existing driveway on 52nd Street and an internal access road on the north side of the garage. The parking garage would provide between 200 and 270 vehicle parking stalls, including stalls with electric vehicle charging stations. The provision of 200 parking spaces would be the minimum required to meet the estimated Project parking demand at current parking demand rates; the provision for up-to-270 spaces would allow for a buffer/flexibility and potential additional needs (e.g., additional American's with Disabilities Act (ADA) spaces, surge demand during peak seasons, and/or additional demand for on-site parking due to increased enforcement of on-street parking) should additional demand materialize. For purposes of analysis, this EIR will address will conservatively address a 270-space parking garage as it would provide a worst-case assessment of potential environmental impacts.

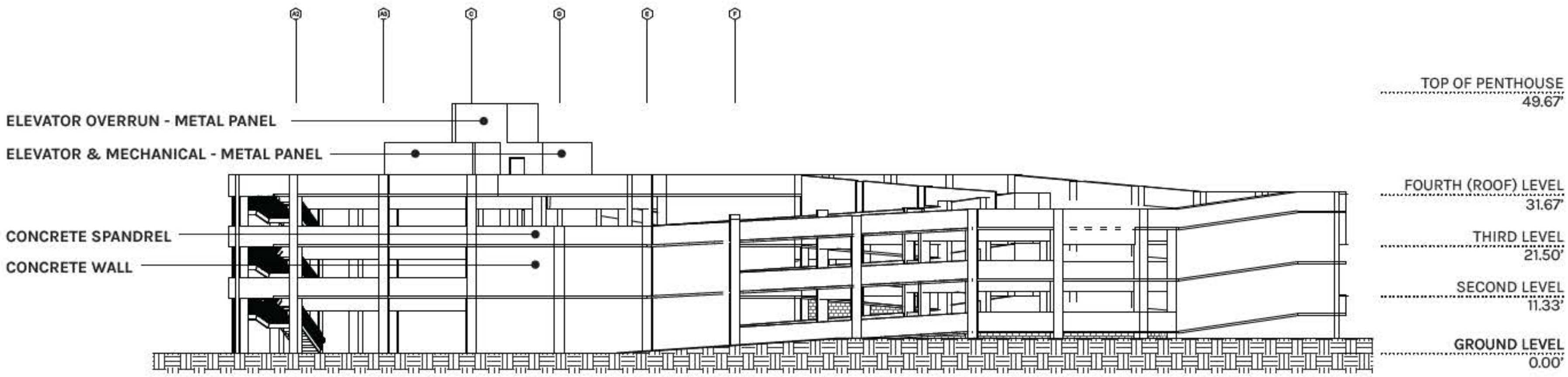
The 270-space parking garage would be 96,912 gsf. The parking structure would be concrete with sloping decks and include two prefabricated exit stairs and two public elevators, lighting, fire protection, and parking control.

Figure 3-11 through **Figure 3-14** present elevation drawings depicting the west, north, east and south elevations, respectively, of the proposed parking garage. The parking garage would measure approximately 32 feet agl to the top of 4th level deck, and a maximum height of approximately 50 feet agl when accounting for the top of penthouse. The parking garage entry would be gated and controlled.

3.6.4 Site Support Building and Permanent Loading Dock

As indicated in Figure 3-3, an approximate 6,100 gsf site support building would be constructed along the east side of the Project site that would be utilized for loading activities for the hospital after the existing loading dock is demolished and prior to completion of the permanent loading dock. The building would provide an elevated loading dock with 2 truck bays and areas for compactor/containers for trash and recycling waste. The site support building would also include

[4] The actual number of helicopter landings, and their timing, is a function of medical emergencies, which can vary daily and seasonally. Furthermore, landings can increase or decrease over time with changes in population, added or reduced medical specialties at the hospital, and the availability of competing services at other hospitals.



SOURCE: SmithGroup, 2023

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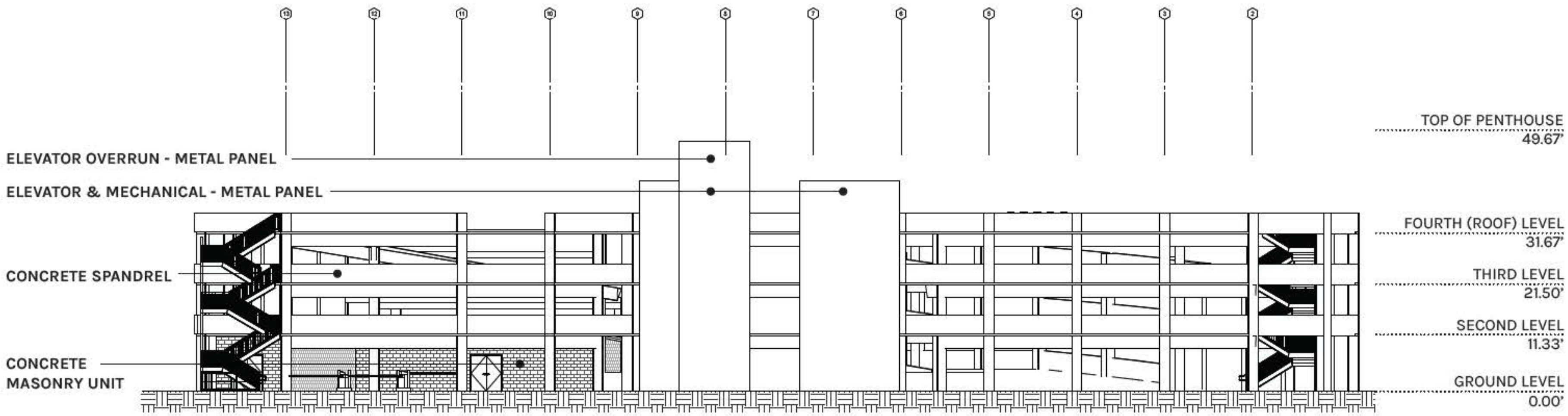
Figure 3-11
Parking Garage – West Elevation



SOURCE: SmithGroup, 2023

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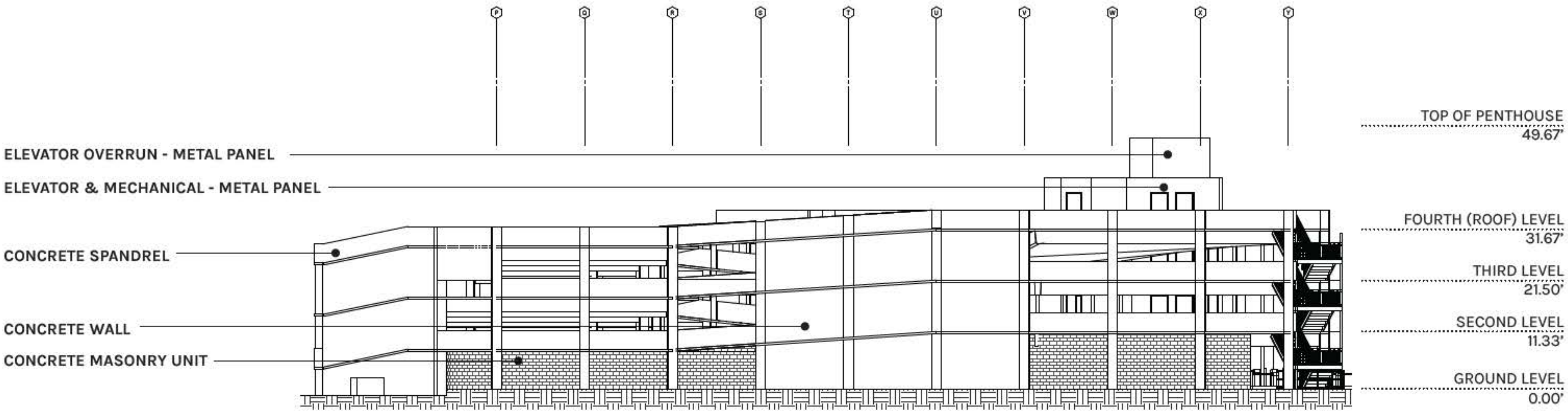
Figure 3-12
Parking Garage – North Elevation



SOURCE: SmithGroup, 2023

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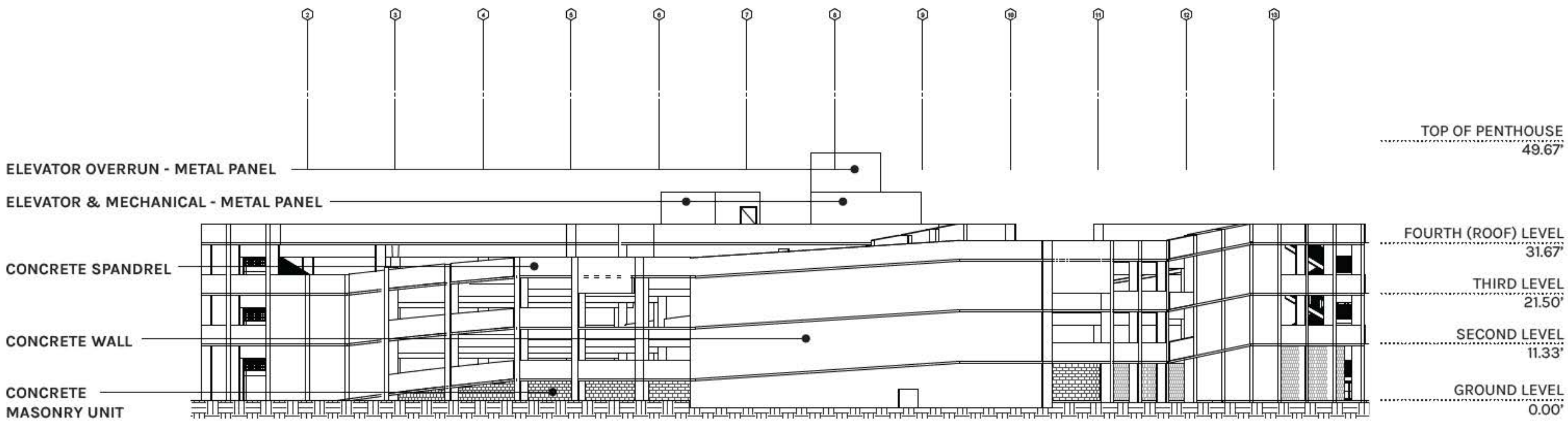
Figure 3-13
Parking Garage – East Elevation



SOURCE: SmithGroup, 2023

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Figure 3-14
Parking Garage – South Elevation

a materials staging, warehouse and distribution area, and storage areas for hazardous and medical waste, medical gas cylinders, and emergency food and water. **Figure 3-15** presents elevation drawings for the proposed site support building. The site support building would be pre-engineered, one-story in height and measure 22.5 feet agl (approximately 32.5 feet agl to top of rooftop mechanical screen).

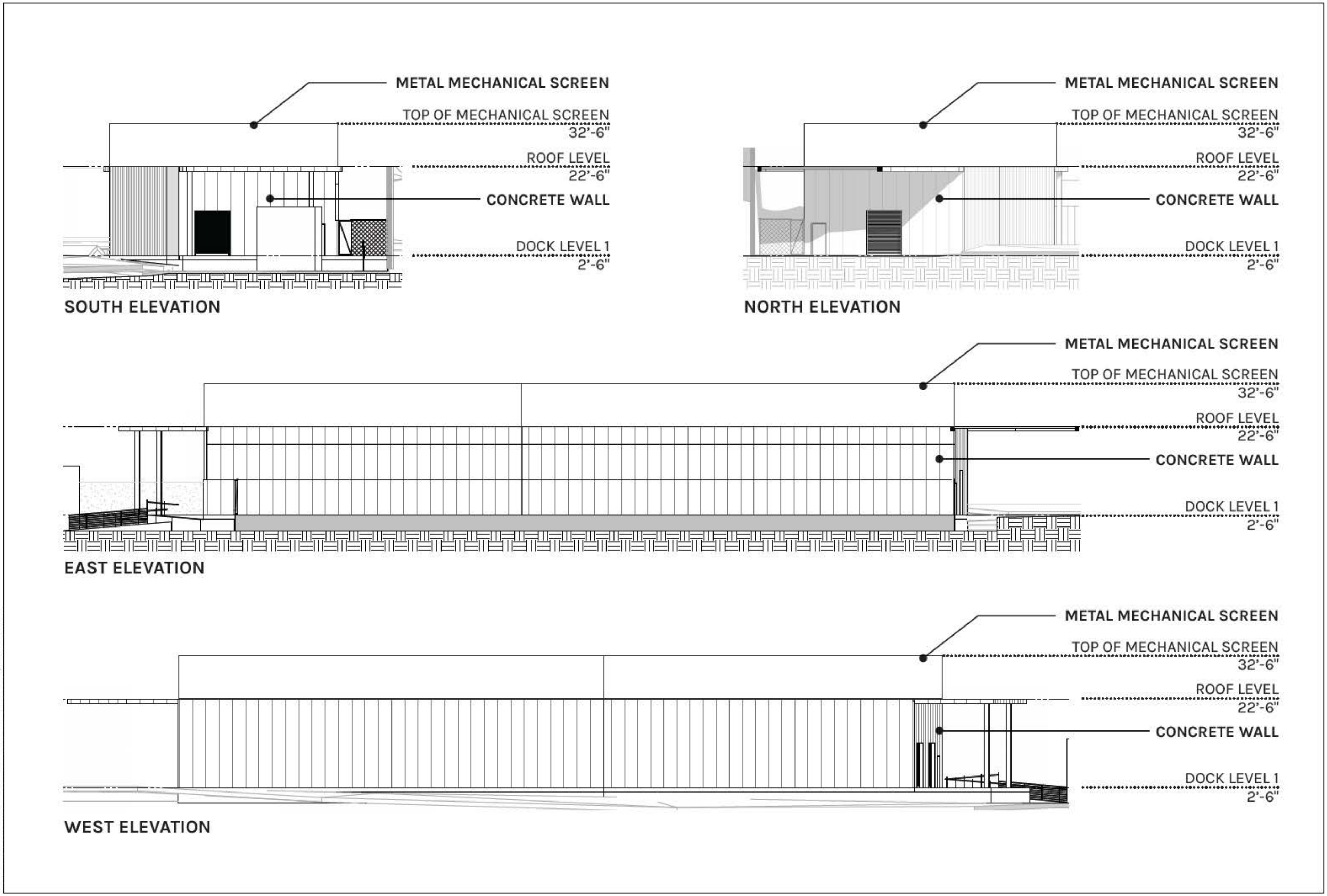
As depicted in Figure 3-3, permanent loading docks would be integrated into the west side of the new hospital building, in the same general location as the existing dock facilities. The proposed permanent loading docks would provide four dock bays (an increase over the two existing dock bays at the site). Service elevators adjacent to the loading docks would facilitate the transport of clean supplies and materials to the clean supply warehouse in the new hospital building basement. As with the site support building, the permanent loading dock facility would include hazardous and medical waste storage. After the permanent loading docks are completed, the site support building may remain and continue to be used as a supplemental facility.

3.6.5 New Hospital Pedestrian and Vehicular Circulation

Figure 3-3 illustrates the preliminary internal circulation improvements proposed at the Project site. The Project would shift the ED access to the east side of the Project site while maintaining the main front entry access and passenger drop-off as is at the northwest corner of the hospital. The principal vehicular ingress/egress point to the Project site for the public, emergency, and delivery vehicles would be via the Dover Street extension at 52nd Street. An internal driveway would extend south from 52nd Street and access a passenger drop-off area for the ED entrance located along the east side of the new hospital building and continue south to the parking garage entrance/exit.

An east-west drive-aisle between the parking garage entrance/exit and MLK Jr. Way would provide access for the ambulance patient drop-off and ambulance/ emergency vehicle parking areas located along the south side of the new hospital building. Access to this drive aisle would be limited to ambulances only. A new driveway on MLK Jr. Way would allow right-turn access to and from the Project site for ambulances only [emergency vehicles (police vehicles and fire trucks) would also be able to use this driveway and the east-west drive aisle south of the new hospital building in the event of an emergency]. Passenger vehicles (both employees and patient/visitors) would be prohibited from using the driveway and the east-west drive aisle south of the new hospital building and would be required to exit the campus site through the Dover Street extension.

Fencing and gates would be located strategically throughout the Project site to limit public access to select parts of the hospital and secure the Project site.



SOURCE: SmithGroup, 2023

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Figure 3-15
Site Support Building – Elevations

3.6.6 Utility Improvements

Utility upgrades for the new hospital building would include domestic water, fire water, wastewater, stormwater, electrical, medical gases (e.g., oxygen, nitrogen, and carbon dioxide) emergency fuel, telecommunications, steam and condensate, chilled water, and heating hot water.

Potable and Fire Water Distribution

A proposed new 8-inch potable/fire water distribution line would be extended south from an existing East Bay Municipal Utilities District (EBMUD) water main in the Dover Street extension on the Project site and connected to the proposed new hospital building and parking structure, along with backflow valves and meters. The proposed site support building would tie into the existing water main in the Dover Street extension.

Sanitary Sewer Collection

The proposed new hospital building and site support building would connect to a proposed upsized (12-inch) sanitary sewer line installed on the Project site, which would extend north and discharge to an existing City sanitary sewer collection line in 52nd Street near the Dover Street entrance. The proposed parking structure would connect to a new 6-inch sanitary sewer line which would extend west and discharge to an existing City sanitary sewer collection line in MLK Jr. Way.

Electrical Distribution

An underground duct bank containing a 115 kilovolt (kV) line and communication cables runs within a Pacific Gas and Electric Company (PG&E) easement that extends east-west through the Project site. As explained in Section 4.0.4 in this EIR, separate from the proposed Project, this existing duct bank would be removed, and a new duct bank would be rerouted around the southern tip of the campus site. Under the proposed Project, new underground electrical lines would be extended west from rerouted electrical duct bank to the new hospital building and parking structure.

Stormwater Collection and Treatment

Under the Project, a number of stormwater infrastructure improvements would be implemented on the Project site to accommodate the Project development and improve stormwater collection and treatment. Stormwater flows collected from the roofs of the new hospital building and site support building, as well as from the parking structure and hardscaped areas, would be conveyed to proposed on-site bioretention areas for treatment, after which it would be routed via existing and new private and City storm drains to the ACFCWD culvert. Additional stormwater treatment facilities under consideration may include vegetated building roofs. An existing on-site 24--inch City storm drain line would be rerouted around the east side of the footprint of the proposed parking structure. Stormflows collected in the north and northwest portion of the Project site occupied by existing buildings and loading dock would be treated by bioretention and then discharged to an existing City storm drain in 52nd Street.

NPC-5 Emergency Potable Water and Wastewater Storage Tanks

The *Alquist Seismic Safety Act* and Senate Bill 1953 (SB 1953) require all hospital facilities to comply with seismic safety building standards as defined by the California Department of Health Care Access and Information (HCAI). HCAI has developed Nonstructural Performance Categories (NPCs) that establish various levels of seismic performance for nonstructural equipment, components and systems critical to patient care.

NPC-5 requires the ability of a hospital facility to support 72 hours of emergency operations, including for potable water and wastewater. Separate emergency potable water and wastewater storage tanks, each with a capacity of 60,000 gallons would be required to serve all of the BCH Oakland campus site acute care buildings. UCSF is evaluating if this storage would need to be split between multiple tanks on the Project site to serve these facilities; some or all of the water storage may occur within the new hospital building basement level.

In addition, NPC-5 improvements that may be required at existing hospital facilities on the Project site include potential bracing of sprinkler branch lines in the Central Utility Plant, Cafeteria, Cardiac Catheterization Lab, Western Addition, and Chiller Building; and potential anchorage bracing or restraints in the Patient Tower, Central Utility Plant, and D&T Building.

Fire Water Storage

A 40,000-gallon capacity fire water tank would be installed within the new hospital building basement.

Medical Gas Storage

The new hospital building would include systems for oxygen, nitrogen and carbon dioxide; medical air, medical vacuum, and waste anesthesia gas disposal systems; and nitrous oxide distribution. Existing oxygen bulk tanks, and nitrous oxide, nitrogen, and carbon dioxide cylinder manifolds would be adequate to serve the new development at the Project site.

Emergency Generators

Up to three new emergency generators would be installed at ground level along the east side of the Project site adjacent to SR 24 to serve the proposed Project. Each generator would provide 2,000 kW power. Each generator would be contained within enclosures that would provide weather protection and noise reduction features.

3.6.7 Proposed Lighting

The proposed new hospital building and parking structure would include exterior lighting at building entrances, drop-off areas, and pedestrian walkways for security and for wayfaring purposes. Proposed new exterior lighting fixtures would be properly shielded to prevent unnecessary glare onto adjacent properties.

3.6.8 Proposed Landscaping

Figure 3-16 presents the proposed Project landscaping plan. Approximately 0.67 acres of landscaping would be provided. New landscaping is proposed at passenger drop off areas and entrances to the new hospital building, and along internal roadways. Landscaping would include a variety of trees, shrubs and other groundcovers. The landscaping plan includes plant species that would be drought-tolerant and low-water use to reduce irrigation demand. Landscaped areas are proposed to drain or serve as stormwater filtration or storage, or include swales and/or drainage catch basins to drain excess runoff. Plantings would meet the requirements of State-mandated Water Efficient Landscape Ordinance, which limits the amount of irrigation water that can be used on-site.

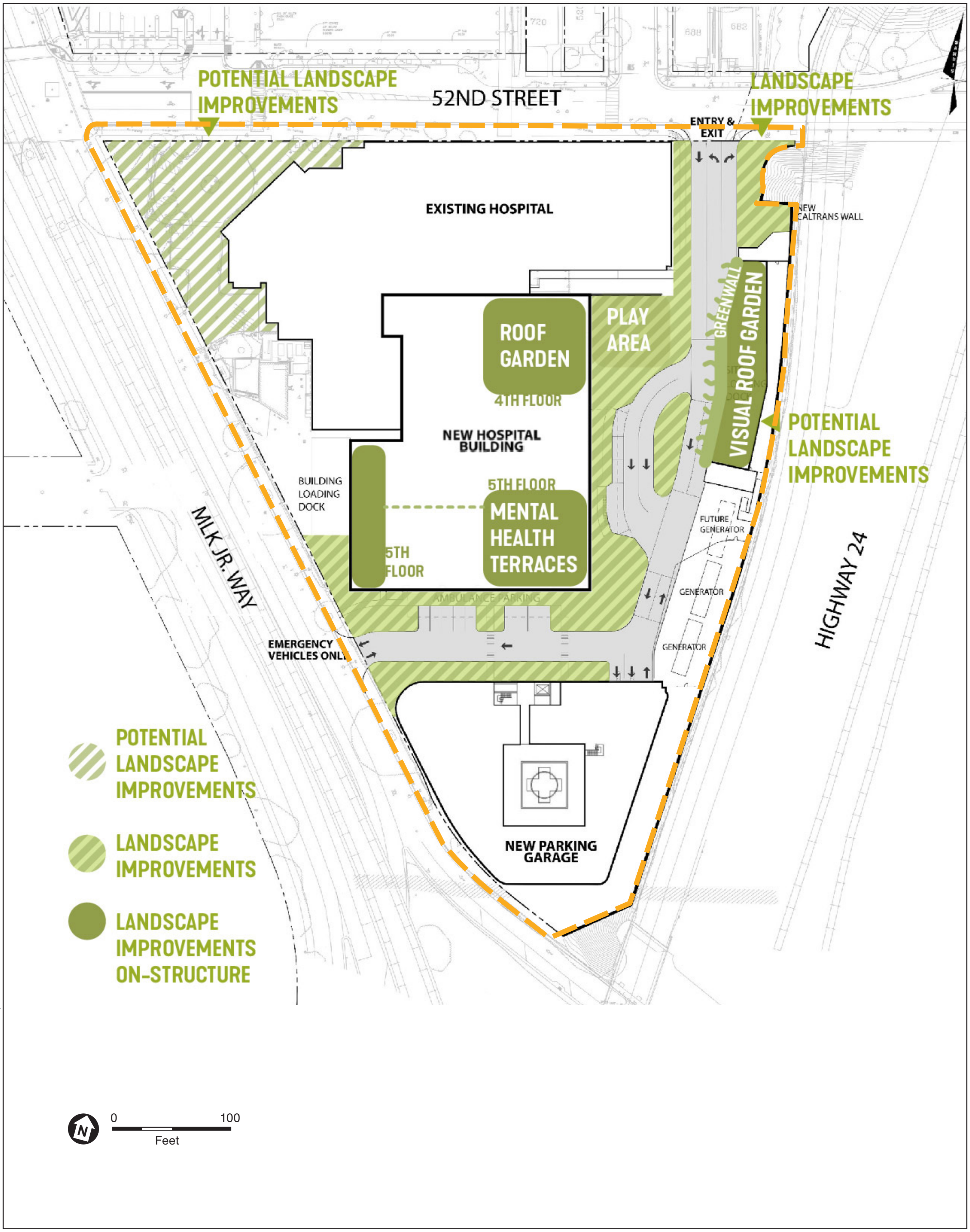
In addition, the new hospital building would provide elevated opportunities for outdoor space, including outdoor terraces. The behavioral health unit on Level 5 would have two private outdoor terraces; one for small groups on the west side, and one larger terrace for group activities on the southeast corner. These terraces would have at minimum 8-foot high glass barriers to ensure safety. Level 4 would have a publicly-accessible terrace and roof garden available to patients, staff and families adjacent to the public core and stair tower. The additional bed floors on Levels 6, 7 and 8 of the new hospital building would also have the potential to have balconies. In addition, the proposed site support building would have the potential to contain landscaping, including a greenwall and roof garden.

3.6.9 Building Bird-Safe Design

UCSF would implement building architectural features and operational strategies with respect to bird-safe design and practices. UCSF proposes to develop and incorporate bird-safe design features and measures in consultation with a qualified expert based on site-specific conditions.

3.6.10 Sustainability

The Project is being designed and developed to minimize its environmental impact and to support the health of its occupants and the well-being of the local community. Sustainability improvements under the NHB Project are focused on air quality, carbon emissions, water use, resources, biodiversity and open space, human health, and community well-being. The new hospital building would comply with the applicable UC on Sustainable Practices and would pursue a minimum level of LEED Gold Certification; as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."



SOURCE: SmithGroup, 2023

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Figure 3-16
Proposed Landscaping Plan

Also in keeping with the UC *Policy on Sustainable Practices*, UCSF BCH Oakland intends to purchase net zero carbon electricity, either from the UC Regents through the Direct Access Program, or from an alternative provider such as East Bay Community Energy. The UC Regents program is referred to as the UC Clean Power Program and contributes to achieving carbon neutrality in indirect emissions through the purchase of carbon-free electricity. As of 2019, the UC Clean Power Program became 100 percent carbon free. The UC Policy on Sustainable Practices now has a policy goal that each campus and health location obtain 100 percent clean electricity by 2025. UCSF BCH Oakland's purchase of net zero carbon electricity would result in reduced carbon dioxide emissions from existing conditions, even with the addition of the proposed Project energy use. Please refer to Section 4.4, *Energy*, and Section 4.6, *Greenhouse Gas Emissions* for additional detail.

To improve air quality and reduce carbon emissions, the new hospital building would have no new natural gas infrastructure and all new facilities would be powered by electricity. The new hospital building is required to outperform the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2010 baseline energy code by at least 30 percent and would target to outperform the code by at least 40 percent.

UCSF BCH Oakland proposes to reduce water use through the use of efficient plumbing fixtures and medical equipment, and native and adaptive landscaping.

To minimize resource consumption, sustainable materials would be selected in accordance with LEED Materials and Resources credit standards. The Project would be planned to help UCSF meet and exceed its 50 percent operational solid waste diversion goals. The construction of Project would divert at least 75 percent of construction waste from landfill and incineration, with a target to exceed 85 percent.

To support occupant health and community well-being, Project building materials would meet stringent LEED indoor air quality requirements and minimize the use of harmful chemicals. Occupants of the new hospital building would have access to daylight and views of nature, with indoor design conditions that support human comfort.

3.6.11 Renovation of Existing Project Site Buildings

Under the Project, renovation of approximately 30,000 gsf of existing building space on the Project site would be implemented. Renovations of space in the existing hospital are expected to occur on Levels 1 through 3 and may include administrative, public spaces, treatment, procedure and clinical support areas. A new corridor connection would be constructed through the existing ED on the ground floor of the Patient Tower. Minor improvements would be implemented in the existing Kitchen and Clinical Nutrition department on the second floor. Renovations on the third floor would occur for existing GI/Endoscopy, Surgery Support, and Respiratory Therapy departments, and Physical, Occupational and Speech Therapy offices. The Western Addition Building would receive some minor make ready-work to provide access to the Cafeteria and Kitchen. No renovations would occur in the existing D&T building under the Project.

3.6.12 52nd Street/MLK Jr. Way Entrance Improvements

Various improvements would occur at the existing hospital building entry and vehicular drop-off at 52nd Street and MLK Jr. Way, including potential additional planted areas and sidewalk and paving upgrades, and stormwater control.

3.6.13 Projected Patients, Visitors and Staff

The proposed increase in capacity and operations under the Project would result in an incremental increase in patients, visitors and staff at the UCSF BCH Oakland campus site. As shown in **Table 3-5**, the average daily population on the campus site would increase from 3,777 under existing conditions to 4,513 under the Project, for an increase of 736. About 75 percent of the population increase would be due to patients and visitors and about 25 percent due to additional physicians/faculty, staff, volunteers, vendors, and students (Blue Cottage, 2023).

TABLE 3-5
PROJECTED INCREASE IN DAILY PATIENTS, VISITORS AND STAFF UNDER NHB PROJECT

Building/Structure	Existing	Projected	Increase
Patients[a]	785	996	211
Visitors	1,332	1,675	343
Staff, Vendors and Volunteers	1,210	1,345	135
Physicians/Faculty	300	332	32
Students and Fellows	150	166	16
Total	**3,777**	**4,513**	**736**

NOTE:
a. Includes accompanying parents or other primary caretakers where necessary

SOURCE: UCSF, 2023

Following demolition of the A/B and B/C Wings, Bruce Lyon Memorial Research Laboratory and Addition, and trailers on the Project site, staff would be relocated to the planned ASB, OPC buildings and existing BCH Oakland properties and lease space as needed. In addition, remote working, hoteling workstations and traditional full-time workstations are proposed to facilitate the moves and work within space available. Certain occupants and functions from the OPC may be relocated to the off-campus UCSF properties or lease space.

3.6.14 NHB Construction

Construction Overview

As described in more detail below, construction of the Project would begin in Summer 2024 and be completed and operated by early 2031, with the exception of renovations to existing building renovations which would extend to early 2033. Construction activities would include, but not be limited to, demolition and/or removal of certain existing buildings and structures; excavation and grading activities at the Project site; building foundation and vertical construction; street and sidewalk construction; installation of utilities; building interior finishing; and exterior hardscaping and landscaping improvements. Project construction would generate temporary construction jobs on-site that would vary in number, depending on the specific construction activities being performed and overlap between construction of individual projects. Therefore, varying numbers of construction workers would be present on the Project site, depending on the phase of construction. Construction materials/construction worker staging areas would be located on the Project site, as feasible.

The proposed new hospital building would consist of a steel-frame structure with columns on a typical grid spacing of about 31 feet. The Level 1 floor slab would transfer lateral diaphragm forces from steel lateral resisting frames distributed around the building to the basement walls. The Level 1 slab would consist of normal weight concrete fill over a metal deck with two layers of reinforcing. Steel intermediate beams would support the floor slab, and steel girders on the gridlines would support the intermediate floor beams. Levels 2 through 8 slabs would consist of light weight concrete fill supported by metal deck. The roof would be light weight concrete fill to support the various mechanical equipment. The proposed foundation for the new hospital building would consist of a reinforced concrete mat slab of approximately 4-foot thickness, with step downs at the elevator pits. The parking structure would be cast in place concrete.

A temporary shoring system would be required at the Project site to shore the excavation for the new hospital building basement and accommodate the proposed foundation. The shoring system would comprise soldier beams and lagging and would be in place for less than two years. This shoring system would serve to support soil lateral pressures, including hydrostatic pressure and lateral pressure from nearby building foundations. Depending on location within the Project site and depth of excavation, limited and temporary dewatering would be required during construction; the extracted water would be discharged to the City's sanitary sewer system, after treatment, if necessary. The proposed new hospital building basement would be designed for hydrostatic uplift and waterproofing to prevent the potential for groundwater infiltration into the basement following construction.

A variety of mobile and stationary construction equipment would be used on the Project site and/or immediate vicinity during construction. This is expected to include use of cranes for pier drilling for foundations, steel and/or precast erection, and building façades. Other mobile equipment such as excavators, scrapers, aerial lifts, rollers, sweepers, concrete boom trucks and forklifts would be used at the project site for a range of other construction tasks, including site clearing, excavation and grading, building construction, and/or hardscape and landscape materials installation. Project construction would generate truck trips for deliveries of concrete and other building materials, transportation of construction equipment to and from the project site, hauling of soils and debris from the site, and street sweepers. A variety of other smaller mechanical equipment would also be used at the Project site during the construction period, such as saw cutters, chopping saws, tile saws, stud impact guns, impact drills, torque wrenches, welding machines, concrete boom pumps, and dewatering pumps.

No pile driving activities are proposed during construction of the Project. Rather, foundations would be installed using drilled piers.

Estimated Project Construction Phasing and Timeline

It is anticipated that the proposed Project would be constructed along the approximate timeline presented in **Table 3-6**. Actual timelines for individual construction activities may be influenced by factors outside of UCSF's control, including, but not limited to, economic conditions, weather, and other considerations.

TABLE 3-6
PRELIMINARY NHB PROJECT CONSTRUCTION SCHEDULE

	NHB Construction Component	Estimated Construction Duration
1	Demolish A/B and B/C Wings, Bruce Lyon Memorial Research Laboratory and Addition, trailers, and helistop	August 2024 through March 2026 (23 months)
2	Build Site Support Building, Site Utilities I	December 2024 through September 2025 (10 months)
3	Parking Garage / Rooftop Helistop	January 2025 through January 2026 (13 months)
4	New Hospital Building	April 2026 through January 2030 (46 months)
5	Site Utilities II - Connections	December 2027 through November 2028 (13 months)
6	NPC-5 Upgrades at Existing Hospital Facilities	April 2028 through March 2029 (12 months)
7	Site Hardscape and Landscape Improvements	September 2028 through December 2029 (16 months)
8	Site Improvements - Main Entry	August 2030 through January 2031 (6 months)
9	Renovation of Existing Buildings	August 2030 through January 2033 (30 months)

SOURCE: UCSF, 2023

Construction, Demolition and Excavation

As discussed above, the Project would involve approximately 435,600 gsf of new building construction (332,523 gsf for the new hospital building, 96,912 gsf for the proposed parking structure, and 6,100 gsf for the site support building). In addition, approximately 30,000 gsf of space in the existing buildings would be renovated. Approximately 109,600 gsf of existing buildings would be demolished. Maximum excavation on the Project site for the proposed new hospital building would be up to approximately 28 feet in depth, and for the parking structure would be up to 8 feet in depth. The Project would require approximately 55,000 cubic yards (cy) of excavated materials, including existing demolished building materials and soil, to be off-hauled from the site. Approximately 4,500 cy of materials are anticipated to be imported to the Project site, consisting of aggregate base, topsoil, bioretention soil and rock, and trench bedding and backfill.

Off-site Construction

While the great majority of construction under the Project is proposed within the Project site boundary, certain Project elements would require construction off-site. This includes sidewalk improvements along the 52nd Street and MLK Jr. Way frontage adjacent to the Project site and a new driveway curb cut on MLK Jr. Way; improvements at the intersection of 52nd Street and Dover Street entrance; and utility extensions and connections in 52nd Street and MLK Jr. Way. Depending on activity, off-site construction may result in temporary partial public road lane closure.

Tree Removal

Tree and vegetation removal would be required under the Project as a result of clearing, excavation, regrading, and/or other activities. Twenty-eight (28) trees on the Project site (including the mature magnolia trees in the courtyard located between the A/B and B/C Wings) and adjacent public right-of-way would require removal for construction of the Project (this excludes 50 trees located within the eastern portion of the Project site occupied by the SR 24 embankment, which would be removed separate from the Project). As discussed above, the Project would include a variety of landscaping, including new trees, on the Project site.

3.6.15 Activities on NHB Project Site that Were Previously Addressed and/or are Required to Comply with Applicable Regulations

Certain activities that were previously proposed under the 2015 CHRCO CMP and analyzed in the CHRCO CMP Project FEIR will be implemented in the near-term and are not reanalyzed as part of the proposed Project in this EIR; this includes the relocation of the existing retaining wall in the vicinity of SR 24 (inclusive of related tree and vegetation removal within this work site); and relocation of the PG&E underground electrical duct bank.

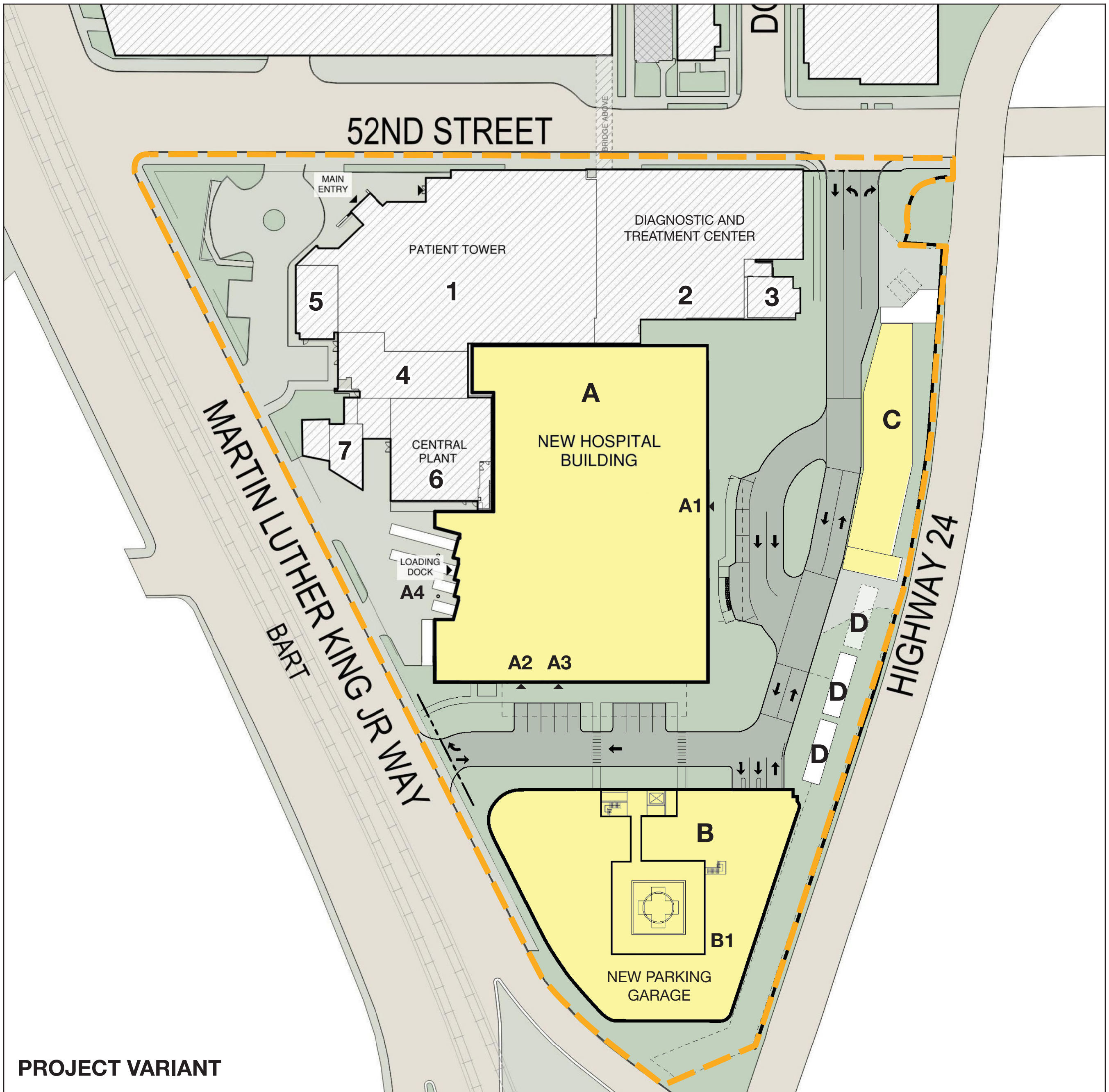
UCSF is also required to remove the existing fuel oil underground storage tank (UST) on the NHB Project site by early 2026 in accordance with State UST regulations, which will be replaced with a new 12,000-gallon above ground storage tank. This undertaking is not associated with the proposed NHB Project, and accordingly, will not be analyzed as part of the proposed Project in this EIR.

Any of the aforementioned activities that are not associated with the NHB Project will, however, be considered along with the proposed Project in the cumulative impact analysis in this EIR, as applicable.

3.6.16 Project Variant - Parking Structure Rooftop Helistop

A Project variant is analyzed in this EIR at an equal level of detail as the proposed Project. The Project variant involves a design change in which the proposed helistop structure would be constructed on top of the parking structure.

Figure 3-17 presents the Project variant site plan. The ground level site plan for the Project variant, including building footprints, vehicular and pedestrian access and circulation, would be identical to that of the proposed Project. However, as Figure 3-17 shows, the helistop would be centrally located on the parking structure roof. **Figure 3-18** provides a conceptual massing diagram of the proposed buildings under the Project variant.



PROJECT VARIANT

- **A** New Hospital Building
  - **A1** New Emergency Department Entrance
  - **A2** New Staff Entrance
  - **A3** New Ambulance Dropoff
  - **A4** New Loading Dock
- **B** New Parking Garage
  - **B1** New Rooftop Helistop
- **C** New Site Support Building
- **D** Generator Location

EXISTING BUILDINGS

1. Patient Tower
2. Ford Diagnostic and Treatment (D&T) Center
3. Cardiac Catheterization Lab
4. Cafeteria
5. Western Addition
6. Central Utility Plant
7. Chiller Building

New Buildings/ Structures

Existing Buildings

New Hospital Building Project Site

0 100 Feet

SOURCE: SmithGroup, 2023; ESA, 2023

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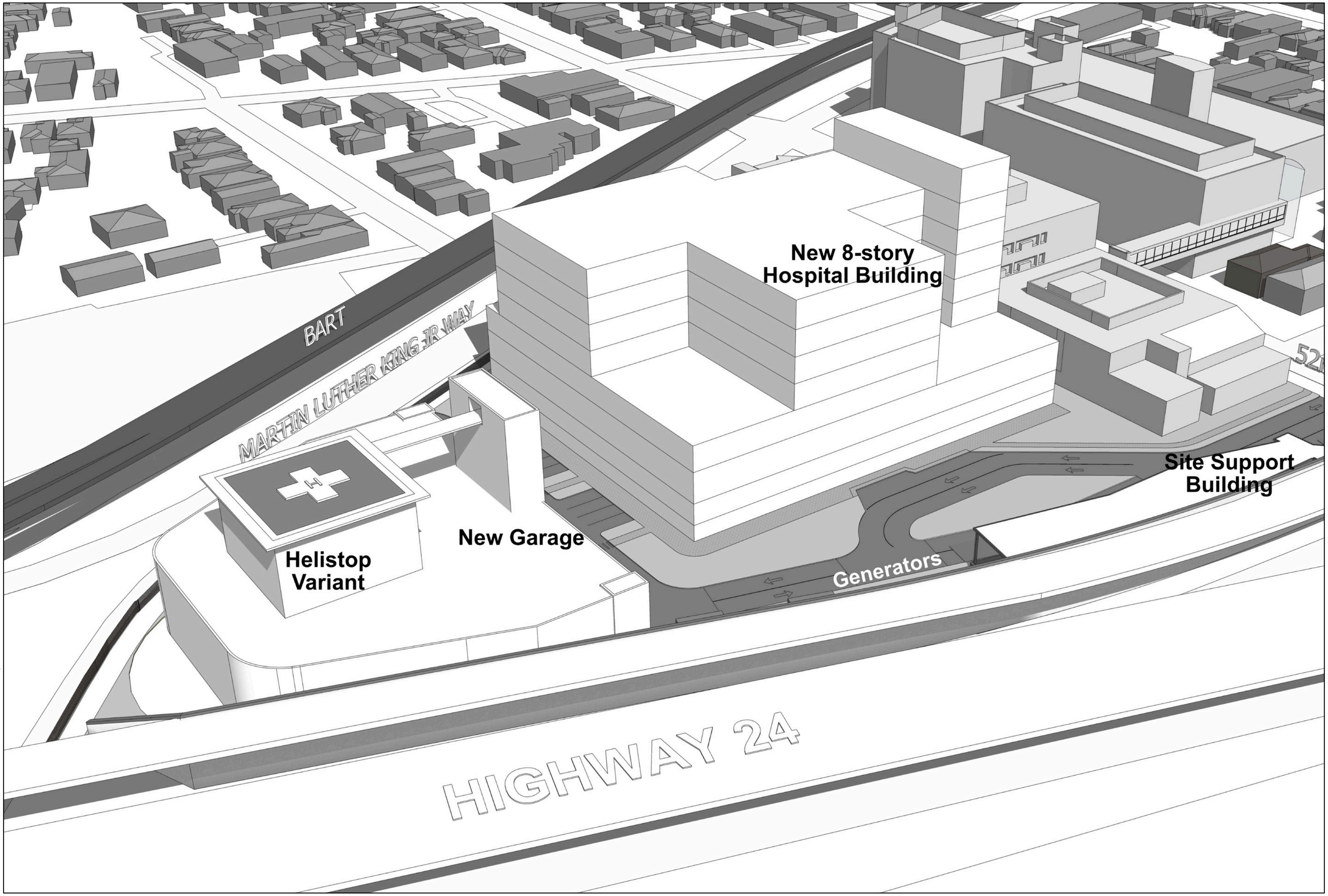
Figure 3-17
Project Variant Site Plan



2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

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Figure 3-18
Conceptual Massing of Proposed Buildings under Project Variant

Figure 3-19 through **Figure 3-22** present elevation drawings depicting the west, north, east and south elevations, respectively, of the new hospital building under the Project variant. The height to the new hospital building roof (116 feet agl) and to top of mechanical screen (131 feet agl) under the Project variant would be the same as that under the Project. However, the new hospital building under the Project variant would not include a helistop structure or require an elevator on the building rooftop.

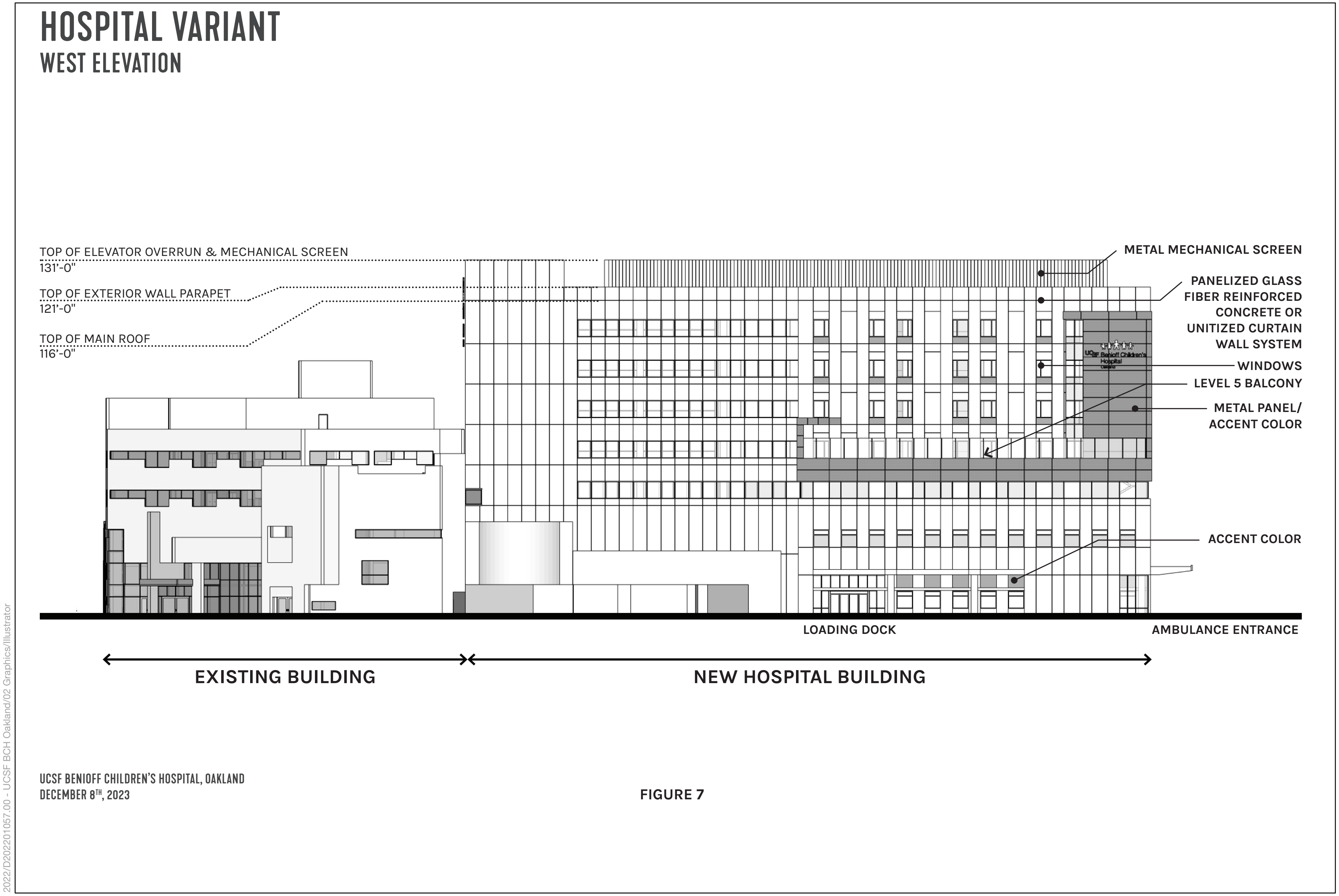
Figure 3-23 through **Figure 3-26** present elevation drawings depicting the west, north, east and south elevations, respectively, of the Project variant parking garage. The rooftop helistop landing under this variant would measure approximately 10 feet above the roof of the parking structure (i.e., approximately 42 feet agl, or 2 feet higher in elevation than the existing helistop landing at the Project site[5]). A trauma elevator above the 4th level of the parking structure serving the helistop deck would provide transport of patients from the helistop to ground level. The maximum height of the parking structure would measure approximately 74 feet agl when accounting for the top of penthouse.

As is the case with the proposed Project, all supporting systems required for safe operation of the helistop under this variant, including lighting, fuel oil separation, and fire suppression would be provided.

Similar to the proposed Project, after the existing helistop is demolished, helistop operations at the campus site would be temporarily suspended until the new helistop structure is completed atop the roof of the proposed parking structure. As discussed above, the most likely location for the temporary helistop would be Oakland International Airport. However, a vacant site at 11 4th Street adjacent to the I-880 freeway is also under consideration. During this interim period, UCSF would use the selected temporary helistop location, and transport patients from there to UCSF BCH Oakland via ambulance.

Upon commencement of helistop operation, helicopters would use a similar east-west approach and takeoff zone as under existing conditions, with operations relocated to the south in alignment with the new helistop site.

5 Estimate accounts for differences in existing helistop ground elevation and proposed ground elevation for the proposed parking garage.



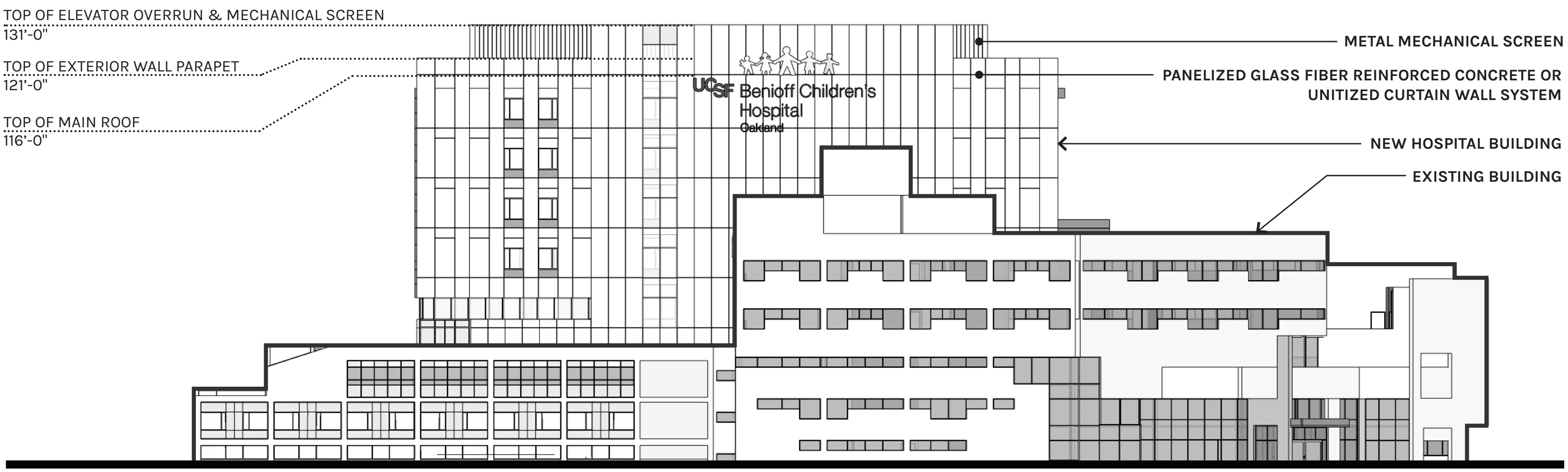
SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-19
Project Variant New Hospital Building – West Elevation

HOSPITAL VARIANT
NORTH ELEVATION



UCSF BENIOFF CHILDREN'S HOSPITAL, OAKLAND
DECEMBER 8TH, 2023

FIGURE 8

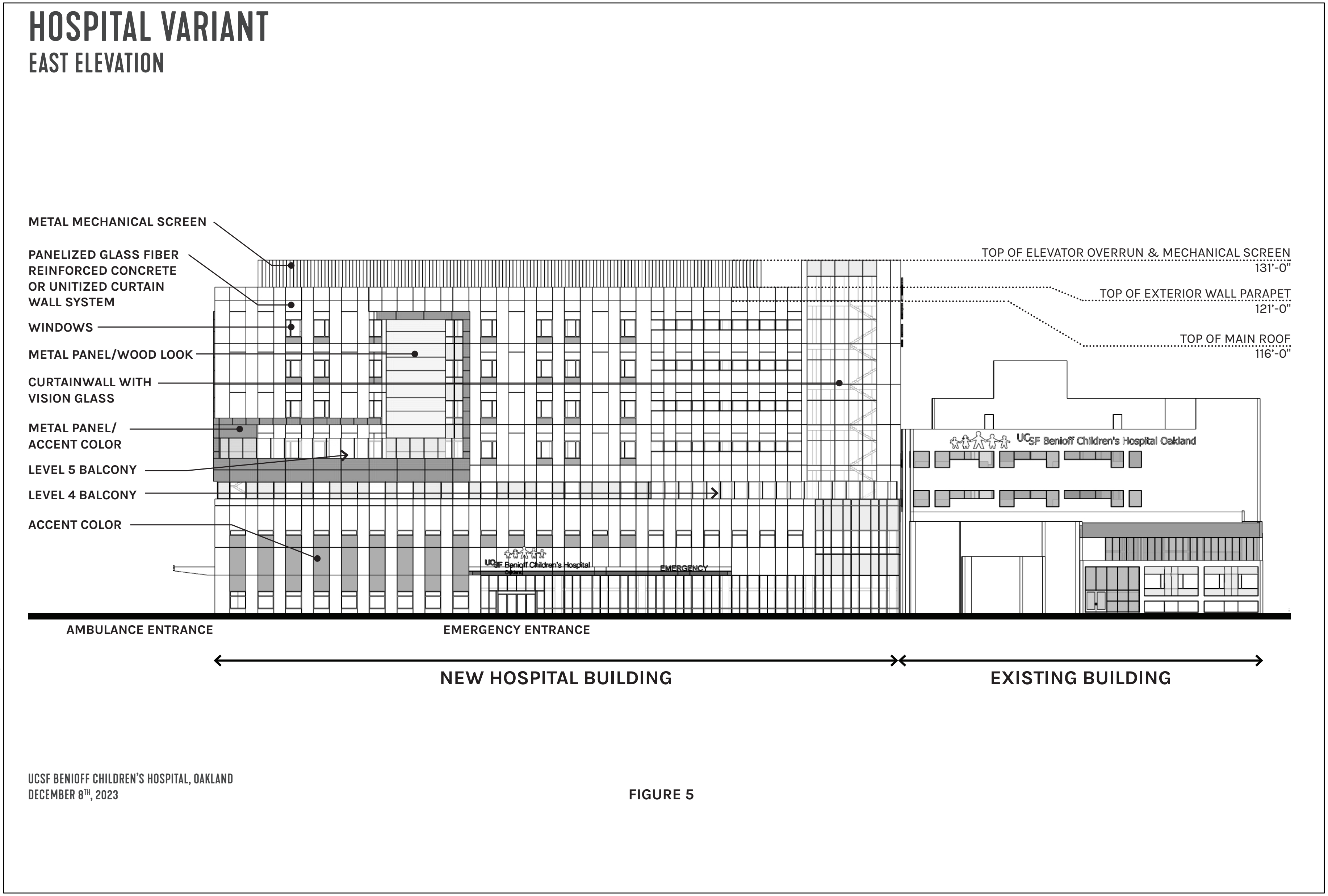
2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-20
Project Variant New Hospital Building – North Elevation



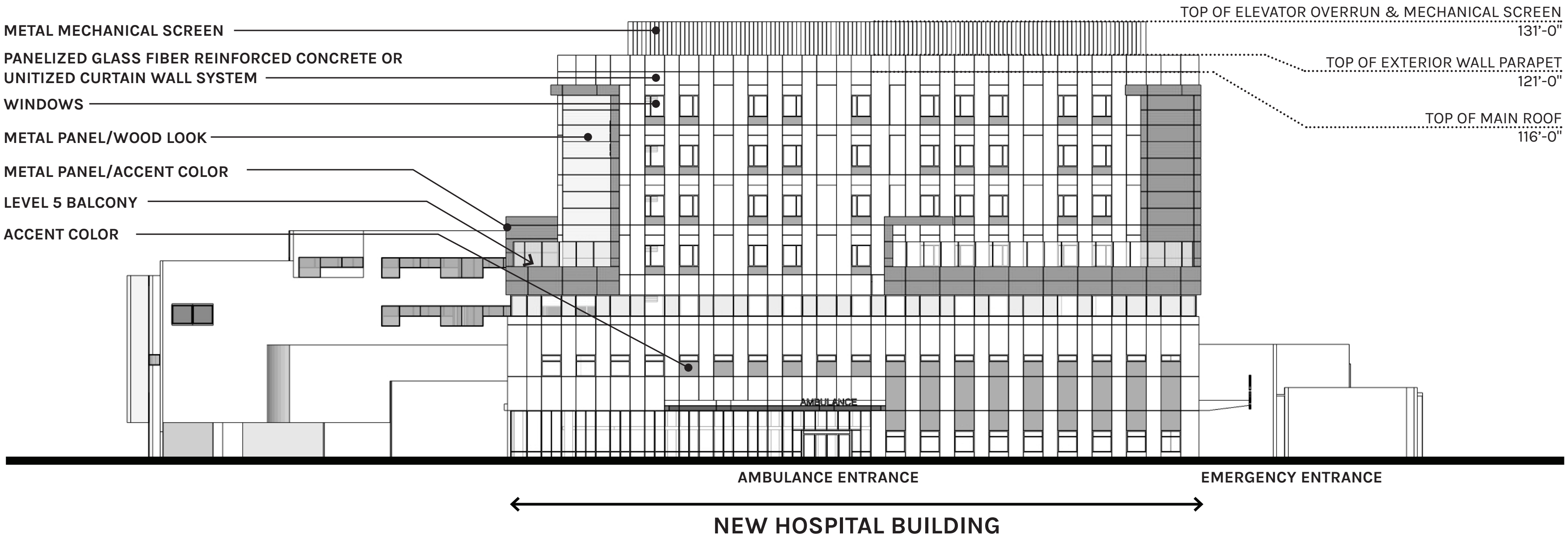
SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-21
Project Variant New Hospital Building – East Elevation

HOSPITAL VARIANT
SOUTH ELEVATION



UCSF BENIOFF CHILDREN'S HOSPITAL, OAKLAND
DECEMBER 8TH, 2023

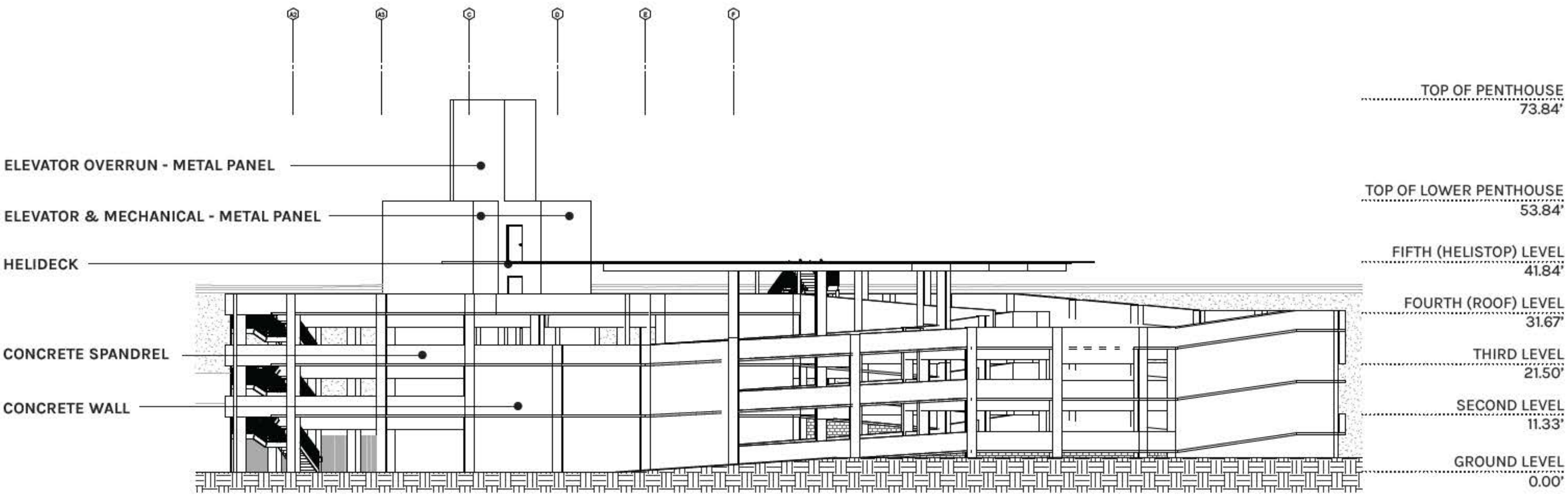
FIGURE 6

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-22
Project Variant New Hospital Building – South Elevation

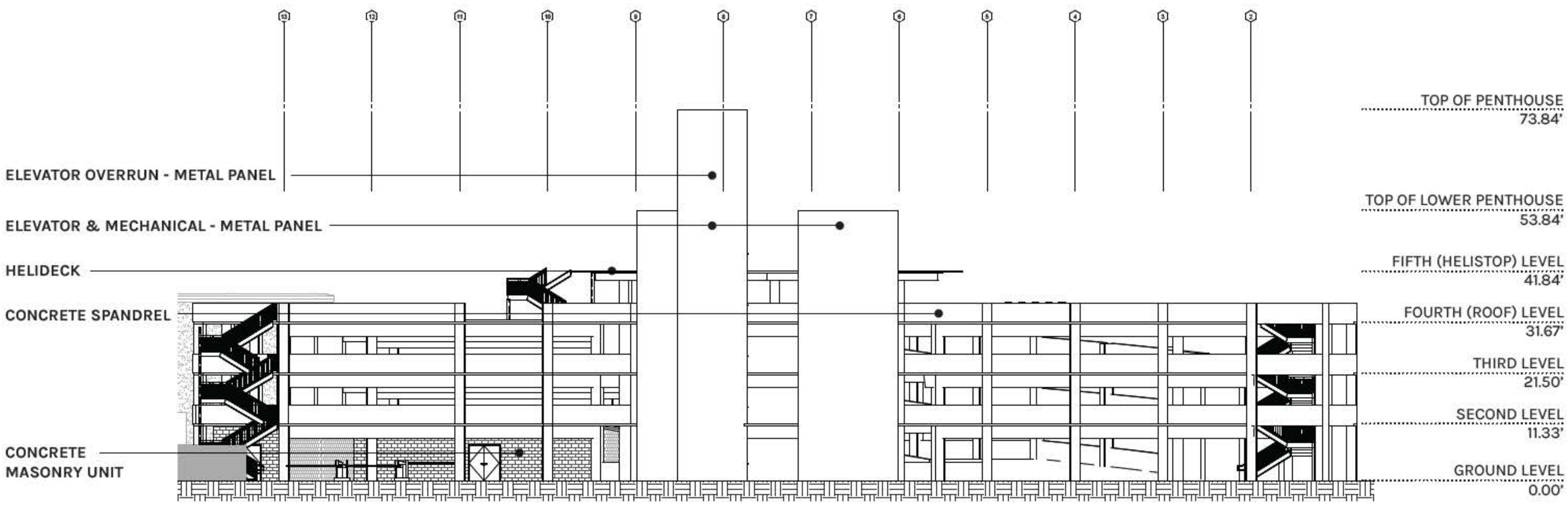


SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

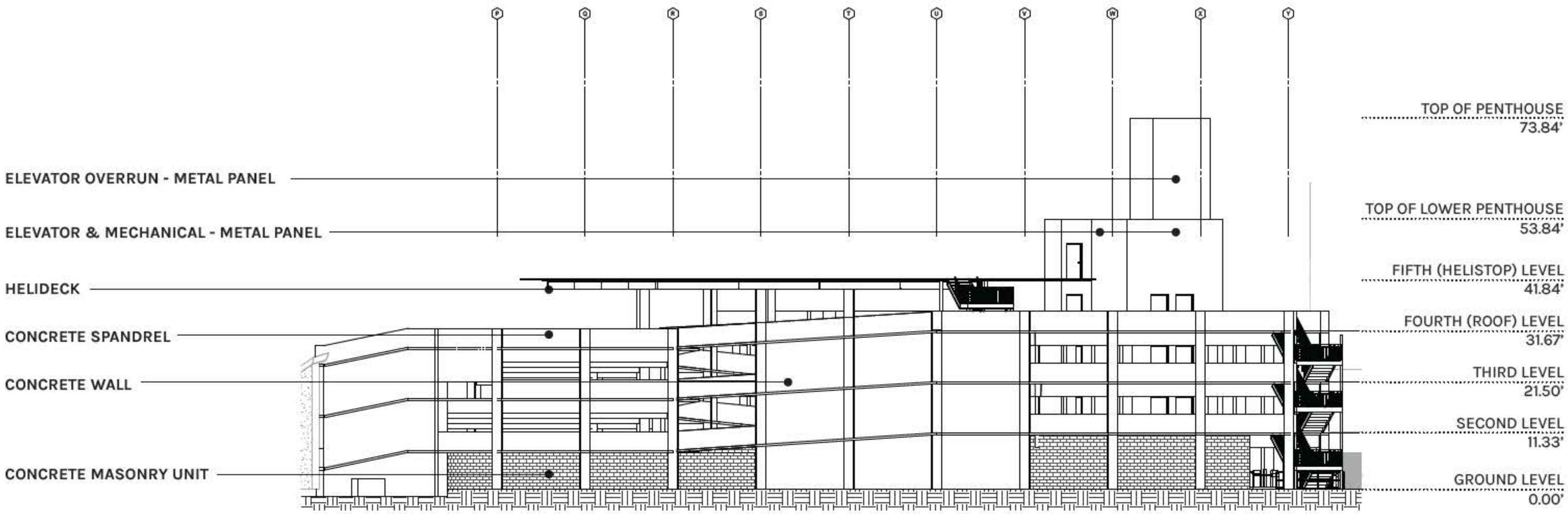
Figure 3-23
Project Variant Parking Garage – West Elevation



SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

Figure 3-24
Project Variant Parking Garage – North Elevation



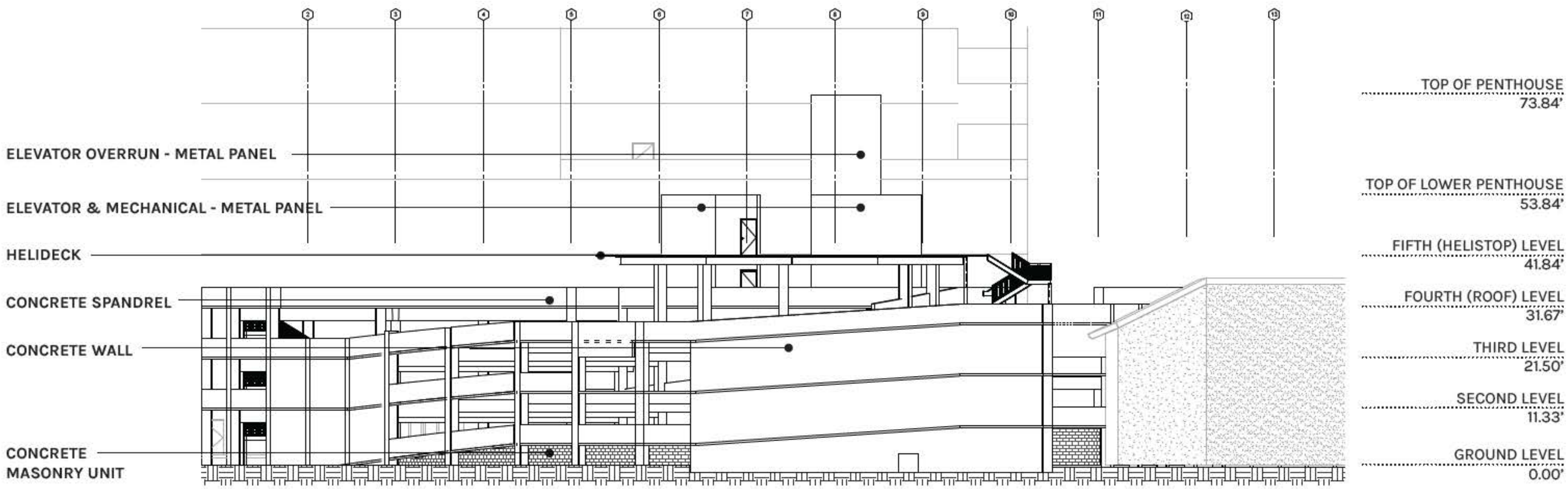
2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-25
Project Variant Parking Garage – East Elevation



SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project EIR

Figure 3-26
Project Variant Parking Garage – South Elevation

3.7 Revisions to the UCSF 2014 LRDP

UCSF is one of 10 campuses in the University of California system. Each UC campus is required periodically to prepare a Long Range Development Plan (LRDP) to guide campus growth and future physical development. On November 20, 2014, the Regents adopted the UCSF 2014 LRDP. The 2014 LRDP serves as a comprehensive physical land use plan and policy document to guide the physical development of the San Francisco campus at all its campus sites, accommodating future increases in enrollment and clinical, academic, and research activities, and increased housing demand at UCSF; and meeting its projected clinical, educational and research demand. The 2014 LRDP addresses development over an approximate 20-year period, or an approximate horizon year of 2035.[6] The 2014 LRDP also included a Greenhouse Gas Reduction Strategy (GHGRS), last amended in 2021, and a commitment to continue to enhance UCSF's Transportation Demand Management (TDM) Program.

The 2014 LRDP currently includes UCSF's three primary campus sites in San Francisco at Parnassus Heights, Mission Bay and Mount Zion; buildings owned by UCSF in San Francisco (at Mission Center, 654 Minnesota Street, animal care and research facilities at Hunters Point, and Buchanan Dental Center) and a material management facility in South San Francisco; and more than a million square feet of space leased by UCSF for a variety of purposes at numerous locations in San Francisco.

The UCSF BCH Oakland campus site is not included in the UCSF 2014 LRDP at the present time, and consequently, it is not subject to the LRDP's campus-wide or site-specific planning objectives. As the UCSF BCH Oakland campus site is controlled by the University, UCSF proposes to amend the 2014 LRDP to include the UCSF BCH Oakland campus site. Approval of an amendment of the 2014 LRDP will be requested from the UC Regents at the same time that the NHB Project is presented to the UC Regents for approval.

As part of the proposed 2014 LRDP amendment, the BCH Oakland facilities would be included in the UCSF 2014 LRDP space program. This would include the main UCSF BCH Oakland campus, and smaller-owned off-site locations (5700 MLK Jr. Way, 5220 Claremont Avenue, 5400 Telegraph Avenue, 4701 Shattuck Avenue, and the Walnut Creek Outpatient Center). **Table 3-7** summarizes the space (in gsf) associated with each site under existing conditions, and with the Project under buildout (2035) of the 2014 UCSF LRDP. As shown in Table 3-7, with the NHB Project, clinical space at the BCH Oakland main campus would increase by 259,100 gsf over existing conditions to a total of 772,500 gsf; housing (Family House) would remain at 16,300 gsf; and structured parking would increase by approximately 96,900 gsf over existing conditions to 351,900 gsf.

6 With the exception of the Parnassus Heights campus site, which has an approximate horizon of 2050.

TABLE 3-7
UCSF BCH OAKLAND CAMPUS SITE EXISTING AND PROJECTED SPACE PROGRAM

LRDP Space Category	BCH Oakland Main Campus	Smaller Owned Sites[a]	Leased Sites[b]
Existing (GSF)			
Clinical	513,400	290,200	42,100
Housing	16,300	--	--
Total Space Excluding Parking	**529,700**	**290,200**	**42,100**
Structured Parking	**255,000**	**--**	**--**
Proposed 2035 (GSF)			
Clinical	772,500	290,200	42,100
Housing	16,300	--	--
Total Space Excluding Parking	**788,800**	**290,200**	**42,100**
Structured Parking	**351,900**	**--**	**--**

NOTE:
All gsf numbers rounded to the nearest 100.
a. Smaller owned sites includes 5700 MLK Jr. Way 156,100 gsf), 5200 Claremont Avenue (20,500 gsf), 5400 Telegraph Avenue (17,300 gsf), 4701 Shattuck Avenue (16,700 gsf), and the Walnut Creek Outpatient Center (79,600 gsf).
b. For the sake of simplicity, the LRDP refers to all space, owned and leased, in terms of gsf, even though leased space is sometimes measures in sf, rather than gsf, depending on space and/or lease.
c. The UCSF 2014 LRDP does not need to be updated to reflect BCH Oakland leased sites. The LRDP only includes leased locations over 10,000 sf, and the only BCH Oakland leased site greater than 10,000 sf is 6425 Christie Street which is already in the UCSF 2014 LRDP.
SOURCE: UCSF, 2023

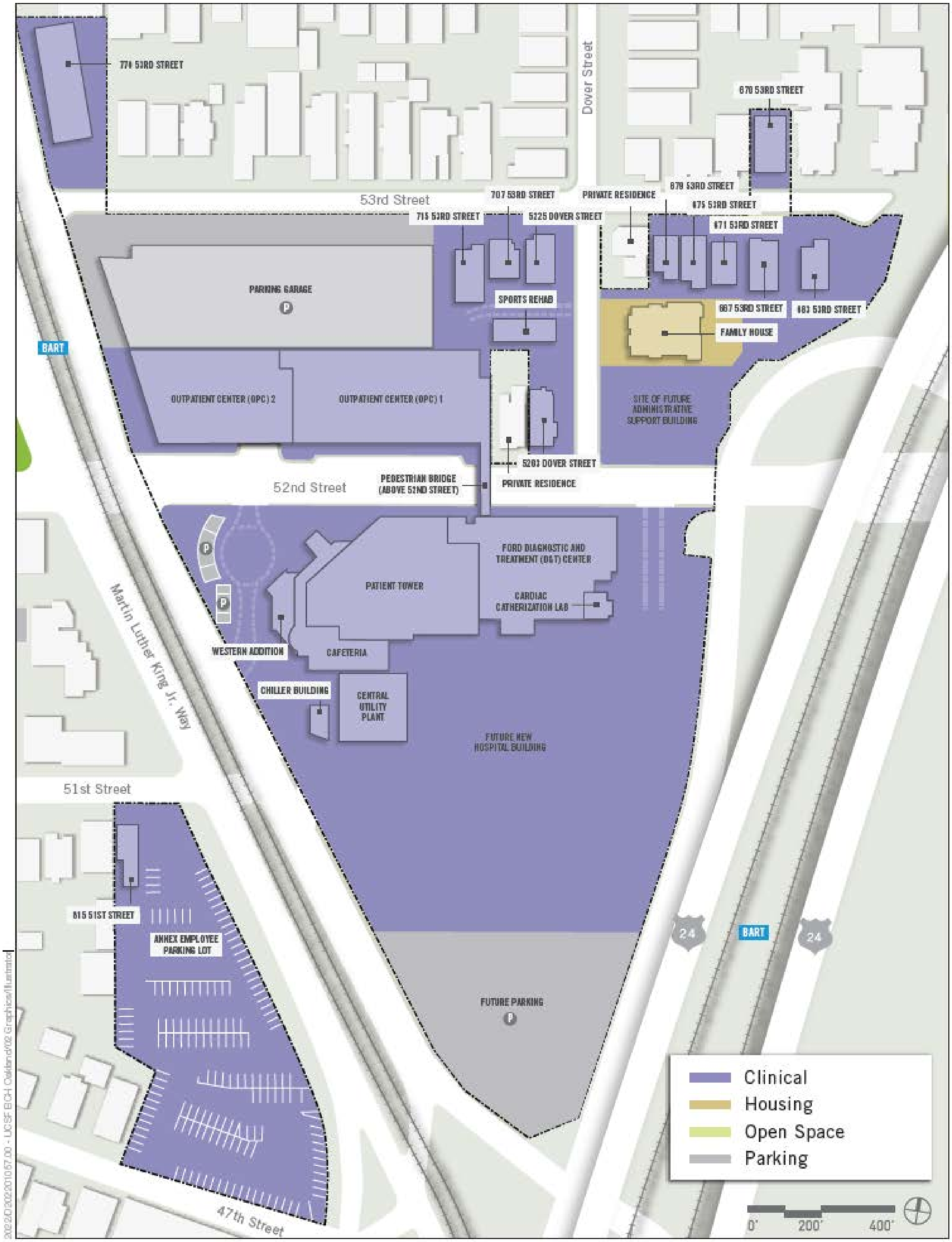
The proposed LRDP amendment would also incorporate certain text changes to the UCSF 2014 LRDP, including context for the UCSF BCH campus site in Chapter 2, *Planning Context*; and adding the UCSF BCH Oakland campus site in a new Chapter 9, *Benioff Children's Hospital Oakland,* including existing setting discussion, site-specific objectives, plan elements (for land use; open space; circulation, transportation and parking; utilities and infrastructure; and population).

Proposed site-specific objectives for UCSF BCH Oakland campus site to be incorporated into the proposed LRDP amendment, include the following:

A. Modernize the campus to ensure compliance with regulatory requirements and improve the level of services to patients and their families.
B. Address seismically compromised and obsolete buildings.
C. Develop new facilities to accommodate programmatic needs.

Figure 3-27 illustrates the proposed UCSF BCH Oakland campus functional zone map, reflecting the planned predominant land uses for the campus site.

The proposed LRDP amendment would also add a discussion of the smaller BCH Oakland owned sites within a renumbered Chapter 10, *Smaller Owned Sites* in the UCSF 2014 LRDP.



SOURCE: UCSF, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 3-27
Proposed Functional Zones at UCSF BCH Oakland Campus Site

2022\D202201057.00 - UCSF BCH Oakland\02 Graphics\Illustrator

3.8 References

Blue Cottage, 2023. *BCH Oakland Campus Population Modeling*. September, 2023.

SmithGroup, CannonDesign 2023, *UCSF Benioff Children's Hospital, Oakland, Basis of Design Report*. August 2023.

UCSF, 2023. *Why the A/B Wing Cannot be Preserved for Clinical Use*. November 21, 2023.

Woodreeve Consulting, 2023. *Draft Preliminary Arborist Report, Benioff Children's Hospital, Oakland, CA*. July, 2023.

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CHAPTER 4

Environmental Setting, Impacts, and Mitigation Measures

4.0 Introduction to the Environmental Analysis

This chapter describes the environmental setting, assesses impacts, and identifies measures that would avoid or lessen the severity of the significant impacts of the proposed NHB Project. This section, Section 4.0, *Introduction to the Environmental Analysis*, outlines the issues analyzed in this chapter, describes the overall approach to the impact analysis, explains the significance determinations and terminology used in the impact analysis, and provides the basis for the cumulative impact analysis.

4.0.1 Definition of Terms Used in the EIR

This EIR uses a number of terms that have specific meaning under CEQA. Among the most important of the terms used in the EIR are those that refer to the significance of environmental impacts. The following terms are used to describe environmental effects of the NHB Project:

- **Significance Criteria:** The criteria or thresholds used by the University, as lead agency under CEQA, to determine whether the magnitude of an adverse, physical, environmental impact would be considered significant. In determining the level of significance, the analysis recognizes that the proposed NHB Project must comply with relevant and applicable federal, State, or regional laws and regulations which are regularly enforced through building codes and standards and/or other means.
- **Significant Impact:** An impact is considered significant if the proposed NHB Project *could* result in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of a project-related or cumulative physical change from baseline conditions, compared to a specified significance criterion. A significant impact is defined as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the Project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."[7]
- **Less-than-Significant Impact:** An impact is considered less than significant when the impact caused by the proposed NHB Project would not exceed the applicable significance criterion.
- **Less-than-Significant Impact with Mitigation:** An impact is considered less than significant with mitigation if the proposed NHB Project could result in a substantial adverse change

[7] CEQA *Guidelines* Section 15382.

when evaluated with respect to one or more significance criteria, but feasible mitigation is available that would effectively reduce the impact to below the significance criterion.

- **Significant and Unavoidable Impact:** Significant impacts resulting from implementation of the NHB Project that cannot be feasibly avoided or mitigated to a less-than-significant level, that is, to a level below the applicable significance criterion.
- **Cumulative Impact:** Under CEQA, a cumulative impact refers to "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."[8] A significant cumulative impact is one in which the cumulative adverse physical environmental effect would exceed the applicable significance criterion and the contribution of the proposed project would be "cumulatively considerable."[9] If the contribution of the project to a significant cumulative impact is less than considerable, the cumulative impact of the project is considered less than significant.
- **Mitigation Measure:** A mitigation measure is a feasible action that could be taken that would avoid or reduce the magnitude of a significant impact. Section 15370 of the *CEQA Guidelines* defines mitigation as:
  a) Avoiding the impact altogether by not taking a certain action or parts of an action;
  b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
  c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
  e) Compensating for the impact by replacing or providing substitute resources or environments.
- **Feasible:** Under CEQA, the term feasible means "means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."[10]

4.0.2 Scope of Analysis

This EIR includes a project-level analysis of the environmental impacts of the proposed New Hospital and related improvements. The analysis at the project-level is intended to provide sufficient detail to permit project approval and implementation following certification of the NHB Project Final EIR.

Analytical Horizon

The NHB Project is anticipated to begin operations in 2030 with buildout of the Project in 2032. As a conservative approach, this EIR evaluates the foreseeable impacts of the NHB Project buildout in Year 2030. This EIR also evaluates foreseeable cumulative impacts of the NHB Project

8 CEQA *Guidelines* Section 15355.
9 CEQA *Guidelines* Section 15130(a).
10 CEQA *Guidelines* Section 15364.

through Year 2040, consistent with the Alameda County Transportation Commission Countywide Travel Demand Model planning horizon.

Aesthetics and Parking Analysis

CEQA Statute Section 21099(d) states that "Aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."[11] Accordingly, aesthetics and parking are not considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

a. The project is in a transit priority area;[12]
b. The project is on an infill site;[13] and
c. The project is residential, mixed-use residential, or an employment center.[14]

The proposed Project meets each of the above three criteria because it (1) is within a transit priority area, as it is located within one-half mile of the MacArthur Bay Area Rapid Transit (BART) Station at 555 40th Street, which meets the definition of Major Transit Stop pursuant to CEQA *Statute* 21064.3; (2) is located on an infill site, as defined by CEQA *Statute* 21099(a)(4), as the campus site is an urban area that has been previously developed; and (3) includes a hospital that would substantially meet the definition of an employment center pursuant to CEQA *Statute* 21099(a)(1). Thus, this EIR does not consider aesthetics and the adequacy of parking as significant impacts of the project under CEQA.

However, please refer to Section 4.3, *Cultural Resources*, for a discussion of potential Project aesthetic effects relative to historical resources.

Transportation Analysis

CEQA Guidelines Section 15064.3(b)(1) states that "Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact." Accordingly, a project's transportation impacts are presumed to be less than significant if the project meets either of the following criteria:

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11 Refer to CEQA *Statute s*ection 21099(d)(1).

12 CEQA *Statute* 21099(a)(7) defines a "transit priority area" as an area within 0.5 mile of an existing or planned major transit stop. A "major transit stop" is defined in CEQA *Statute* 21064.3 as a site containing any of the following: an existing rail or bus rapid transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

13 CEQA *Statute* 21099(a)(4) defines an "infill site" as a lot located within an urban area that has been previously developed, or a vacant site where at least 75 percent of the perimeter of the site adjoins, or is *separated* only by an improved public right-of-way from, parcels that are developed with qualified urban uses.

14 CEQA *Statute* 21099(a)(1) defines an "employment center" as a project located on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

a. The project is located within one-half mile of an existing major transit stop; or

b. The project is located within one-half mile of a stop along an existing high quality transit corridor[15].

The proposed Project meets the first criterion because it is located within a one-half mile of a major transit stop as defined in CEQA *Statutes* 21064.3 – namely, the MacArthur BART Station (see discussion under Aesthetics and Parking Analysis, above). The Project also meets the second criterion because it is located within one-half mile of Telegraph Avenue, which is an existing high-quality transit corridor as defined in CEQA *Statutes* 21155(b). Accordingly, the Project's transportation impacts are presumed to be less than significant.

Nevertheless, the public and decision-makers may be interested in information pertaining to the transportation effects of the proposed Project, and may desire that such information be provided as part of the environmental review process. Therefore, this EIR provides an assessment of the Project's less than significant transportation impacts in Section 4.11, *Transportation.*

Effects of the Environment on the Project

In 2015 the California Supreme Court held that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 386. The Supreme Court explained that, where existing hazards exist, an agency is only required to analyze the potential impact of such hazards on future residents if the project would exacerbate those existing environmental hazards or conditions. Thus, with respect to such issues as geologic and seismic hazards, exposure to existing levels of air pollution and noise, and the like, CEQA does not require consideration of the effects of bringing a new population into an area where such hazards exist, as long as the project itself would not increase or otherwise affect the conditions that create those hazards.

Economic and Social Effects

Under CEQA, economic and social effects by themselves are not considered to be significant impacts, and are relevant only insofar as they may serve as a link in a chain of cause and effect that may connect the proposed project with a physical environmental effect, or they may be part of the factors considered in determining the significance of a physical environmental effect.[16] In addition, economic and social factors may be considered in the determination of feasibility of a mitigation measure or an alternative to the proposed project.[17] As such, the potential effect of the NHB Project on economic and social issues, in and of themselves, such as tax revenues, crime, the cost of public services, or property values are not part of this EIR. That being said, UCSF and

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15 CEQA *Statute* 21155(b) defines a high quality transit corridor as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

16 CEQA *Guidelines* Section 15131.

17 CEQA *Guidelines* Section 15364.

the Regents may evaluate a wide range of factors, including social or economic effects, in its consideration of the merits of the proposed NHB Project.

4.0.3 Organization of the Impact Analysis

Chapter 4 is organized as follows and focuses on the environmental resource topics listed below:

- 4.1 Air Quality
- 4.2 Biological Resources
- 4.3 Cultural Resources, including Tribal Cultural Resources
- 4.4 Energy
- 4.5 Geology and Soils
- 4.6 Greenhouse Gas Emissions
- 4.7 Hazards and Hazardous Materials
- 4.8 Hydrology and Water Quality
- 4.9 Land Use and Planning
- 4.10 Noise and Vibration
- 4.11 Transportation
- 4.12 Utilities and Service Systems
- 4.13 Effects Found Not to Be Significant

Each environmental topic discussion includes these main subsections:

- *Environmental Setting*, which includes a description of the existing environmental setting;
- *Regulatory Framework*, including relevant University plans and policies, and federal, State, and local laws, regulations, and policies; and
- *Impacts and Mitigation Measures*, which describes the (1) significance criteria; (2) analysis methodology, (3) potential project-specific and cumulative impacts; and (4) proposed feasible measures that would eliminate or reduce the severity of significant project-specific and/or cumulative impacts.

This EIR identifies all environmental impacts with an alpha-numeric designation that corresponds to the environmental resource topic (e.g., Air Quality impacts are labeled AIR, Biological Resources impacts are labeled BIO etc.). The resource identifier is followed by a number that indicates the sequence in which the impact statement occurs within the section. For example, “Impact AIR-1” is the first (i.e., “1”) air quality impact identified in the EIR. All impact statements are presented in bold text. The significance of the impacts after implementation of mitigation measures is stated in parentheses immediately following the impact statement (further discussed below).

Each mitigation measure is labeled and numbered to correspond with the impact that it addresses. Where multiple mitigation measures address a single impact, each mitigation measure is numbered sequentially. For example, “Mitigation Measure AIR-1a and Mitigation Measure AIR-1b” are identified to address the first air quality impact (i.e., “Impact AIR-1”). All mitigation measure statements are presented in bold text.

4.0.4 Section Structure

Each environmental resource section follows a set structure, as described below.

Introduction

This subsection summarizes the applicable topic analysis and its relevance to the proposed NHB Project.

Environmental Setting

According to Section 15125 of the *CEQA Guidelines*, an EIR must include a description of the existing physical environmental conditions in the vicinity of the project to provide the "baseline condition" against which project-related impacts are compared. Normally, the baseline condition is the physical condition that exists when the Notice of Preparation ("NOP") is published (in this case, mid-2023). However, the *CEQA Guidelines* and applicable case law recognize that the date for establishing an environmental baseline cannot always be rigid. Physical environmental conditions may vary over a range of time periods; thus the use of environmental baselines that differ from the date of the NOP may be reasonable and appropriate when conducting the environmental analyses. Some sections rely on a variety of data to establish an applicable baseline, as described in those sections.

Regulatory Framework

The regulatory setting presents relevant information about University plans and policies, and federal, State, regional, and/or local laws, regulations, ordinances, plans, policies and standards that pertain to the environmental resources addressed in each section.

Applicable University documents presented in the Regulatory Framework sections of this EIR include, but are not limited to, the UCSF 2014 LRDP, University of California (UC) Policy on Seismic Safety, UC *Policy on Sustainable Practices*, UCSF Physical Design Framework, and UC Strategic Energy Plan. With respect to the UCSF 2014 LRDP, applicable land use objectives are presented, and for informational purposes, relevant Community Planning Principles are also discussed.

Significance Criteria

According to *CEQA Guidelines* Section 15382, a significant effect on the environment means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project." Significance criteria are identified for each environmental issue area in each resource section. The environmental criteria and considerations applied to determine the significance of NHB Project-related changes in the environment are based on the *CEQA Guidelines* Appendix G and additional criteria used in the UCSF 2014 LRDP Final EIR, as applicable. The significance criteria serve as benchmarks for determining if proposed activities or conditions would result in a significant adverse environmental impact when evaluated against the baseline conditions.

Approach to Analysis

Each section describes the analytical methods and key assumptions used to evaluate effects of the proposed NHB Project.

Impacts and Mitigation Measures

The EIR evaluates the environmental consequences and potentially significant impacts that would result from implementation of the proposed NHB Project. The impacts identified are compared with predetermined significance criteria (discussed above), and classified according to significance categories discussed above.

To the extent the residual impact may still be significant even after implementation of the conditions, laws and regulations, potentially feasible mitigation measures are identified which would eliminate or substantially reduce the severity of the impact. The effectiveness of a mitigation measure is determined by evaluating the residual impact remaining after its application. Those impacts meeting or exceeding the impact significance criteria after potentially feasible mitigation measures are incorporated are identified as residual impacts that remain significant and unavoidable. Implementation of more than one mitigation measure may be needed to reduce an impact below a level of significance.

Cumulative Impact Analysis

An analysis of cumulative impacts follows the project-specific impacts and mitigation measures evaluation in each section. A cumulative impact consists of an impact that is created as a result of the combination of the impact of the project evaluated in the EIR together with the impacts from other past, present and reasonably foreseeable projects causing related impacts.[18]

As noted above, where a cumulative impact is significant when compared to baseline conditions, the analysis must address whether the project's contribution to the significant cumulative impact is "considerable." If the contribution of the project is considerable, then the EIR must identify potentially feasible measures that could avoid or reduce the magnitude of the project's contribution to a less-than-considerable level. If the project's contribution is not considerable, the project's cumulative impact is considered less than significant and no mitigation for the project's contribution is required.[19]

The geographic scope of the cumulative impact analysis varies depending upon the specific environmental issue area being analyzed. The geographic scope defines the geographic area within which a project may contribute to a specific cumulative impact. Therefore, past, present, and future reasonably foreseeable projects within the defined geographic area for a given cumulative issue must be considered. The cumulative impact analysis in each technical section includes a description of the cumulative analysis methodology and the geographic or temporal

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[18] CEQA *Guidelines* Section 15355.

[19] CEQA *Guidelines* Section 15130(a)(3).

context in which the cumulative impact is analyzed (e.g., the Bay Area Air Basin, other activity concurrent with NHB Project construction, etc.).

Consistent with *CEQA Guidelines* Section 15130(b), the cumulative impact analysis considers the NHB Project's effects in combination with the projections contained within previously approved planning documents and forecasting models, including but not limited to the City of Oakland *General Plan*, the Alameda County Transportation Commission Countywide Travel Demand Model, East Bay Municipal Utility District *Urban Water Management Plan 2020*, and regional planning documents from the Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), as well as applicable associated environmental review documents.

In addition, consistent with *CEQA Guidelines* Section 15130(b), the cumulative impact analysis also considers other known or reasonably foreseeable projects that could combine with potential impacts from implementation of the NHB Project within the local geographic area. These include the following:

- **UCSF Cumulative Projects within or adjacent to the BCH Oakland Campus Site.** Certain projects that were previously proposed at the BCH Oakland campus site under the 2015 CHRCO CMP and analyzed in the CHRCO CMP Project FEIR will be implemented in the near-term.
  - *Administrative Support Building (ASB) Project.* The ASB Project will be located at the northeast corner of 52nd and Dover Street intersection at the site currently occupied by 5212 Dover Street and 682 and 688 52nd Street residential structures. Construction of the ASB Project will begin in mid-2024 and be completed by early 2026. ASB Project improvements will include:
    - construction of new 31,500 gross square foot, 3-story ASB
    - demolition of residential structures at 5212 Dover and 665 53rd Street
    - relocation of residential structures from 682 52nd Street and 688 52nd Street to 665 53rd Street
    - construction of service vehicle turnaround at ASB service driveway off 52nd Street
    - select tenant improvements in UCSF BCH-owned or leased facilities, including outpatient buildings, support, and administrative spaces
  - *BCH Oakland Infrastructure Project.* The BCH Oakland Infrastructure Improvements Project will demolish and relocate power lines and a retaining wall; disconnect utilities and exiting connections to the A/B and B/C Wings; and renovate space in existing owned and leased space. The project advances seismic compliance improvements and implements site work that would need to be completed before construction of the future and independent NHB Project. Components include:
    - *Caltrans Retaining Wall Relocation:* A Caltrans retaining wall (located within the former Caltrans right-of-way, now part of the NHB Project site) of varying height extends along a section of the base of the State Route 24 embankment. This retaining wall and a portion of the existing slope would be removed, as would two trailers located adjacent to the retaining wall, and a new retaining wall would be constructed

along the eastern boundary of the NHB Project site on Caltrans right-of-way. The project is planned to be implemented August 2024 through May 2025.

- *PG&E Duct Bank Relocation.* An underground electrical duct bank currently runs within a Pacific Gas and Electric Company (PG&E) easement that extends east-west through the central part of the NHB Project site. Under this relocation project, the duct bank would be rerouted around the southern tip of the campus site. Specifically, the duct bank would be extended south within the Martin Luther King (MLK) Jr. Way right-of-way just outside the NHB Project site west boundary to the southern tip of the campus property, and then extended north along the eastern boundary of the NHB Project site just inside the planned retaining wall. The project is planned to be implemented August 2024 through May 2025
- *Various Building Renovations*. Renovations of existing space to accommodate relocation of building occupants from the UCSF BCH Oakland campus site would occur at the Outpatient Center, 5700 Martin Luther King Jr. Way, and 4242 Broadway. All work would occur within the interior of these buildings. The project is planned to be implemented February 2024 through December 2025.
- *A/B and B/C Wings Utility Separation and Exiting Updates.* Following the relocation of the departments currently housed in the A/B and B/C Wings to other renovated space, the utilities serving these buildings would be disconnected. In addition, interior paths of travel would be updated to remove all connections between the A/B and B/C Wings and adjacent structures. The project is planned to be implemented August 2024 through May 2025.

UCSF will also implement the following cumulative project by early 2026:

– *Replacement of Fuel Oil Underground Storage Tank (UST).* An existing fuel oil UST is located within the NHB Project site. This tank would be removed in compliance with State UST regulations and a new temporary12,000-gallon above ground fuel oil tank would be installed on the west side of the Project site near MLK Jr. Way. The project is planned to be implemented in early 2024 and completed in early 2025.

- **Off-site Cumulative Projects within the UCSF BCH Oakland Campus Site Vicinity:**

– *4328 Martin Luther King Jr. Way Residential Project.* The City of Oakland Major Projects List indicates there is one project located within 1,000 feet of the BCH Oakland campus site. The project includes demolition of existing residential structures containing four units, and construction of a 6-story, 57-unit residential building on three contiguous lots. (City of Oakland PLN17398/B2102751).

– *MLK Jr. Way Roadway Improvement Plan.* The City of Oakland Department of Transportation plans to implement a number of improvements to MLK Jr. Way. This includes, but not limited to:

- Reduce number of travel lanes from 3 to 2 in each direction
- Add protected bicycle lanes
- Add protected bike lanes on 52nd Street at intersection approaches
- Add protected corners northeast/southwest corners of 52nd Street and MLK Jr Way
- Add crosswalk and a pedestrian hybrid beacon on MLK Jr Way at 51st Street
- Repaving MLK Jr. Way from 47th Street to 61st Street as part of the City's Complete Streets Paving Program

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4.1 Air Quality

This section describes and evaluates the potential for the construction and operation of the New Hospital Building (NHB) Project at the UCSF Benioff Children's Hospital (BCH) Oakland campus site to result in significant air quality impacts. This section discusses the existing air quality conditions in the Project area, presents the regulatory framework for air quality management, and analyzes the potential for the proposed Project to significantly affect existing air quality conditions, both regionally and locally, due to Project activities that emit criteria air pollutants and toxic air contaminants (TACs). It analyzes the types and quantities of emissions that would be generated on a temporary basis from proposed construction activities as well as those generated over the long term from the operation of the Project. The analysis determines whether those emissions are significant in relation to applicable air quality standards and identifies feasible mitigation measures for significant adverse impacts. The section also includes an analysis of cumulative air quality impacts. The impacts of greenhouse gas (GHG) emissions resulting from the Project are presented and analyzed in Section 4.6, *Greenhouse Gas Emissions*.

The analysis in this section is based on a review of existing air quality conditions in the region and air quality regulations administered by the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the Bay Area Air Quality Management District (BAAQMD). The analysis utilizes methodologies set forth in the most recent BAAQMD *CEQA Air Quality Guidelines* (BAAQMD, 2023a). The analysis in this section also summarizes the findings of a *Health Risk Assessment* prepared in support of this EIR.

4.1.1 Environmental Setting

Climate and Meteorology

Climate and meteorological conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The Project site is located in the City of Oakland and is within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB or "Bay Area"). The SFBAAB encompasses the nine-county region including all of Alameda, Contra Costa, Santa Clara, San Francisco, San Mateo, Marin and Napa counties, and the southern portions of Solano and Sonoma counties. The climate of the Bay Area is determined largely by a high-pressure system that is often present over the eastern Pacific Ocean off the West Coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing an increased number of storms systems to pass through the region. During summer and early fall, when fewer storms pass through the region, emissions generated within the Bay Area tend to accumulate due to more stable conditions. The combination of abundant sunshine under the restraining influences of topography and subsidence inversions creates conditions that are conducive to the formation of photochemical pollutants, such as ground-level ozone and secondary particulates, including nitrates and sulfates.

More precisely, the Project area lies within the Northern Alameda and Western Contra Costa Counties climatological subregion of the SFBAAB. This subregion extends from Richmond to

San Leandro with San Francisco Bay as its western boundary, and its eastern boundary defined by the Oakland-Berkeley Hills. In this subregion, marine air traveling through the Golden Gate and across San Francisco and the San Bruno Gap (a gap in the Coastal Range between the ocean and the San Francisco Airport) is a dominant weather factor. Average wind speeds vary from season to season with the strongest average winds occurring during summer and the lightest average winds during winter. Summer temperatures in Oakland average at a low of 57°F and a high of 72°F, while winter temperatures average at a low of 46°F and a high of 59°F. Rainfall is highly variable and confined almost exclusively to the "wet season" which extends from early November to mid-April. Oakland averages 24 inches of precipitation annually, but because much of the area's rainfall is derived from the fringes of mid-latitude storms, a shift in the annual storm track of a few hundred miles can mean the difference between a very wet year and near drought conditions.

Ambient Air Quality – Criteria Air Pollutants

As required by the 1970 federal Clean Air Act, the USEPA initially identified six air pollutants that are pervasive in urban environments and for which State and federal health-based ambient air quality standards have been established. USEPA calls these pollutants "criteria air pollutants" because the agency regulates them by developing specific public-health-based and welfare-based criteria as the basis for setting permissible levels. Ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead are the six criteria air pollutants originally identified by the USEPA. Since then, subsets of particulate matter have been also identified for which permissible levels have been established. These include particulate matter of 10 microns in diameter or less (PM_{10}) and particulate matter of 2.5 microns in diameter or less ($PM_{2.5}$).

BAAQMD is the regional agency with jurisdiction for regulating air quality within the nine - county SFBAAB. The region's air quality monitoring network provides information on ambient concentrations of criteria air pollutants at various locations in the SFBAAB. **Table 4.1-1** presents a five-year summary for the period 2018 to 2022 of the highest annual criteria air pollutant concentrations, collected at the West Oakland air quality monitoring station operated and maintained by BAAQMD at 1100 21st Street approximately 1.8 miles southwest of the Project site. Table 4.1-1 also compares measured pollutant concentrations with the most stringent applicable ambient air quality standards (State or federal).

Ozone

Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG, also sometimes referred to as volatile organic compounds or VOC by some regulating agencies) and nitrogen oxides (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are combustion processes (including fuel combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In the Bay Area, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.

TABLE 4.1-1
SUMMARY OF AIR QUALITY MONITORING DATA IN THE PROJECT AREA (2018–2022)

Pollutant	Most Stringent Applicable Standard	Number of Days Standards Were Exceeded and Maximum Concentrations Measured[a]				
		2018	2019	2020	2021	2022
Ozone						
- Maximum 1-Hour Concentration (ppm)		0.063	**0.101**	0.084	0.067	0.054
- Days 1-Hour Standard Exceeded	>0.09 ppm[b]	0	1	0	0	0
- Maximum 8-Hour Concentration (ppm)		0.050	**0.072**	0.056	0.046	0.041
- Days 8-Hour Standard Exceeded	>0.07 ppm[b, c]	0	1	0	0	0
Carbon Monoxide (CO)						
- Maximum 1-Hour Concentration (ppm)		3.6	2.4	ND	ND	ND
- Days 1-Hour Standard Exceeded	>20 ppm[b]	0	0	ND	ND	ND
- Maximum 8-Hour Concentration (ppm)		3.1	1.7	ND	ND	ND
- Days 8-Hour Standard Exceeded	>9 ppm[b]	0	0	ND	ND	ND
Fine Particulate Matter ($PM_{2.5}$)						
- Maximum 24-Hour Concentration (μg/m^3)		**169.2**	29.3	**159.7**	25.4	33.8
- Days 24-Hour Standard Exceeded[d]	>35 μg/m^3	14	0	8	0	0
- State Annual Average (μg/m^3)	>12 μg/m^3 [b,c]	**14.4**	7.8	10.3	7.5	8.1
- National Annual Average (μg/m^3)	>12.0 μg/m^3 [b,c]	**14.3**	7.7	10.2	7.4	8.1
Nitrogen Dioxide (NO_2)						
- Maximum 1-Hour Concentration (ppm)		0.076	0.050	0.048	0.050	0.044
- Days 1-Hour Standard Exceeded	>0.1 ppm[c]	0	0	0	0	0

NOTES:

Bold values are in excess of applicable standard; ppm = parts per million; μg/m^3 = micrograms per cubic meter; ND = No data or insufficient data.

a. Number of days exceeded is for all days in a given year.
b. State standard, not to be exceeded.
c. Federal standard, not to be exceeded.
d. $PM_{2.5}$ is based on a sampling schedule of one out of every 12 days, for a total of approximately 30 samples per year.

SOURCE: CARB, 2023a

Table 4.1-1 shows that, between 2018 and 2022, the most stringent applicable standards for ozone (State 1-hour standard of 0.09 parts per million [ppm] and the federal 8-hour standard of 0.07 ppm) were exceeded only once in 2019 at the West Oakland station.

Carbon Monoxide (CO)

CO is an odorless, colorless gas that is usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal. As shown in Table 4.1-1, the more stringent State CO standards were not exceeded from 2018 through 2019. Monitoring of CO was discontinued after 2019. Measurements of CO from 2019 indicate hourly maximums ranged between 6 percent to 13 percent of the more stringent State standard, and maximum 8-hour CO levels that were approximately 11 percent to 18 percent of the allowable 8-hour standard.

Particulate Matter (PM10 and PM2.5)

PM is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from human-made and natural sources. PM is measured in two size ranges: PM_{10} and $PM_{2.5}$. In the Bay Area, motor vehicles generate about one-half of the SFBAAB's PM emissions through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulate emissions. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to CARB, studies in the United States and elsewhere "have demonstrated a strong link between elevated PM levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks." Studies of children's health in California have demonstrated that PM pollution "may significantly reduce lung function growth in children" (CARB, 2007). CARB also reports that statewide attainment of PM standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits and avoid hundreds of thousands of episodes of respiratory illness in California (CARB, 2007). Among the criteria air pollutants that are regulated, PM appears to represent a serious ongoing health hazard. $PM_{2.5}$ is of particular concern because epidemiologic studies have demonstrated that people who live near freeways, especially people who live within 500 feet of freeways or high-traffic roadways, have poorer health outcomes. CARB recommends avoiding siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day (CARB, 2005).

As presented above in Table 4.1-1, the State 24-hour $PM_{2.5}$ standard was exceeded on 22 monitored occasions from 2018 through 2022 at the West Oakland station, all of which occurred during 2018 and 2020 and were likely the result of smoke from wildfires throughout California during those years. The State and federal annual average standards for $PM_{2.5}$ were exceeded in 2018. PM_{10} is not monitored at the monitoring stations located in Oakland, as BAAQMD is concentrating its efforts on reduction of $PM_{2.5}$.

Nitrogen Dioxide (NO2)

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are its main sources. Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of the air on high pollution days, especially in conjunction with high ozone levels. The current State one-hour standard for NO_2 (0.18 ppm) is being met in Oakland. In 2010, the USEPA set the current federal one-hour NO_2 standard (0.10 ppm) (see *Regulatory Framework* below). Currently, the SFBAAB is designated as an attainment area for the NO_2 standard (USEPA, 2023a). As shown in Table 4.1-1, this new federal standard was not exceeded at the West Oakland station from 2018 through 2022.

The USEPA also established requirements for a new monitoring network to measure NO_2 concentrations near major roadways in urban areas with a population of 500,000 or more. Sixteen new monitoring sites near roadways were required in California, three of which were identified for the Bay Area to be located in Berkeley, Oakland, and San Jose. The Oakland station commenced operation in February 2014, the San Jose station commenced operation in March 2015, and the Berkeley station commenced operation in July 2016. The new monitoring data has not resulted in a need to change area attainment designations.

Sulfur Dioxide (SO_2)

SO_2 is a colorless, acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease (BAAQMD, 2017a). Pollutant trends suggest that the SFBAAB currently meets and will continue to meet the State standard for SO_2 for the foreseeable future.

In 2010, the USEPA set a new one-hour SO_2 standard (see *Regulatory Framework*, below). The USEPA initially designated the SFBAAB as an attainment area for SO_2. Similar to the new federal standard for NO_2, the USEPA established requirements for a new monitoring network to measure SO_2 concentrations beginning in January 2013 (USEPA, 2010a). No additional SO_2 monitors were required for the Bay Area because the SFBAAB has never been designated as non-attainment for SO_2 and no state implementation plans or maintenance plans have been prepared for SO_2.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses, cars), smelters (metal refineries), and manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has a range of adverse neurotoxic health effects, which put children at special risk. Some lead-containing chemicals cause cancer in animals. Lead levels in the air have decreased substantially since leaded gasoline was eliminated.

Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the USEPA strengthened the national ambient air quality standard for lead by lowering it from 1.50 $\mu g/m^3$ to 0.15 $\mu g/m^3$ on a rolling three-month average. The USEPA revised the monitoring requirements for lead in December 2010 (USEPA, 2010b). These requirements focus on airports and large urban areas resulting in an increase in 76 monitors nationally. Lead monitoring stations in the Bay Area are located at Palo Alto Airport, Reid-Hillview Airport (San Jose), and San Carlos Airport. Non-airport locations for lead monitoring are in Redwood City and San Jose.

Air Quality Index

The USEPA developed the Air Quality Index (AQI) scale to make the public health impacts of air pollution concentrations easily understandable. The AQI, much like an air quality "thermometer," translates daily air pollution concentrations into a number on a scale between 0 and 500. The numbers in the scale are divided into six color-coded ranges, with numbers 0 through 500 as outlined below.

- Green (0-50) indicates “good” air quality. No health impacts are expected when air quality is in the green range.
- Yellow (51-100) indicates air quality is “moderate.” Unusually sensitive people should consider limiting prolonged outdoor exertion.
- Orange (101-150) indicates air quality is “unhealthy for sensitive groups.” Active children and adults, and people with respiratory disease, such as asthma, should limit outdoor exertion.
- Red (151-200) indicates air quality is “unhealthy.” Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.
- Purple (201-300) indicates air quality is “very unhealthy.” Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.
- Maroon (301-500) indicates air quality is “hazardous.” This would trigger health warnings of emergency conditions, and the entire population is more likely to be affected.

The AQI numbers refer to specific amounts of pollution in the air. They are based on the federal air quality standards for ozone, CO, NO_2, SO_2, PM_{10}, and $PM_{2.5}$. In most cases, the federal standard for these air pollutants corresponds to the number 100 on the index chart. Thus, if the concentration of any of these pollutants rises above its respective standard, the air quality can be unhealthy for the public. In determining the air quality forecast, local air districts, including the BAAQMD, use the anticipated concentration measurements for each of the major pollutants, convert them into index numbers, and determine the highest index for each zone in a district.

Readings below 100 on the AQI scale would not typically affect the health of the general public. Levels above 300 rarely occur in the United States, and readings above 200 have not occurred in the SFBAAB in decades, with the exception of the October 2017 and November 2018 wildfires north of San Francisco and the August/September 2020 complex wildfires that occurred throughout the SBFBAAB.

Wildfires appear to be occurring with increasing frequency in California and the Bay Area as climate changes. Since 2000, 18 of the State’s 20 largest wildfires and 18 of the State’s 20 most destructive fires on record have occurred (California Department of Forestry and Fire Protection [CAL FIRE], n.d.). As a result of these fires in Bay Area counties (Napa and Sonoma) and counties north and east of the Bay Area (e.g., Butte, Lassen, Plumas, and Shasta), the AQI in the Bay Area reached the “very unhealthy” and “hazardous” designations, ranging from values of 201 to above 350. During those periods, the air district issued “Spare the Air” alerts and recommended that individuals stay inside with windows closed and refrain from significant outdoor activity.

AQI statistics over recent years indicate that air quality in the SFBAAB is predominantly in the "Good" or "Moderate" categories and healthy on most days for most people. Historical data indicate that Alameda County experienced air quality in the red level (unhealthy) on 12 days between 2019 and 2021. As shown in **Table 4.1-2**, the County had a total of 25 orange-level (unhealthy or unhealthy for sensitive groups) days between 2019 and 2021. A number of these days are attributable to the increasing frequency of wildfires. This table also shows that Alameda County experienced one purple level (very unhealthy) day in between 2019 and 2021.

TABLE 4.1-2
AIR QUALITY INDEX STATISTICS FOR ALAMEDA COUNTY

Air Quality Index Statistics for Alameda County	Number of Days by Year		
	2019	2020	2021
Unhealthy for Sensitive Groups (Orange)	8	8	9
Unhealthy (Red)	0	11	1
Very Unhealthy (Purple)	0	1	0

SOURCE: USEPA, 2023b

Ambient Air Quality - Toxic Air Contaminants

In addition to criteria air pollutants, individual projects and sources emit TACs, which are a diverse group of air pollutants that may cause chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects on human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Thus, individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs are not subject to ambient air quality standards but are regulated by BAAQMD using a risk-based approach to determine which sources and which pollutants to control as well as the degree of control. A *health risk assessment* (HRA) is an analysis that estimates human health exposure to toxic substances, and when considered together with information regarding the toxic potency of the substances, a HRA provides quantitative estimates of health risks.[20] Health effects from carcinogenic TACs are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to TAC concentrations over a 30-year period will contract cancer, based on the use of standard risk-assessment methodology. The maximally exposed individual (MEI) represents the worst–case risk estimate, based on a theoretical person continuously exposed for a lifetime at the point of highest compound concentration in the air. This is a highly conservative assumption since most people do not remain at one location all day and on average residents change residences every 11

[20] In general, a health risk assessment is required if BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then required to prepare a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

to 12 years. In addition, this methodology assumes that residents are experiencing outdoor concentrations of TACs for the entire exposure period.

Exposures to fine PM ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and poor lung development in children, and other health effects, such as hospitalization for cardiopulmonary disease (SFDPH, 2008). Diesel engines emit a complex mixture of pollutants, including very small carbon particles, or "soot" coated with numerous organic compounds, known as diesel particulate matter (DPM). CARB identified DPM as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans (CARB, 1998). The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In addition to monitoring criteria pollutants, both BAAQMD and CARB operate TAC monitoring networks in the SFBAAB. These stations measure 10 to 15 TACs, depending on the specific station. The TACs selected for monitoring are those that traditionally have been found in the highest concentrations in ambient air and therefore tend to produce the most significant risk. There are no monitoring stations for TACs within Oakland. The nearest TAC monitoring station is located in Richmond, approximately 9.3 miles northwest of the Project site.

Motor vehicles are responsible for a large share of air pollution, especially in California. Vehicle tailpipe emissions contain diverse forms of particles and gases, and vehicles also contribute to particulates by generating road dust and tire wear. Epidemiologic studies have demonstrated that people living close to freeways or busy roadways have poorer health outcomes, including increased asthma symptoms and respiratory infections, and decreased pulmonary function and poor lung development in children. Air pollution monitoring conducted in conjunction with epidemiologic studies has confirmed that roadway-related health effects vary with modeled exposure to PM and NO_2. In traffic-related studies, the additional noncancer health risk attributable to roadway proximity was seen within 1,000 feet of the roadway and was strongest within 500 feet (CARB, 2005). As a result, CARB recommends that new sensitive land uses not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day. The Project site is located between State Route (SR) 24 and Martin Luther King (MLK) Jr. Way, the former of which has daily traffic volumes exceeding 100,000 vehicles.

Diesel Particulate Matter (DPM)

In addition to “soot” coated with numerous organic compounds, diesel exhaust also contains more than 40 cancer-causing substances, most of which are readily adsorbed onto the soot particles. CARB as well as other agencies, such as the World Health Organization, National Toxicology Program, the USEPA and the National Institute of Occupational Safety and Health have concluded that exposure to diesel exhaust likely causes cancer.

Diesel engine emissions are believed to be responsible for about 70 percent of California's estimated known cancer risk attributable to TACs. In addition, DPM comprises about 8 percent of outdoor $PM_{2.5}$, which is a known health hazard. As a significant fraction of $PM_{2.5}$, DPM contributes to numerous health impacts that have been attributed to PM exposure, including increased hospital admissions, particularly for heart disease, but also for respiratory illnesses, and even premature death. CARB estimates that DPM contributes to approximately 1,400 premature deaths from cardiovascular disease annually in California. Additionally, exposure to diesel exhaust may contribute to the onset of new allergies; a clinical study of human subjects has shown that diesel exhaust particles, in combination with potential allergens, may actually be able to produce new allergies that did not exist previously.

Based on estimated ambient statewide DPM levels in 2012, the current cancer risk is estimated to be 520 new cases of cancer projected to occur per million residents exposed statewide. This estimate was calculated using a unit risk factor of 8.94×10^{-4} $\mu g/m^3$ derived using methodology developed by the California Office of Environmental Health Hazard Assessment and assumes an ambient diesel PM concentration of 0.58 $\mu g/m^3$.

Existing Stationary Sources of Air Pollution in Project Vicinity

BAAQMD's inventory of permitted stationary sources of emissions identifies four permitted stationary sources within the 1,000-foot zone of influence extending out beyond the Project site. These sources, listed in **Table 4.1-3**, are primarily stationary diesel engines for back-up power generators and gasoline dispensing facilities.

TABLE 4.1-3
BAAQMD PERMITTED STATIONARY SOURCES WITHIN 1,000 FEET OF THE NHB PROJECT SITE

Facility ID	Facility Name	Source Details	Facility Address
161	UCSF BCH Oakland	Boilers, generators	747 52nd Street
1941	City of Oakland Environmental Services Division	Generator	463 51st Street
7348	ARCO Gas Dispensing Facility	Gas Dispensing Facility	5131 Shattuck Avenue
7546	76 Branded Gas Station	Gas Dispensing Facility	5425 MLK Jr. Way

SOURCE: BAAQMD, 2023b.

Major Roadways Contributing to Air Pollution in Project Vicinity

SR 24, MLK Jr. Way, Shattuck Avenue, and Telegraph Avenue are the main streets in the local roadway system within the 1,000-foot zone of influence of the Project site that have at least 10,000 vehicles in annual average daily traffic. This traffic contributes to localized concentrations of $PM_{2.5}$, DPM, and other contaminants emitted from motor vehicles near the street level.

Soil Contamination and Naturally Occurring Asbestos

Alameda County is among the identified counties where ultramafic bedrock materials are present and have the potential for the release of naturally occurring asbestos fibers. As discussed in Section 4.7, *Hazards and Hazardous Materials*, according to statewide mapping, the Project site appears to be located outside of any mapped ultramafic bedrock units in Oakland or where reported asbestos occurrences have been mapped. As detailed under Impact HAZ-1, the potential for encountering naturally occurring asbestos hazards at the Project site is determined to be low.

Please also refer to Section 4.7 for a summary of soil contamination and hazardous material release sites recorded in the Project area.

Odorous Emissions

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency and intensity of the source; wind speed and direction; and the sensitivity of receptors. The *CEQA Guidelines* recommends that odor impacts be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources. BAAQMD provides examples of odor sources, which include wastewater treatments plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. In accordance with the recommendations in the BAAQMD CEQA Air Quality Guidelines, the City has mapped known odor sources within its jurisdiction. The Project site is not located within the buffer areas of any of the odor sources mapped by the City in accordance with the BAAQMD factors (City of Oakland, 2010).

Sensitive Receptors

Air quality does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Population subgroups sensitive to the health effects of air pollutants include: the elderly and the young; population subgroups with higher rates of respiratory disease, such as asthma and chronic obstructive pulmonary disease; and populations with other environmental or occupational health exposures (e.g., indoor air quality) that affect cardiovascular or respiratory diseases. BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities. Workers are protected by the Occupational Safety and Health (OSHA) regulations that all employers are required to follow to ensure the health and well-being of their employees. However, BAAQMD advises that lead agencies consider worker receptors in their HRAs to align with its permitting requirements (BAAQMD, 2023a).

The proximity of sensitive receptors to motor vehicles is an air pollution concern, especially in Oakland where building setbacks are limited, and traffic volumes are higher than most other parts of the Bay Area. In addition to exhaust emissions, vehicles also contribute to particulates by generating road dust and through tire wear/brake wear.

Existing sensitive receptors within 1,000 feet of the Project site include the existing hospital building facilities on the Project site. To the north, this includes private residences at 720 52nd Street and 685 53rd Street, the UCSF BCH Oakland's Family House multi-family residential complex at 5222 Dover Street, and the residential neighborhood north of 53rd Street. To the west across MLK Jr. Way, there are single- and multi-family residences along 52nd, 51st, 47th, and West Streets. Single- and multi-family residences are also located to the east across SR 24 along 48th and 51st Streets, and Shattuck Avenue. Other sensitive receptors located within 1,000 feet of the Project site include LaVonda's Crayon Box daycare at 825 52nd Street, and Mechita Daycare at 4812 Shattuck Avenue, about 0.14 miles to the east.

4.1.2 Regulatory Framework

Federal

The 1970 Clean Air Act (last amended in 1990) requires that regional planning and air pollution control agencies prepare a regional air quality plan to outline the measures by which both stationary and mobile sources of pollutants will be controlled in order to achieve all standards by the deadlines specified in the act. These ambient air quality standards are intended to protect the public health and welfare, and they specify the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. They are designed to protect those segments of the public most susceptible to respiratory distress, including asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels that are somewhat above ambient air quality standards before adverse health effects are observed.

Table 4.1-4 summarizes current State and federal ambient air quality standards and attainment status for the SFBAAB. In general, the SFBAAB experiences low concentrations of most pollutants when compared to federal standards, except for ozone and particulate matter (PM_{10} and $PM_{2.5}$), for which standards are exceeded periodically (see Table 4.1-1).

In June 2004, the SFBAAB was designated as a marginal nonattainment area with respect to the national 8-hour ozone standard.[21] The USEPA lowered the national 8-hour ozone standard from 0.80 to 0.75 parts ppm effective May 27, 2008. In October 2015, the USEPA designated the SFBAAB as a marginal nonattainment region for the 0.70 ppm ozone standard established in 2015. The SFBAAB is in attainment for other criteria pollutants, with the exception of the 24-hour standards for $PM_{2.5}$, for which the Bay Area is designated as “Unclassified.” “Unclassified” is defined by the Clean Air Act as any area that cannot be classified, on the basis of available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

On January 9, 2013, the USEPA issued a final rule to determine that the SFBAAB attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key State Implementation Plan (discussed below) requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a “re-designation request” and a “maintenance plan” to the USEPA, and the USEPA approves the proposed re-designation.

21 “Marginal nonattainment area” means an area designated marginal nonattainment for the 1-hour national ambient air quality standard for ozone.

TABLE 4.1-4
STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SAN FRANCISCO BAY AREA AIR BASIN

Pollutant	Averaging Time	State (SAAQS[a])		Federal (NAAQS[b])	
		Standard	Attainment Status	Standard	Attainment Status
Ozone	1-hour	0.09 ppm	**N**	NA	See Note c
	8-hour	0.070 ppm	**N**	0.070 ppm[d]	**N**/Marginal
Carbon Monoxide (CO)	1-hour	20 ppm	A	35 ppm	A
	8-hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1-hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	0.075 ppm	A
	24-hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM_{10})	24-hour	50 μg/m^3	**N**	150 μg/m^3	U
	Annual[e]	20 μg/m^3 [f]	**N**	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24-hour	NA	NA	35 μg/m^3	**N**
	Annual	12 μg/m^3	**N**	12 μg/m^3	U/A
Sulfates	24-hour	25 μg/m^3	A	NA	NA
Lead	30-day	1.5 μg/m^3	A	NA	NA
	Cal. Quarter	NA	NA	1.5 μg/m^3	A
	Rolling 3-month average	NA	NA	0.15	U
Hydrogen Sulfide	1-hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8-hour	See Note g	U	NA	NA

NOTES:

A = Attainment; **N** = Non-attainment; U = Unclassified; NA = Not Applicable, no applicable standard; ppm = parts per million; μg/m^3 = micrograms per cubic meter.

a. SAAQS = State ambient air quality standards (California). SAAQS for ozone, CO (except Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2, PM, and visibility-reducing particles are values that are not to be exceeded. All other State standards shown are values not to be equaled or exceeded.
b. NAAQS = national ambient air quality standards. NAAQS, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of the 98th percentile is less than the standard.
c. The USEPA revoked the national 1-hour ozone standard on June 15, 2005.
d. This Federal 8-hour ozone standard was approved by USEPA in October 2015 and became effective on December 28, 2015.
e. State standard = annual geometric mean; national standard = annual arithmetic mean.
f. In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.
g. Statewide visibility-reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

SOURCES: BAAQMD, 2017b

State

CARB manages air quality, regulates mobile emissions sources, and oversees the activities of county Air Pollution Control Districts and regional Air Quality Management Districts, such as BAAQMD. CARB also establishes state ambient air quality standards and vehicle emissions standards.

Ambient Air Quality Standards

Although the federal Clean Air Act established national ambient air quality standards, individual states retained the option to adopt more stringent standards and to include other pollution sources. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological conditions in California, there is considerable divergence between the State and national ambient air quality standards, as shown in Table 4.1-4. California ambient standards tend to be at least as protective as national ambient standards and are often more stringent.

In 1988, California passed the California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), which, like its federal counterpart, called for the designation of areas as attainment or nonattainment, but based on State ambient air quality standards rather than the federal standards. As indicated in Table 4.1-4, the SFBAAB is designated as "nonattainment" for State ozone (both 1-hour and 8-hour standards), PM_{10}, and $PM_{2.5}$ standards. The SFBAAB is designated as "attainment" for other pollutants.

Off-Road Emissions Regulation for Compression-Ignition Engines and Equipment

Engines designated as nonroad engines by the USEPA are known as off-road engines in California State regulations implemented by CARB. Similar to the USEPA Nonroad Diesel Rule, the Off-Road Emissions Regulation for New Compression-Ignition Engines and Equipment applies to diesel engines such as those found in construction, general industrial, and terminal equipment. Initially adopted in 2000 and amended in 2004, the regulation establishes Tier emission standards, test procedures, and warranty and certification requirements. For some model years and engine sizes, the CARB Tier emission standards are more stringent than the USEPA standards.

CARB In-Use Off-Road Diesel Vehicle Regulation

In July 2007, CARB adopted the In-Use Off-Road Diesel Vehicle Regulation and amended it in December 2011. The regulation requires owners of off-road mobile equipment powered by diesel engines 25 horsepower (HP) or larger to meet the fleet average or best available control technology (BACT) requirements for NO_X and PM emissions by January 1 of each year. The regulation also establishes idling restrictions, limitations on buying and selling older off-road diesel vehicles (Tier 0), reporting requirements, and retrofit and replacement requirements. The requirements and compliance dates vary by fleet size, with performance requirements for large fleets beginning in 2014, medium fleets in 2017, and small fleets in 2019. Requirements regarding idling, disclosure, reporting, and labeling took effect in 2008 and 2009. The Diesel

Off-road On-line Reporting System is an online tool designed to help fleet owners report their off-road diesel vehicle inventories and actions taken to reduce vehicle emissions to CARB, as required by the In-Use Off-Road Diesel Vehicle Regulation.

CARB Diesel Risk Reduction Plan

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. Subsequent board regulations apply to new trucks and diesel fuel. With new controls and fuel requirements, 60 trucks built in 2007 would have the same particulate exhaust emissions as one truck built in 1988. The regulation resulted in an 80 percent decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Despite notable emission reductions, CARB recommends that proximity to sources of DPM emissions be considered in the siting of new sensitive land uses. CARB notes that these recommendations are advisory and should not be interpreted as defined “buffer zones,” and that local agencies must balance other considerations, including transportation needs, the benefits of urban infill, community economic development priorities, and other quality of life issues. With careful evaluation of exposure, health risks, and affirmative steps to reduce risk where necessary, CARB’s position is that infill development, mixed use, higher density, transit-oriented development, and other concepts that benefit regional air quality can be compatible with protecting the health of individuals at the neighborhood level (CARB, 2005).

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted the Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to DPM emissions (13 CCR Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than five minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions, compliance with the regulation also results in GHG reduction and energy savings in the form of reduced fuel consumption from unnecessary idling.

Airborne Toxic Control Measure for Stationary Compression Ignition Engines

In 2004, CARB adopted an Airborne Toxic Control Measure to reduce public exposure to emissions of DPM and criteria pollutants from stationary diesel-fueled compression ignition engines (17 CCR Section 93115). The measure applies to any person who owns or operates a stationary compression ignition engine in California with a rated brake horsepower greater than 50, or to anyone who either sells, offers for sale, leases, or purchases a stationary compression ignition engine. This measure outlines fuel and fuel additive requirements; emissions standards; recordkeeping, reporting and monitoring requirements; and compliance schedules for compression ignition engines.

Advanced Clean Cars Program

In January 2012, pursuant to Recommended Measures T-1 and T-4 of the Scoping Plan, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model years 2017 through 2025. In response to a midterm review of the standards in March 2017, CARB directed staff to begin working on post-2025 model year vehicle regulations (Advanced Clean Cars II) to research additional measures to reduce air pollution from light-duty and medium-duty vehicles. Additionally, in September 2020, Governor Newsom signed EO N-79-20 that established a goal that 100 percent of California sales of new passenger car and trucks be zero-emission by 2035 and directed CARB to develop and propose regulations toward this goal. The primary mechanism for achieving these targets for passenger cars and light trucks is the Advanced Clean Cars (ACC) II Program. CARB adopted the ACC II regulations on August 25, 2022.

Mobile Source Strategy

In May 2016, CARB released the updated 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 next 15 years. The strategy promotes a transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled (VMT).[22] The Mobile Source Strategy calls for 1.5 million Zero Emission Vehicles (ZEVs) by 2025 and 4.2 million ZEVs by 2030. The strategy also calls for more-stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero emission trucks. Statewide, the Mobile Source Strategy would result in a 45 percent reduction in GHG emissions from mobile sources and a 50 percent reduction in the consumption of petroleum-based fuels (CARB, 2016).

Similar to the 2016 Mobile Source Strategy, the 2020 Mobile Source Strategy is a framework that identifies the levels of cleaner technologies necessary to meet the many goals and high-level regulatory concepts that would allow the State to achieve the levels of cleaner technology. The 2020 Mobile Source Strategy will inform the development of other planning efforts (CARB, 2021). The 2020 Mobile Source Strategy illustrates that an aggressive deployment of ZEVs will be needed for the State to meet federal air quality requirements and the State's climate change targets.

California Building and Energy Efficiency Standards (Title 24)

The California Energy Commission first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce emissions of criteria pollutants or TACs, increased energy efficiency and reduced consumption of natural gas and other fuels would result in fewer criteria pollutant and TAC emissions from residential and non-residential buildings subject to the standards. The standards

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[22] Vehicle miles traveled (VMT) is a measure used extensively in transportation planning and analysis. It measures the amount of travel for all vehicles in a geographic region over a given period of time, typically a one-year period. It is calculated as the sum of the number of miles traveled by each vehicle.

are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The most recent update to the Title 24 energy efficiency standards (2022 standards; CEC, 2022) went into effect on January 1, 2023.

California Green Standards Building Code

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. The CALGreen Code is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment.

Since 2011, the CALGreen Code has been mandatory for all new residential and non-residential buildings constructed in the State. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and non-residential uses; the new measures took effect on January 1, 2023.

Regional and Local

BAAQMD is the regional agency with jurisdiction over the nine-county region located in the SFBAAB. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various non-governmental organizations also participate in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs. BAAQMD is responsible for attaining and/or maintaining air quality in the region within federal and State air quality standards. Specifically, BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the region and to develop and implement strategies to attain the applicable federal and State standards.

BAAQMD Rules and Regulations

BAAQMD does not have authority to regulate emissions from motor vehicles. Specific rules and regulations adopted by BAAQMD limit the emissions that can be generated by various stationary sources and identify specific pollution reduction measures that must be implemented in association with various activities. These rules regulate not only emissions of the six criteria air pollutants, but also TAC emissions sources. Stationary sources are regulated through BAAQMD's permitting process and standards of operation. Through this permitting process, including an annual permit review, BAAQMD monitors the generation of stationary source emissions and uses this information in developing its air quality plans. Any sources of stationary emissions constructed as part of the Project would be subject to the BAAQMD Rules and Regulations. Both federal and State ozone plans rely heavily upon stationary source control measures set forth in BAAQMD's Rules and Regulations.

Stationary sources, such as generators, are required to have permits from BAAQMD before constructing, changing, or operating the source. If the Project is subject to BAAQMD permit requirements, the sources would need to comply with BAAQMD Regulation 2 and proceed through the two-stage Authority to Construct and Permit to Operate process.

Per its Policy and Procedure Manual, BAAQMD requires implementation of Best Available Control Technology for Toxics and would deny an Authority to Construct or a Permit to Operate for any new or modified source of TACs that results in a cancer risk greater than 10 in one million or a chronic or acute hazard index of 1.0. The permitting process under BAAQMD Regulation 2 Rule 5 requires a Health Risk Screening Analysis, the results of which are posted on the Air District's website. These permitting requirements are developed by BAAQMD to ensure that the health risks of stationary sources are below applicable standards.

BAAQMD has also identified a series of Best Management Practices for the control of fugitive dust generated during construction activities. These measures, which focus on reducing dust generated by excavation, material movement and movement of off-road equipment on unpaved surfaces are considered sufficient by BAAQMD to reduce construction dust-related impacts to a less than significant level (BAAQMD, 2023a).

BAAQMD Air Quality Plan

For State air quality planning purposes, the SFBAAB is classified as a serious non-attainment area for the 1-hour ozone standard. The "serious" classification triggers various plan submittal requirements and transportation performance standards. One such requirement is that BAAQMD update the Clean Air Plan every three years to reflect progress in meeting the air quality standards and incorporate new information regarding the feasibility of control measures and new emission inventory data (Sections 40924 and 40925 of the California Health and Safety Code). The Bay Area's record of progress in implementing previous measures must also be reviewed. The plans for the air basin are prepared with the cooperation of the MTC and ABAG.

In April 2017, the Air District adopted the *2017 Clean Air Plan* whose primary goals are to protect public health and to protect the climate (BAAQMD, 2017c). The plan includes a wide range of proposed control measures to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. The *2017 Clean Air Plan* updates the *Bay Area 2010 Clean Air Plan* and complies with State air quality planning requirements as codified in the California Health and Safety Code (although the 2017 plan was delayed beyond the 3-year update requirement of the code). The SFBAAB is designated non-attainment for both the 1- and 8-hour State ozone standards. In addition, emissions of ozone precursors in the air basin contribute to air quality problems in neighboring air basins. Under these circumstances, State law requires the Bay Area's Clean Air Plan to include all feasible measures to reduce emissions of ozone precursors and to reduce the transport of ozone precursors to neighboring air basins.

The *2017 Clean Air Plan* contains 85 measures to address reduction of several pollutants: ozone precursors, particulate matter, TACs, and GHGs. Other measures focus on a single type of pollutant, potent GHGs such as methane and black carbon that consists of harmful fine particles that affect public health. These control strategies are grouped into the following categories:

- Stationary Source Measures;
- Transportation Control Measures;
- Energy Control Measures;
- Building Control Measures;
- Agricultural Control Measures;
- Natural and Working Lands Control Measures;
- Waste Management Control Measures;
- Water Control Measures; and
- Super GHG Control Measures.

BAAQMD CEQA Guidelines and Thresholds of Significance

In December 1999, BAAQMD adopted its *CEQA Guidelines – Assessing the Air Quality Impacts of Projects and Plans* – as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. The BAAQMD *CEQA Guidelines* is an advisory document and local jurisdictions are not required to utilize the methodology outlined therein. The document describes the criteria that BAAQMD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

BAAQMD updated the 1999 CEQA *Air Quality Guidelines* in 2010. In May of 2011, BAAQMD adopted an updated version of its Thresholds of Significance for use in determining the significance of projects' environmental effects under CEQA (Thresholds) and published their *CEQA Air Quality Guidelines* for consideration by lead agencies. The 2011 *CEQA Guidelines* Thresholds lowered the previous (1999) thresholds of significance for annual emissions of ROG, NOx, and PM_{10}, and set a standard for $PM_{2.5}$ and fugitive dust. The 2011 *CEQA Guidelines* also include methodologies for evaluating risks and hazards for the siting of stationary sources and of sensitive receptors. The BAAQMD resolution adopting the significance thresholds in 2010 and 2011 was set aside by the Alameda County Superior Court on March 5, 2012. On August 13, 2013, the California Court of Appeals issued a full reversal of the Superior Court's judgment, and on December 17, 2015, the California Supreme Court reversed in part the appellate court's judgment and remanded the case for further consideration consistent with the Supreme Court opinion. The California Supreme Court ruled unanimously that CEQA review is focused on a project's impact on the environment "and not the environment's impact on the project." (California Building Industry Association v. Bay Area Air Quality Management District

(December 17, 2015, Case No. S213478)). The Supreme Court confirmed that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future residents or users." The Court also held that when a project has "potentially significant exacerbating effects on existing environmental hazards" those impacts are properly within the scope of CEQA because they can be viewed as impacts of the project on "existing conditions" rather than impacts of the environment on the project.

BAAQMD most recently updated its CEQA Air Quality Guidelines in April 2023; these guidelines continue to provide direction on recommended analysis methodologies and thresholds for the evaluation of impacts. While the 2022 Guidelines updated the thresholds of significance for climate impacts from GHG emissions, the criteria pollutant thresholds of significance remain unchanged from those adopted in 2011. The analysis presented below accounts for changes to methodology set forth in BAAQMD's 2022 Guidelines.

UCSF

The UCSF BCH Oakland campus site is not currently included in the UCSF 2014 LRDP (and consequently, not currently subject to the LRDP). However, UCSF proposes to amend the 2014 LRDP to include the BCH Oakland campus site. LRDP general policies or overarching goals will become applicable, such as those identified in LRDP Chapter 3 and its Appendices. At this time UCSF is not developing any policies specifically for the BCH Oakland campus site in the LRDP, but the following UCSF 2014 LRDP campus-wide objective relates to air quality would apply to the Project:

Campus-Wide Objectives

1. **Respond to City and Community Context**
   F. Consider neighborhood and city-wide impacts related to UCSF's physical growth.

The UCSF 2014 LRDP also included *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group:

Community Planning Principles

Environmental Planning and Safety

EP3. Meet or exceed city, state, and federal standards with respect to health and safety, noise and construction-related environmental impacts.

City of Oakland

Pursuant to the University of California's constitutional autonomy, development and uses on property owned or leased by the University that are in furtherance of the University's educational purposes are not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies, and regulations to the extent feasible. City plans and regulations that are germane to the air quality impacts analysis are summarized below.

City of Oakland General Plan

Land Use and Transportation Element (LUTE)

The LUTE of the Oakland General Plan contains the following objective and policies that address air quality in the City (City of Oakland, 1998):

Objective I/C4: Minimize land use compatibility conflicts in commercial and industrial areas through achieving a balance between economic development values and community values.

Policy I/C4.2: Minimizing Nuisances. The potential for new or existing industrial or commercial uses, including seaport and airport activities, to create nuisance impacts on surrounding residential land uses should be minimized through appropriate siting and efficient implementation and enforcement of environmental and development controls. Where residential development would be located above commercial uses, parking garages, or any other uses with a potential to generate odors, the odor-generating use should be properly vented (e.g., located on rooftops) and designed (e.g., equipped with afterburners) so as to minimize the potential for nuisance odor problems.

Objective T4: Increase use of alternative modes of transportation.

Policy T4.1: Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

Policy T4.2: Creating Transportation Incentives. Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.

Policy T4.6: Making Transportation Accessible for Everyone. Alternative modes of transportation should be accessible for all of Oakland’s population. Including the elderly, disable, and disadvantaged.

Open Space, Conservation, and Recreation (OSCAR) Element

The OSCAR Element of the Oakland General Plan contains the following air quality objective and policies related to air quality (City of Oakland, 1996):

Objective CO-12: Air Resources. To improve air quality in Oakland and the surrounding Bay Region.

Policy CO-12.1: Land Use Patterns Which Promote Air Quality. Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d) supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.

Policy CO-12.4: Design of Development to Minimize Air Quality Impacts. Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb CO and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; and (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.

Policy CO-12.5: Use of Best Available Control Technology. Require new industry to use best available control technology to remove pollutants, including filtering, washing, or electrostatic treatment of emissions.

Policy CO-12.6: Control of Dust Emissions. Require construction, demolition, and grading practices which minimize dust emissions. These practices are currently required by the City and include the following:

- Avoiding earth moving and other major dust generating activities on windy days.
- Sprinkling unpaved construction areas with water during excavation, using reclaimed water where feasible (watering can reduce construction-related dust by 50 percent).
- Covering stockpiled sand, soil, and other particulates with a tarp to avoid blowing dust.
- Covering trucks hauling dirt and debris to reduce spills. If spills do occur, they should be swept up promptly before materials become airborne.
- Preparing a comprehensive dust control program for major construction in populated areas or adjacent to sensitive uses like hospitals and schools.
- Operating construction and earth-moving equipment, including trucks, to minimize exhaust emissions.

Policy CO-12.7: Regional Air Quality Planning. Coordinate local air quality planning efforts with other agencies, including adjoining cities and counties and the public agencies responsible for monitoring and improving air quality. Cooperate with regional agencies such as BAAQMD, MTC, ABAG, and the Alameda County Congestion Management Agency in developing and implementing regional air quality strategies. Continue to work with BAAQMD and the California Air Resources Board in enforcing the provisions of the California and federal Clean Air Acts, including the monitoring of air pollutants on a regular and ongoing basis.

Objective CO-13: Energy Resources. To manage Oakland's energy resources as effectively as possible, reduce consumption of non-renewable resources, and develop energy resources which reduce dependency on fossil fuels.

Policy CO13.2: Energy Efficiency. Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.

Policy CO13.3: Construction Methods and Materials. Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.

Policy CO13.4: Alternative Energy Sources. Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

Oakland Municipal Code

Per the City of Oakland Municipal Code, Title 15 Buildings and Construction, Chapter 15.36 Demolition Permits, Section 15.36.100 Dust Control Measures:

> *"Best Management Practices" shall be used throughout all phases of work, including suspension of work, to alleviate or prevent fugitive dust nuisance and the discharge of smoke or any other air contaminants into the atmosphere in such quantity as will violate any city or regional air pollution control rules, regulations, ordinances, or statutes. Water or dust palliatives or combinations of both shall be applied continuously and in sufficient quantity during the performance of work and at other times as required. Dust nuisance shall also be abated by cleaning and sweeping or other means as necessary. A dust control plan may be required as condition of permit issuance or at other times as may be deemed necessary to assure compliance with this section. Failure to control effectively or abate fugitive dust nuisance or the discharge of smoke or any other air contaminants into the atmosphere may result in suspension or revocation of the permit, in addition to any other applicable enforcement actions or remedies. (Ord. 12152 Section 1, 1999).*

The City of Oakland has implemented Green Building principles in city buildings through the following programs: Civic Green Building Ordinance (Ordinance No. 12658 C.M.S., 2005), requiring, for certain large civic projects, techniques that minimize the environmental and health impacts of the built environment through energy, water and material efficiencies and improved indoor air quality, while also reducing the waste associated with construction, maintenance and remodeling over the life of the building; Green Building Guidelines (Resolution No. 79871, 2006) which provides guidelines to Alameda County residents and developers regarding construction and remodeling; and Green Building Education Incentives for private developers. These actions reduce natural gas use in buildings, which reduces criteria pollutant emissions from natural gas combustion.

As of March 2017, Chapter 15.04, Part 11 of the City's Municipal Code requires all new multifamily and non-residential buildings to include full circuit infrastructure for plug-in electric vehicle (PEV) charging stations for at least 10 percent of the total parking spaces. In addition, inaccessible conduits for future expansion of PEV spaces must be installed for 90 percent of the total parking at multi-family buildings and 10 percent of the total parking at non-residential buildings. The new requirements are designed to accelerate the installation of vehicle chargers to address demand. The replacement of gasoline and diesel vehicles with electric vehicles will reduce criteria air pollutants associated with traditional vehicle fuel combustion.

As of December 1, 2020, the Oakland City Council voted to amend the City's Municipal Code to prohibit the use of fossil fuel gas in all newly constructed buildings. This includes the use of natural gas in both residential and commercial buildings. The ordinance allows developers who can demonstrate that it is not feasible for a new building to go 100 percent electric to apply for a waiver.

4.1.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) 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?

c) Expose sensitive receptors to substantial pollutant concentrations?

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

e) Exceed the LRDP EIR standard of significance by exposing receptors to toxic air contaminant emissions that (1) result in a cancer risk greater than 10 cancer cases per 1 million people exposed in a lifetime; or (2) for acute or chronic effects, result in concentrations of toxic air contaminant emissions with a Hazard Index of 1.0 or greater.

With respect to criterion (a), the analysis below in Impact AIR-1 uses a qualitative evaluation based on BAAQMD guidance to assess consistency of the Project with the 2017 Clean Air Plan.

With respect to criterion (b), the analysis below in Impact AIR-2 applies BAAQMD significance thresholds for the assessment of construction- and operations-related impacts of criteria air pollutants emissions.

With respect to criteria (c) and (e) above, the analysis in Impact AIR-3 applies BAAQMD significance thresholds for health risks and hazards.

Criteria Not Analyzed

There would no impact related to criterion (d) (other emissions such as odors) for the reasons described below:

- ***Odors.*** The proposed Project would not include development of land uses identified by BAAQMD as typically associated with odors, such as wastewater treatment plants, landfills, composting facilities, refineries, or chemical plants. The proposed Project would not result in development that would be a potential source of odors.

Thresholds For Evaluating Criteria Air Pollutants

As described above under *Regulatory Framework*, the SFBAAB experiences low concentrations of most pollutants when compared to federal and State standards and is designated as either attainment or unclassified with respect to most ambient air quality standards for criteria air pollutants, with the exception of ozone, $PM_{2.5}$, and PM_{10}, for which the air basin designated as non-attainment with respect to either the State or federal standards.

By definition, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions are considered to contribute to the existing, cumulative air quality conditions. If a project's contribution to cumulative air quality conditions is considerable, then the project's impact on air quality would be considered significant (BAAQMD, 2023a).

Table 4.1-5 presents BAAQMD-recommended significance thresholds for project-level analysis, followed by a discussion of each threshold. These thresholds are derived from requirements under BAAQMD regulations and the federal New Source Review program that apply to new stationary sources. These are considered levels at which new sources are not anticipated to contribute to an air quality violation, cause a significant human health risk, or result in a considerable net increase in criteria air pollutants According to BAAQMD, land development projects that would result in criteria pollutant emissions below these significance thresholds would also not result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

TABLE 4.1-5
BAAQMD CEQA AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction Thresholds – Average Daily Emissions (pounds per day)	Operational Thresholds	
		Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tons per year)
ROG	54	54	10
NOx	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust	Construction Dust Ordinance or other best management practices (BMPs)	Not applicable	
CO	Not applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	

NOTES: $\mu g/m^3$ = micrograms per cubic meter; BAAQMD = Bay Area Air Quality Management District; CEQA = California Environmental Quality Act; CO = carbon monoxide; NOx = oxides of nitrogen; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ppm = parts per million; ROG = reactive organic gases

SOURCE: BAAQMD, 2023a

Land use development projects generate ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions as a result of increases in vehicle trips, energy use, architectural coating, and construction activities. The thresholds presented in the table above can be applied to the construction and operational phases of land use projects. A project that would result in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ozone precursors or particulate matter. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites substantially control fugitive dust (WRAP, 2006) and individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent (BAAQMD, 2023c). BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities and considers fugitive dust-related impacts to be less than significant if these BMPs are implemented (BAAQMD, 2023a). This analysis assumes that UCSF would implement all BAAQMD BMPs as part of the Project, which is the basis for determining the significance of the air quality impact due to construction-phase fugitive dust emissions.

Thresholds for Evaluating TACs

In addition to criteria air pollutants, the Project would emit TACs during construction and operation. For the analysis of localized health risk impacts from TAC emissions, UCSF uses quantitative significance thresholds adopted by BAAQMD. These thresholds are based on substantial evidence as detailed in the Justification Report included as Appendix A of the 2022 BAAQMD *CEQA Air Quality Guidelines*. Specifically, if a proposed project would result in an incremental lifetime cancer risk exceeding 10 in one million, a chronic or acute hazard index exceeding 1.0, or a localized annual average $PM_{2.5}$ concentration exceeding 0.3 $\mu g/m^3$, then it would be considered to result in a significant impact with regard to exposure of sensitive receptors to substantial pollutant concentrations (BAAQMD, 2023a). These thresholds apply to TAC emissions during both Project construction and operations. BAAQMD considers cumulative health risk impacts of projects to be significant if the total health risks from stationary and mobile sources within 1,000 feet of the project area combined with project risks result in an incremental lifetime cancer risk exceeding 100 in one million, a chronic or acute hazard index exceeding 10.0, or a localized annual average $PM_{2.5}$ concentration exceeding 0.8 $\mu g/m^3$.

Approach to Analysis

The study area for regional air quality impacts is the SFBAAB. The study area for localized health risk impacts is the area in the vicinity of the project, generally defined by BAAQMD as the "zone of influence" extending 1,000 feet out from the project site boundaries.

Air quality analysis conducted for this impact assessment employs emission factors, models and tools distributed by a variety of agencies including CARB, the California Air Pollution Officers Association (CAPCOA), the California Office of Environmental Health Hazard Assessment (OEHHA), and the USEPA. Additionally, the analysis follows methodologies identified in the BAAQMD's *2022 CEQA Air Quality Guidelines*.

BAAQMD has developed separate guidelines for assessing the air quality impacts for projects and plans under CEQA. The air quality impacts of the proposed Project are analyzed at a project level. The methodology below describes the approach employed for the proposed Project. There are no substantial differences between the proposed Project and the Project Variant in terms of the amount of building space to be constructed and the operations of the new hospital building and parking garage. Therefore, the construction and operational air quality impacts of the Project Variant are not analyzed separately and would be the same as those of the proposed Project.

Consistency with Air Quality Plan

The most recently adopted air quality plan for the Bay Area is the BAAQMD's *2017 Clean Air Plan: Spare the Air, Cool the Climate*, which identifies measures to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions. Consistency with the *2017 Clean Air Plan* is the basis for determining whether the project would conflict with or obstruct implementation of an applicable air quality plan, the first bulleted significance criterion identified above.

In determining consistency with the *2017 Clean Air Plan*, this analysis considers whether the project would (1) support the primary goals of the *2017 Clean Air Plan*, (2) include applicable control measures from the *2017 Clean Air Plan*, and (3) avoid disrupting or hindering implementation of control measures identified in the *2017 Clean Air Plan*. To meet the primary goals, the *2017 Clean Air Plan* includes 85 control measures and actions grouped into different categories to address emissions from various sources: stationery and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. Consistency of the Project with applicable control measures in the *2017 Clean Air Plan* is presented in Impact AIR-1 and addresses the first significance criterion.

Construction-Phase Criteria Pollutant Emissions

Construction emissions from demolition, construction and renovation activities associated with the Project were estimated using emission factors and methodology consistent with CalEEMod and found in the User Guide for CalEEMod Version 2022.1. Data on construction schedule and phasing, equipment types and numbers used, and construction vehicle trips was provided by UCSF. The provision of these Project-specific data points by UCSF's engineering team represents substantial evidence for variance from default values within the CalEEMod model. Emissions from offroad construction equipment were estimated using CARB's OFFROAD2017 emission factors and on-road emissions were estimated using EMFAC2021 emission factors. For each year of construction (2024 through 2033), the average daily emissions were calculated and compared to the BAAQMD thresholds for construction presented in Table 4.1-5. Construction of the Project would also result in localized impacts from fugitive dust emissions; these emissions are evaluated qualitatively using BAAQMD guidance to apply BMPs to control dust.

Operational Criteria Pollutant Emissions

As a project design feature, all new buildings proposed as part of the Project would be all-electric buildings with no natural gas infrastructure. Existing buildings that would be renovated as part of the Project would continue to use natural gas for building energy needs. Therefore, there would be no increase in direct emissions of criteria air pollutants related to operational building energy use in new buildings. Emissions from area sources (including landscape maintenance, architectural coatings, and the use of consumer products such as cleaning products), were estimated using CalEEMod for the first operational year of 2031 as well as for existing buildings that would be removed as part of the Project.

For the mobile on-road source emissions, the net new VMT (calculated as Project VMT minus existing VMT) provided by the traffic consultant was used along with emission factors from EMFAC2021 to estimate the net increase in vehicular emissions.

The operation of the Project would also result in an increase in emissions at the hospital loading docks from the idling of delivery trucks and operation of Transport Refrigeration Units (TRUs). Project emissions from TRU and truck idling are currently occurring at the loading docks of the existing hospital and are assumed to increase at the same rate as Project traffic.

The operations of the Project would also generate emissions from the testing, maintenance and operation of emergency back-up generators during power outages. The Project includes up to three new 2,000 kW emergency generators which would be subject to BAAQMD's BACT requirement of Tier 4 Final-compliant engines for generators greater than 1,000 hp (BAAQMD, 2021). Currently, there are emergency generators serving the backup power needs of the existing hospital.

Lastly, the Project would also result in an incremental increase in emissions resulting from marginal increases in helicopter operations that access the hospital. Please refer to Appendix NOI for assumptions and calculations related to helicopter emissions.

The total change in operational emissions estimated due to the Project was compared to the BAAQMD's project-level operational thresholds for criteria pollutants shown in Table 4.1-5.

Other Criteria Pollutant Impacts

Regional concentrations of CO in the Bay Area have not exceeded the State standards in more than a decade and SO_2 concentrations have never exceeded the standards. The primary source of CO emissions from development projects is vehicle traffic. Construction-related SO_2 emissions represent a negligible portion of the total basin-wide emissions and construction-related CO emissions represent less than 5 percent of the Bay Area total basin-wide CO emissions. As discussed previously, the Bay Area is in attainment for both CO and SO_2. Furthermore, BAAQMD has demonstrated, based on modeling, that in order to exceed the California ambient air quality standard of 9.0 ppm (8-hour average) or 20.0 ppm (1-hour average) for CO, project traffic in addition to existing traffic would need to exceed 44,000 vehicles per hour at affected intersections (or 24,000 vehicles per hour where vertical and/or horizontal mixing is limited). The transportation analysis indicates that the intersection in the Project area with the greatest traffic volumes would be MLK Jr. Way and SR 24 ramps/47th Street with hourly volumes of 4,000 vehicles with the Project, which is well below 24,000. Therefore, given the Bay Area's attainment status and low background CO concentrations, the limited CO and SO_2 emissions that would result from the Project would not result in a cumulatively considerable net increase in CO or SO_2, and quantitative analysis of these pollutants is not required.

TAC Health Risk Impacts

Construction-related and operational TAC emissions generated by the Project primarily include DPM and $PM_{2.5}$, and can result in localized health risk impacts, expressed as annual average $PM_{2.5}$ concentrations, the increased probability of contracting cancer per 1 million persons exposed to TAC concentrations, and the chronic Hazard Index. DPM results in very negligible acute chronic risk and OEHHA does not provide a Reference Exposure Level (REL) for the estimation of acute risk from DPM. Therefore, the analysis presented below focuses on chronic Hazard Index from DPM.

An HRA was conducted to estimate health risks from exposure to TACs emitted during the construction and operation of the Project. The HRA was prepared using technical information and health risk assessment guidance and protocol from the BAAQMD (BAAQMD, 2016), CARB (CARB, 2023b), and OEHHA (OEHHA, 2015). The HRA evaluated the estimated incremental increase in lifetime cancer risk from exposure to emissions of DPM and the annual average $PM_{2.5}$ concentrations associated with construction equipment and vehicles, testing and operation of emergency generators, idling of trucks and TRUs at the loading docks and on-road fugitive sources (including tire wear, brake wear, and road dust) that would be emitted by Project-related construction activities. Consistent with the most recent BAAQMD guidance, fugitive dust emissions generated onsite during construction were also accounted for in the $PM_{2.5}$ concentration analysis. The HRA includes DPM and $PM_{2.5}$ emissions from construction trucks but not from construction worker vehicle trips, which would be primarily gasoline-fueled and are therefore not a substantial source of DPM and $PM_{2.5}$ exhaust emissions.

The HRA focuses on the pollutants of concern ($PM_{2.5}$ and DPM) because these pollutants pose substantial health impacts at the local level more so than other types of air pollutants. While DPM is a complex mixture of gases and fine particles that includes over 40 substances that are listed by the USEPA as hazardous air pollutants and by the BAAQMD as TACs, in accordance with OEHHA and BAAQMD health risk guidance, the DPM analysis uses exhaust PM_{10} emissions as a surrogate for DPM emissions (OEHHA & CARB, 1998). This is a conservative approach because DPM is a subset of exhaust PM_{10}, and therefore the fraction of DPM emissions is expected to be lower.

Construction activity data provided by UCSF in conjunction with default CalEEMod inputs were used to prepare a construction HRA using the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee regulatory air dispersion model (AERMOD version 21112; USEPA, 2022) and HRA guidelines from BAAQMD and OEHHA. DPM and $PM_{2.5}$ emissions from construction sources associated with the Project calculated as described earlier were used to estimate emission rates in grams per second. These emission rates were input into AERMOD to derive concentrations across a 20 meter by 20-meter receptor grid that covered all receptors within 1,000 feet of the Project site boundaries. BAAQMD considers 1,000 feet around sources as the zone of influence for assessing health risk impacts (BAAQMD, 2023a). Receptors analyzed include residences, childcare centers, and workers (both on-campus and off-site). There are no schools within 1,000 feet of the Project site boundaries. BAAQMD also considers hospitals as sensitive receptors. The approach used for the analysis of health risks to patients at the existing hospital is discussed under *Non CEQA Impacts of the Environment on the Project,* below.

In accordance with OEHHA and BAAQMD guidelines for HRAs (OEHHA, 2015; BAAQMD, 2023d), established health risk parameters were applied to the highest estimated DPM concentrations at various receptor types analyzed (residential, daycare, worker). Increase in lifetime cancer risk was estimated using the cancer potency factor for DPM, OEHHA-recommended age-sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants. For assessing impacts to existing offsite residential receptors, construction exposure is assumed to begin at the start of the 3rd trimester of an unborn child. Exposure to daycare receptors was conservatively assumed to start at 6 weeks of age. Estimation of cancer risk to workers assumed exposure to adults greater than 16 years of age. The chronic hazard index was estimated using acceptable reference concentrations for non-cancer health effects of DPM. Construction health risks were estimated separate from the operational health risks and based on the location of the sources considered in each analysis, the MEI for the construction HRA varied from the MEI for the operational HRA. Construction health risks were estimated based on exposure over the entire duration of construction from 2024 to 2033. Operational health risks were estimated assuming 30 years of exposure to the Project's operational TAC emissions. In addition, the analysis also presents the combined health risk from exposure to both construction and operational emissions of the Project. This assumes that the construction MEI would continue to get exposed to operational TAC emissions upon completion of construction activities. Detailed HRA calculations are presented in **Appendix AIR**.

If the Project would generate TAC emissions resulting in increased health risk values or annual average $PM_{2.5}$ concentration contributions exceeding project-level BAAQMD thresholds at the MEI for the residential, school, daycare receptors and worker receptors, the Project would have a significant impact. This analysis is presented in Impact AIR-3 and addresses the third significance criterion.

The operational HRA considered emissions from testing and operation of emergency generators and emissions from idling of trucks and TRUs at the new loading docks. Emissions from emergency generators were calculated assuming a maximum of 50 hours per year of non-emergency testing operation, consistent with the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (17 CCR section 93115), and an additional 100 hours for emergency use (CARB, 2011). Installation and operation of the emergency diesel generators would require an Authority to Construct and Permit to Operate from the BAAQMD, who would evaluate emissions based on size and require Best Available Control Technology, if warranted. The generators were assumed to meet the BAAQMD BACT requirement of Tier 4 Final-compliant engines for generators greater than 1,000 hp (BAAQMD, 2021). Increase in idling emissions from diesel trucks at the loading dock were estimated assuming 10 minutes of idling per delivery (5 minutes on arrival and 5 minutes prior to departure) consistent with the requirements of Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling (13 CCR Section 2485). TRU engines were assumed to be idling for 60 minutes per delivery. These emissions currently occur at the existing loading docks; therefore, only the emissions associated with the increase in trucks and TRUs idling at the new loading docks were included in the HRA. The Project would also increase vehicle trips and associated emissions, but the fraction of operational traffic that would comprise diesel-fueled trucks generating DPM emissions would be minimal and hence not considered in the HRA.

Non-CEQA Impacts of the Environment on the Project

In the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015,[23] the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's users or residents, except where the proposed project would exacerbate an existing environmental condition. Accordingly, the analysis focuses on air quality impacts to existing sensitive receptors from new emissions generated by the Project, during both construction and operational phases. Existing emissions from off-site TAC sources and the project's capacity to exacerbate existing TAC-related health risks are addressed under cumulative impacts.

Patients at the existing hospital would also be exposed to TACs from construction activities associated with the Project. However, hospitals and healthcare facilities are equipped with advanced filtration systems not just to reduce particulate pollution but also reduce virus transmission. Hospitals rely on a combination of specialized heating, ventilation and air conditioning (HVAC) systems and high-efficiency particulate air (HEPA) filters to regulate airflow, and to prevent the spread of viruses and bacteria. Any air entering the hospital is first passed through a series of filters before it is allowed to circulate. These filters reduce the levels of potentially harmful particulates in the air, such as viruses, dust, pollen, and pollution from the outdoor environment (Cairn Technology Ltd., 2022). The short duration of inpatient stay combined with the presence of high efficiency HEPA filters and inoperable windows would result in less-than-significant health risk impacts from DPM and $PM_{2.5}$, whose impacts are primarily chronic and estimated based on exposure durations of one year for $PM_{2.5}$ concentration and 30 years for cancer risk. A short-term indoor exposure of several days or even several weeks is extremely unlikely to cause health risks that would exceed BAAQMD's thresholds. Therefore, patients at the existing hospital were not included in the construction HRA. For the same reasons, exposure of the occupants of the new hospital to operational emissions from emergency generators and the loading dock is unlikely to result in health risks that would exceed BAAQMD's health risk thresholds.

Cumulative Impacts

The contribution of a project's individual air emissions to regional air quality impacts is by its nature, a cumulative effect. Emissions from past, present and future projects in the vicinity also have or will contribute to adverse regional air quality impacts on a cumulative basis. No single project by itself would be sufficient in size to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality conditions (BAAQMD, 2023a). As described above, the project-level thresholds for criteria air pollutant impacts are based on levels at which new sources are not anticipated to contribute to an air quality violation, cause a significant human health risk, or result in a considerable net increase in criteria air pollutants. Therefore, if a project's emissions are below the project-level thresholds,

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[23] *California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal.4th 369. Opinion Filed December 17, 2015.

the project would not be considered to result in a considerable contribution to cumulative regional air quality impacts.

Potential cumulative health risks were analyzed at the Project's residential MEI. The analysis considers health risks from the Project in combination with health risk and TACs from BAAQMD-permitted stationary sources and mobile sources (freeway, major streets and rail) within 1,000 feet of the residential MEI (BAAQMD, 2023a).[24] Health risk data from BAAQMD-permitted stationary sources and background mobile source risks from on-road and rail sources were derived from the health risk screening and modeling tools available on the BAAQMD website (BAAQMD, 2023b; BAAQMD, 2023e).

Impact Analysis

Impact AIR-1: Implementation of the NHB Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan. ***(Less than Significant)***

The most recently adopted air quality plan in the SFBAAB is the *2017 Clean Air Plan*, the primary goals of which are to protect public health and to protect the climate (BAAQMD, 2017b). The plan includes a wide range of proposed control measures to reduce combustion-related activities, decrease fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs.

In determining consistency with the Clean Air Plan, the BAAQMD recommends that the analysis consider whether the Project would:

- Support the primary goals of the Clean Air Plan;
- Include applicable control measures of the Clean Air Plan; and
- Avoid disrupting or hindering implementation of control measures identified in the Clean Air Plan.

The primary goals of the *2017 Clean Air Plan* are to protect air quality and public health at the regional and local scale and protect the climate by reducing regional criteria air pollutant emissions and reducing local air quality-related health risks (by meeting state and national ambient air quality standards). To meet these goals, the *2017 Clean Air Plan* includes 85 control measures aimed at reducing air pollutants in the SFBAAB (BAAQMD, 2017c). These control measures are grouped into the following sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, and waste management.

The vast majority of the control measures included in the *2017 Clean Air Plan* do not apply directly to the Project because they target facilities or land uses that do not currently exist on the Project site and are not proposed by UCSF (e.g., energy generation, waste management, agricultural, forest or pasture lands); vehicles or equipment that would not be employed in the project area (e.g., airports, farming equipment); and/or involve rulemaking or other actions under the jurisdiction of agencies not directly involved with design and approval of the Project and its

[24] The MEI adequately captures analysis of all sensitive receptors.

related actions. For example, the Agriculture, Natural and Working Lands, and Water measures address emissions sources not applicable to the Project, but rather the BAAQMD's own programs and regional air quality planning and are less applicable to local agencies' decisions and projects. In addition, 40 of these measures address stationary sources (such as oil refineries and cement kilns, and large boilers used in commercial and industrial facilities) and will be implemented by the BAAQMD using its permit authority and are therefore not suited to implementation through local planning efforts.

However, the Project would include, either by design, required as part of compliance with regulations or due to its location close to transit facilities, features that support implementation of transportation-, energy-, building-, waste-, and water conservation-related measures included in the *2017 Clean Air Plan*, as discussed below.

The *2017 Clean Air Plan* recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and GHG emissions from motor vehicles is to channel future Bay Area growth into urban communities where goods and services are close at hand, and people have a range of viable transportation options. The Project's location in proximity to a variety of land uses and transit facilities as well as the implementation of an aggressive Transportation Demand Management (TDM) program would serve to both reduce the number of vehicle trips generated as well as the trip length thereby reducing transportation emissions. As detailed in Section 4.11, *Transportation*, of this EIR, the UCSF BCH Oakland TDM program includes strategies that emphasize commuting options other than driving alone, such as public transit, shuttle service, biking, walking, and carpooling. The key measures of the UCSF BCH Oakland TDM program that are being implemented include:

- Free shuttle service between the Hospital and the MacArthur BART Station.
- Pre-tax commuter incentives which allow employees to pay for transit expenses before taxes.
- Bicycle parking and amenities such as a repair station and showers.
- Market-priced on-site parking for employees.
- Preferred on-site carpool parking in the Main Garage.
- Regular employee outreach and education to ensure that employees are aware of all their commuting options.
- Remote work for eligible employees.

It should be noted that UCSF BCH Oakland also pays the City of Oakland to implement a residential parking permit (RPP) program in the neighborhood residential streets where on-street parking for non-residents is typically restricted to two-hours during weekday business hours to discourage employees and patients/visitors from parking in the neighborhood residential streets.

Based on the annual evaluation of the TDM Program conducted in 2022, about 73 percent of the employees drive alone to work, which meets the mode share goal for the 2015 TDM program.

About five percent of the employees carpool, six percent take BART and the UCSF BCH Oakland shuttle, eight percent use other modes, and eight percent work remotely. Based on the survey conducted in 2021, about 81 percent of patients/visitors drove, about four percent used other modes, and 15 percent used telehealth and did not travel to the UCSF BCH Oakland campus.

As detailed in the analysis under Impact TRANS-2, in Section 4.11, the average VMT per employee at the Project site is less than the regional average VMT per employee, and even with the implementation of the Project, the VMT per employee would remain well below the regional average.

Table 4.1-6 provides a summary of the consistency analysis of the Project with applicable control measures of the *2017 Clean Air Plan*.

TABLE 4.1-6
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Stationary Source Control Measures		
SS21: New Source Review for Air Toxics	SS21 addresses air toxics emissions through BAAQMD Rule 2-5, New Source Review of Toxic Air Contaminants.	**Consistent.** Stationary sources such as emergency generators proposed as part of the Project would be required to comply with BAAQMD Rule 2-5.
SS25: Coating, Solvents, Lubricants, Sealants and Adhesives	SS25 will reduce emissions of ROG from architectural coatings and other materials by proposing more stringent ROG limits as appropriate.	**Consistent.** The Project would comply with all applicable BAAQMD rules and regulations regarding ROG emission limits.
SS32: Emergency Backup Generators	S32 will reduce emissions of DPM, TACs, and criteria pollutants from emergency backup generators by enforcing Rule 11- 18, resulting in reduced health risks to impacted individuals. This measure will also have climate protection benefits through reduces GHG emissions.	**Consistent.** Proposed emergency backup generators shall meet Tier 4 Final standards compliant with the regulations set forth in BAAQMD Rule 11-18.
SS36: PM from Trackout	SS36 developed Regulation 6, Particulate Matter; Rule 6: Trackout (Rule 6-6) to address mud and dirt that can be “tracked out” from construction sites, bulk material storage, and disturbed surfaces onto public paved roads where vehicle traffic will pulverize the mud and dirt into fine particles and entrain them into the air.	**Consistent.** Construction activities associated with the Project would implement BMPs consistent with BAAQMD recommendations, as part of the project, which would reduce fugitive dust emissions and trackout of PM from construction areas.
SS38 Fugitive Dust	SS38 reduces particulate matter (PM_{10} & $PM_{2.5}$) fugitive dust emissions from traffic and other operations on construction sites, large, disturbed surfaces, and other sources of fugitive PM emissions.	**Consistent.** Project construction activities would implement dust control BMPs consistent with BAAQMD recommendations as part of the Project, which would reduce fugitive dust emissions from construction areas.
Transportation Control Measures		
TR1 – Clean Air Teleworking Initiative	TR1 – Clean Air Teleworking Initiative	TR1 – Clean Air Teleworking Initiative

TABLE 4.1-6 (CONTINUED)
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Transportation Control Measures (Continued)		
TR2: Trip Reduction Programs	TR2 includes a mandatory and voluntary trip reduction program. The regional Commuter Benefits Program, resulting from SB 1339, and similar local programs in jurisdictions with ordinances that require employers to offer pre-tax transit benefits to their employees are mandatory programs. Voluntary programs include outreach to employers to encourage them to implement strategies that encourage their employees to use alternatives to driving alone.	**Consistent.** The Project would result in an increase in regional VMT over existing conditions amounting to approximately 19 percent [change in both the employment and service VMT. However, the Project's VMT per employee would be well below the regional average. UCSF will continue to implement the BCH Oakland TDM Program to meet the mode share goals to reduce single occupancy worker and visitor trips to the campus. The TDM Program provides free shuttle service between the Hospital and the MacArthur BART Station, pre-tax commuter incentives which allow employees to pay for transit expenses before taxes and regular employee outreach and education to ensure that employees are aware of all their commuting options.
		The availability of viable transportation options would ensure that employees, patients and visitors could ride transit, bicycle, and walk to and from the campus site instead of taking trips via private automobile. These features indicate that the Project would reduce growth in automobile trips and VMT.
TR3 – Local and Regional Bus Service	Fund local and regional bus projects, including operations and maintenance.	**Consistent.** Bus transit service providers in the Project vicinity include the Alameda–Contra Costa Transit (AC Transit) which provides local and Transbay bus service and the UCSF BCH Oakland Shuttle, which primarily provides free shuttle service between the UCSF BCH Oakland campus site and the MacArthur BART Station.
TR4 – Local and Regional Rail Service	Fund local and regional rail service projects, including operations and maintenance.	**Consistent.** BART provides regional rail service. The nearest BART station to the Project is the MacArthur BART Station, about a 0.5-mile southwest of the campus site. The UCSF BCH Oakland Shuttle provides free shuttle service between the UCSF BCH Oakland campus and the MacArthur BART Station.
TR5: Transit Efficiency and Use	TR5 will improve transit efficiency and make transit more convenient for riders through continued operation of 511 Transit, full implementation of Clipper® fare payment system and the Transit Hub Signage Program.	**Consistent.** The Project is located in proximity to transit services, where the Clipper® fare payment system can be used on various transit operators.
TR8: Ridesharing	TR8 promotes ridesharing services and incentives through the implementation of the 511 Regional Rideshare Program, as well as local rideshare programs implemented by Congestion Management Agencies. These activities will include marketing rideshare services, operating a rideshare information call center and website, and providing vanpool support services. In addition, this measure includes provisions for encouraging car sharing programs.	**Consistent.** Ridesharing services to Project employees are available through the 511 Regional Rideshare Program as well as other private rideshare programs.

TABLE 4.1-6 (CONTINUED)
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Transportation Control Measures (Continued)		
TR9: Bicycle and Pedestrian Access and Facilities	The bicycle component of TR9 strives to expand bicycle facilities serving employment sites, educational and cultural facilities, residential areas, shopping districts, and other activity centers. Typical improvements include bike lanes, routes, paths, and bicycle parking facilities. The bicycle component also includes a bike share pilot project that was developed to assess the feasibility of bicycle sharing as a first- and last-mile transit option. The pedestrian component of this measure is intended to improve pedestrian facilities and encourage walking by funding projects that improve pedestrian access to transit, employment sites, and major activity centers. Improvements may include sidewalks/paths, benches, reduced street width and intersection turning radii, crosswalks with activated signals, curb extensions/bulbs, buffers between sidewalks and traffic lanes, and street trees.	**Consistent.** As discussed in Section 4.11, *Transportation*, while the Project site is not directly served by any designated bicycle facilities, designated bike lanes are currently located in the vicinity of the Project site with additional facilities proposed as per the City of Oakland's 2019 *Bicycle Master Plan*. Adjacent to the Project site, proposed improvements would enhance the existing pedestrian crossing across MLK Jr. Way at 51st Street by installing pedestrian safety features, curb extensions, and a widened median. These improvements are being undertaken by the City of Oakland to improve bicycle connectivity to the area and not within the Project's purview. The Project would continue to maintain the existing bicycle parking and amenities such as a repair station and showers at the BCH Oakland campus as part of the TDM program and also provide new short-term and long-term bicycle parking facilities, consistent with the City's *Bicycle Master Plan.* Pedestrian facilities in the vicinity of the Project site are comprised of sidewalks, marked crosswalks, curb ramps, pedestrian signal heads and buttons, lighting, curb extensions, and wayfinding signs. All streets in the Project vicinity provide paved sidewalks on both sides of the street with access to the Project site. The Project proposes several improvements to the pedestrian circulation onsite. It would extend accessible pedestrian pathways along the south and east facades of the new hospital building to serve the east passenger drop-off area for the ED and connect staff and patients to the proposed parking garage. Door landings and pathways navigating the Project site would be designed using compliant grades. Existing pedestrian sidewalks along 52nd Street and MLK Jr. Way adjacent to the Project site would be improved under the Project. Curb ramps would be used where pedestrians enter vehicular travel ways.
TR10: Land Use Strategies	This measure supports land use patterns that reduce VMT and associated emissions and exposure to TACs, especially within infill locations and impacted communities.	**Consistent.** The Project would implement this measure as it is an existing use located in proximity to a variety of land uses including residential, retail, and commercial uses. The Project site is also located in an area well served by transit, bicycle and pedestrian facilities that serve to reduce VMT and associated emissions. The availability of viable transportation options would ensure that employees, patients and visitors could ride transit, bicycle, and walk to and from the campus site instead of making trips via private automobile. These features indicate that the Project would reduce growth in automobile trips and VMT compared to other hospital facilities. As the analysis under Impact TRANS-2, in Section 4.11, *Transportation*, shows, the average VMT per employee at the Project site is well below the regional average VMT per employee, and even with the implementation of the Project, the campus site VMT per employee

TABLE 4.1-6 (CONTINUED)
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Transportation Control Measures (Continued)		
		would remain substantially below the regional average. The Project will also benefit from the existing BCH Oakland TDM Program that includes several measures to reduce VMT and increase transit use.
TR13: Parking Policies	This measure encourages parking policies and programs in local plans, e.g., reduce minimum parking requirements; limit the supply of off-street parking in transit-oriented areas; unbundle the price of parking spaces; support implementation of demand-based pricing in high-traffic areas.	**Consistent.** BCH Oakland's TDM Program provides market-priced on-site parking for employees and preferred on-site carpool parking. BCH Oakland also pays the City of Oakland to implement a residential parking permit (RPP) program in the neighborhood residential streets where on-street parking for non-residents is typically restricted to two-hours during weekday business hours which discourages most employees and patients/visitors from parking in the neighborhood residential streets.
Energy Control Measures		
EN1: Decarbonize Electricity Production	EN1 focuses on lowering carbon emissions by switching the fuel sources used in electricity generation. The measure would promote and expedite a transition away from fossil fuels used in electricity generation (i.e., natural gas) to a greater reliance on renewable energy sources (e.g., wind, solar). In addition, this measure would promote an increase in cogeneration, which results in useful heat in addition to electricity generation from a single fuel source.	**Consistent.** The Project is proposed as an all-electric development with no new natural gas infrastructure consistent with the UC *Policy on Sustainable Practices*. Therefore, there would be no direct emissions of criteria air pollutants associated with building energy use. Pacific Gas & Electricity (PG&E) and Calpine Power currently provide electricity to the campus. The UC *Policy on Sustainable Practices* has a policy goal that each campus and health location obtain 100 percent clean electricity by 2025. Consistent with this goal, BCH Oakland intends to purchase net zero carbon electricity, either from the UC Regents through the Direct Access Program, or from an alternative provider such as East Bay Community Energy. The UC Regents program is referred to as the UC Clean Power Program and contributes to achieving carbon neutrality in indirect emissions through the purchase of carbon-free electricity. As of 2019, the UC Clean Power Program became 100 percent carbon free. UCSF BCH Oakland's purchase of net zero carbon electricity would result in reduced carbon dioxide emissions from existing conditions, even with the addition of the proposed NHB Project electricity use. In compliance with SB 100 and the Renewable Portfolio standards program, all electric utilities would be required to transition to 100 percent carbon-free energy from renewable sources.
EN2: Decrease Electricity Demand	EN2 would decrease electricity demand through the adoption of additional energy efficiency policies and programs.	**Consistent.** The Project would be subject to energy efficiency standards enforced through the California Building Efficiency Standards (CCR, Title 24, Part 6) and California Green Building Standards Code (CCR, Title 24, Part 11 – CALGreen). Project buildings would be designed to comply with the most recent version of Title 24 Building Energy Efficiency Standards and mandatory CALGreen measures. The new hospital building would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold

TABLE 4.1-6 (CONTINUED)
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Energy Control Measures (Continued		
		Certification; as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."
Buildings Control Measures		
BL1: Green Buildings	BL1 seeks to increase energy efficiency and the use of on-site renewable energy for all types of existing and future buildings. The measure includes policy assistance, incentives, diffusion of public information, and targeted engagement and facilitation of partnerships in order to increase energy efficiency and on-site renewable energy in the buildings sector.	**Consistent.** UCSF currently implements a number of programs and practices to promote sustainability at the campus, including TDM, energy supply and efficiency, water supply and conservation, and solid waste reduction and recycling. With development of the proposed Project, UCSF would continue to implement, and update as needed, these sustainability programs and practices. The Project is being designed and developed to minimize its environmental impact and includes sustainability features that promote energy conservation. In addition to compliance with the most recent version of Title 24 Building Energy Efficiency Standards and mandatory CALGreen measures, the new hospital building would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold Certification; as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."
BL2: Decarbonize Buildings	BL2 seeks to reduce GHG emissions, criteria pollutants and TACs by limiting the installation of space- and water-heating systems and appliances powered by fossil fuels. This measure is to be implemented by developing model policies for local governments that support low- and zero-carbon technologies as well as potentially developing a rule limiting the sale of natural-gas furnaces and water heaters.	**Consistent.** The Project is proposed as an all-electric development with no new natural gas infrastructure consistent with the UC *Policy on Sustainable Practices*. Pacific Gas & Electricity (PG&E) and Calpine Power currently provide electricity to the campus site. The UC *Policy on Sustainable Practices* has a policy goal that each campus and health location obtain 100 percent clean electricity by 2025. Consistent with this goal, UCSF BCH Oakland intends to purchase net zero carbon electricity, either from the UC Regents through the Direct Access Program, or from an alternative provider such as East Bay Community Energy. The UC Regents program is referred to as the UC Clean Power Program and contributes to achieving carbon neutrality in indirect emissions through the purchase of carbon-free electricity. As of 2019, the UC Clean Power Program became 100 percent carbon free. UCSF BCH Oakland's purchase of net zero carbon electricity would result in reduced carbon dioxide emissions from existing conditions, even with the addition of the proposed NHB Project electricity use.

TABLE 4.1-6 (CONTINUED)
PROJECT CONSISTENCY WITH APPLICABLE CONTROL MEASURES IN THE 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Waste Management Control Measures		
WA3: Green Waste Diversion	WA3 seeks to reduce the total amount of green waste being disposed in landfills by supporting the diversion of green waste to other uses.	**Consistent.** The Project would be serviced by a waste hauler that would be required to comply with the requirements of the California Integrated Waste Management Act and AB 341. Non-hazardous solid waste and green waste (e.g., yard trimmings) in the city of Oakland are collected by Waste Management of Alameda County (WMAC).
WA4: Recycling and Waste Reduction	WA4 seeks to reduce GHG emissions by diverting recyclables and other materials from landfills.	**Consistent.** Per AB 341 – Commercial Recycling and AB 1826 – Commercial Organics, commercial, business, or multifamily establishments that generate two cubic yards or more of solid and organic waste per week will be required to have a recycling and/or organics program. Non-hazardous solid waste and green waste (e.g., yard trimmings) in the city of Oakland are collected by WMAC, while recycling services are provided by California Waste Solutions. Employees, visitors and patients would continue to participate in UCSF's recycling and composting programs and other efforts to reduce the total amount of waste produced and/or requiring landfill disposal. UCSF has consistently increased its landfill diversion rate, rising from 64 percent in 2013 to 78 percent in 2018, as it strives to meet the UC *Policy on Sustainable Practices* goal of zero waste.
Water Control Measures		
WR2: Support Water Conservation	WR2 seeks to promote water conservation, including reduced water consumption and increased on-site water recycling, in residential, commercial and industrial buildings for the purpose of reducing GHG emissions.	**Consistent.** To advance this measure, BAAQMD supports efforts of local governments to achieve and exceed state water use reduction goals by disseminating information about best practices that reduce water consumption and increase on-site water recycling; encouraging the adoption of water conservation ordinances; and incorporating public outreach and education on water conservation into BAAQMD's outreach programs. BAAQMD also incorporates best practices for water use into local plan guidance, CEQA guidance, and other resources for cities and counties. The Project is being designed and developed to minimize its environmental impact and includes sustainability improvements related to water use. The new hospital building would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold Certification; as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development." The landscaping plan for the Project includes plant species that would be drought-tolerant and low-water use to reduce irrigation demand. Landscaped areas are proposed to drain or serve as stormwater filtration or storage or include swales and/or drainage catch basins to drain excess runoff. Plantings would meet the requirements of state-mandated Water Efficient Landscape Ordinance, which limits the amount of irrigation water that can be used on-site.

As shown in Table 4.1-6, required compliance with regulations from various agencies and UC goals and policies, and the Project's design features, would ensure that the Project would be consistent and support all applicable control measures from the *2017 Clean Air Plan*.

Further, the Project would not cause disruption or delay the implementation of any of the *2017 Clean Air Plan* control measures. Projects that would hinder implementation of control measures are projects that would preclude the extension of a transit line or bike path or projects that propose excessive parking beyond minimum parking requirements. The Project is an existing use located within half a mile of a high-quality transit stop and would not affect transit services or the existing bicycle or pedestrian infrastructure in the vicinity. Therefore, the Project would not obstruct implementation of any measures in the *2017 Clean Air Plan* that aim to improve connectivity and reduce transportation-related emissions.

Overall, the Project would not hinder, or delay implementation of any control measures contained in the *2017 Clean Air Plan* and would therefore be consistent with the BAAQMD's *2017 Clean Air Plan*. This impact would be less than significant.

Mitigation: None required.

Impact AIR-2: Implementation of the NHB Project would not 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)*

Construction

As stated above, the Bay Area is designated a non-attainment air basin for criteria pollutants ozone, PM_{10}, and $PM_{2.5}$. Project construction would result in the emission of ozone precursor pollutants (NOx and ROGs) as well as PM_{10}, and $PM_{2.5}$, which would further contribute to non-attainment issues in the area. Sources of criteria air pollutant emissions during construction of the Project include:

- The use of heavy-duty construction equipment such as excavators, scrapers, and loaders during the various phases of construction;
- Heavy-duty truck trips hauling materials and equipment, and from construction workers traveling to and from the Project site; and
- Paving operations and the application of asphalt, architectural coatings (i.e., paints) and other building materials during the finishing phases, which would release ROG emissions.

As discussed in Chapter 3, *Project Description*, the Project would involve approximately 435,600 gsf of new building construction (including new hospital building, parking structure, and the site support building). Approximately 110,700 gsf of existing buildings would be demolished or removed. Approximately 30,000 gsf of space in the existing buildings would be renovated. The Project would also necessitate excavation and grading activities at the Project site; street and sidewalk construction; installation of utilities; and exterior hardscaping and landscaping improvements. The Project would require excavation of approximately 55,000 cubic yards (cy) of materials, including existing demolished building materials and soil, to be off-hauled from the site. In addition, approximately 4,500 cy of materials (e.g., aggregate base, topsoil, etc.) would be imported to the Project site.

Table 4.1-7 presents the Project's average daily unmitigated emissions of construction-related criteria air pollutants by year using the methodology detailed in the *Approach to Analysis*, above. This table also compares estimated emissions to BAAQMD's significance thresholds for construction-phase emissions. Refer to Appendix AIR for details of calculations of construction-related emissions.

TABLE 4.1-7
UNMITIGATED NHB PROJECT AVERAGE DAILY CONSTRUCTION CRITERIA POLLUTANT EMISSIONS BY YEAR

Construction Year	Average Daily Emissions (pounds per day)[a,b]			
	ROG	NO_X	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
2024	0.7	**15.1**	0.2	0.2
2025	2.3	**22.8**	0.3	0.3
2026	2.5	**21.1**	0.2	0.2
2027	2.7	**22.9**	0.2	0.2
2028	2.8	**24.3**	0.2	0.2
2029	2.8	**24.0**	0.2	0.2
2030	1.3	**4.4**	0.1	0.1
2031	0.2	**1.9**	0.03	0.03
2032	0.2	**1.7**	0.02	0.03
2033	0.2	**1.7**	0.02	0.03
Overall Project Average	1.8	**15.3**	0.2	0.2
BAAQMD Construction Threshold	**54**	**54**	**82**	**54**
Exceeds Threshold?	No	No	No	No

NOTES:

NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

a. **Bold values** = threshold exceedance.
b. Average daily construction emissions represent total annual emissions divided by workdays per year. Overall Project average is estimated by dividing the total emissions over the construction period by the total number of workdays over the construction period. It is not the sum of the average daily estimates for the individual construction years.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

As shown in Table 4.1-7, unmitigated emissions of ROG, NOx, exhaust PM_{10} and exhaust $PM_{2.5}$ from Project construction would be well below the BAAQMD's average daily thresholds of significance in all construction years from 2024 to 2033 resulting in a less than significant impact from Project construction.

The BAAQMD has taken a qualitative approach to addressing mass criteria pollutant emissions of fugitive dust from construction activities and considers any project that implements the

BAAQMD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions to not result in a significant impact with respect to emissions of fugitive dust. The BAAQMD-recommended measures would be implemented as part of the Project and therefore, the impact from fugitive dust emissions during construction would be considered less than significant.

Operation

Table 4.1-8 presents operational criteria air pollutant emissions of the Project from on-site area sources (e.g., landscape maintenance, architectural coatings, use of consumer products such as cleaning products), testing and operation of emergency generators, and on-road vehicle trips generated by the Project. Project emissions were calculated using the methodology detailed in the *Approach to Analysis*, above. Please refer to Appendix AIR for details of calculations of operational emissions. Overall, NOx emissions show an incremental decrease with the Project when compared to existing conditions. This is because the reduction in natural gas use due to demolition of existing structures as part of the Project would more than make up for the NOx increase from increase in VMT due to the Project.

TABLE 4.1-8
NHB PROJECT INCREASE IN AVERAGE DAILY AND ANNUAL OPERATIONAL CRITERIA POLLUTANT EMISSIONS

Source	Average Daily Emissions (pounds per day) [a,b]				Annual Emissions (tons per year) [a]			
	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total	ROG	NO_X	PM_{10} Total	$PM_{2.5}$ Total
Area[c]	**6.9**	**0.09**	<0.01	<0.01	**1.25**	0.02	<0.01	<0.01
Energy Use – Natural Gas [d]	-0.84	-15.28	-1.2	-1.2	-0.15	-2.8	-0.2	-0.2
Emergency Generators [e]	**0.8**	**2.7**	0.1	0.1	**0.14**	0.49	0.02	0.02
Mobile [f]	**3.9**	**6.0**	6.0	1.1	**0.71**	1.1	1.1	0.2
Helicopter Transport	**<0.001**	**<0.001**	**<0.001**	**<0.001**	**<0.01**	0.01	<0.001	<0.001
Total	**10.7**	**-6.5**	4.9	0.02	**1.9**	-1.2	0.9	0.004
BAAQMD Threshold	**54**	**54**	**82**	**54**	**10**	**10**	**15**	**10**
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

NOTES:

NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

a. **Bold values** indicate exceedance of threshold
b. Average daily operational emissions represent total annual emissions divided by 365 operating days per year.
c. Emissions presented are net new: proposed area source emissions minus emissions removed from demolition of existing structures.
d. The Project is proposed as an all-electric project with no natural gas infrastructure. The reduction in emissions shown is from the proposed demolition of existing structures.
e. Emissions estimated for up to three 2000 kW emergency generators that meet Tier 4 standards operation for 50 hours of non-emergency use and 100 hours of emergency use per year.
f. Emissions presented are based on net new VMT generated by the Project based on data provided by the transportation consultant.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

As shown in Table 4.1-8, the Project's operational emissions would not exceed either BAAQMD's daily or annual significance thresholds for ROG, NO_X, PM_{10}, and $PM_{2.5}$. Thus, the Project would result in a less-than-significant impact with respect to operational emissions of criteria air pollutants for which the SFBAAB is designated non-attainment.

Mitigation: None required.

Impact AIR-3: Implementation of the NHB Project would not expose sensitive receptors to substantial pollutant concentrations. *(Less than Significant)*

Construction Health Risk

Project health risks from construction-phase emissions of TACs (DPM and $PM_{2.5}$) were calculated using the methodology detailed in the *Approach to Analysis*, above. Please refer to Appendix AIR for details of calculations of health risk values. The results of the construction HRA for the Project are summarized in **Table 4.1-9**. As shown in the table, the unmitigated incremental lifetime cancer risk, non-cancer chronic Hazard Index, and annual average $PM_{2.5}$ concentrations at all receptor types analyzed would be below the respective BAAQMD project-level thresholds. Therefore, Project construction would result in a less than significant impact with respect to exposure of sensitive receptors to substantial TAC concentrations.

TABLE 4.1-9
UNMITIGATED HEALTH RISKS FROM NHB PROJECT CONSTRUCTION

Receptor Type/Emissions Source	Cancer Risk (# in 1 million)	Chronic HI (unitless)	Annual Average $PM_{2.5}$ Concentration (μg/m³)
MEI – Resident Infant Receptor [a]			
Project Construction	6.1	0.004	0.04
Significance Threshold	10	1.0	0.3
MEI – Daycare Infant Receptor [b]			
Project Construction	8.2	0.001	0.01
Significance Threshold	10	1.0	0.1
MEI – Worker Receptor [c]			
Project Construction	0.6	0.003	0.03
Significance Threshold	10	1.0	0.3

NOTES:
μg/m³ = micrograms per cubic meter; HI = Hazard Index; MEI = Maximally Exposed Individual; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

a. The resident child MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located in the residential neighborhood between SR 24 and Shattuck Avenue to the east of the Project site. Exposure is assumed to begin at the start of the third trimester of an unborn child.
b. The daycare MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located at the Mechita Daycare along Shattuck Avenue approximately 750 feet east of the Project site. Daycare exposure is conservatively assumed to begin at 6 weeks of age and end at 5 years of age when the children transition to school.
c. The worker MEI for cancer risk, HI and annual average $PM_{2.5}$ concentration is located at the UCSF BCH Oakland Outpatient Center 2 (OPC 2), located north of the Project site across 52nd Street.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

Operational Health Risk

Operational sources of health risk associated with the Project would primarily include up to three diesel fueled emergency generators and an increase in the number of trucks and TRUs idling at the proposed loading dock facilities. Operational incremental lifetime cancer risk, chronic hazard index and annual average $PM_{2.5}$ concentrations associated with the Project at all receptor types would be below the respective BAAQMD thresholds, as shown in **Table 4.1-10**. Therefore, health risks associated with operational sources included in the Project would be less than significant.

TABLE 4.1-10
UNMITIGATED HEALTH RISKS FROM NHB PROJECT OPERATION

Receptor Type/Emissions Source	Cancer Risk (# in 1 million)	Chronic HI (unitless)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)
MEI – Resident Infant Receptor [a]			
Project Operations	5.3	0.001	0.007
Significance Threshold	10	1.0	0.3
MEI - Daycare Infant Receptor [b]			
Project Operations	7.5	0.001	0.004
Significance Threshold	10	1.0	0.3
MEI – Worker Receptor [c]			
Project Operations	1.7	0.001	0.007
Significance Threshold	10	1.0	0.3

NOTES:
$\mu g/m^3$ = micrograms per cubic meter; HI = Hazard Index; MEI = Maximally Exposed Individual; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

a. The resident child MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located in the residential neighborhood between SR 24 and Shattuck Avenue east of the Project site. Exposure is assumed to begin in the third trimester of an unborn child.
b. The daycare MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located at the Mechita Daycare along Shattuck Avenue approximately 750 feet east of the Project site. Daycare exposure is conservatively assumed to begin at 6 weeks of age and end at 5 years of age when they transition to school.
c. The worker MEI for cancer risk, HI and annual average $PM_{2.5}$ concentration is located at business along Shattuck Avenue east of the Project site.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

Combined Construction and Operational Health Risk

Table 4.1-11 shows the combined construction and operational health risks for the various receptor types. The combined health risks were estimated assuming that the maximally exposed receptor for construction would continue to be exposed to the Project's operational emissions once construction has ended. As shown in the table, the incremental lifetime cancer risk, chronic hazard index and annual average $PM_{2.5}$ concentrations for all receptor types would be below the applicable BAAQMD thresholds. Therefore, the Project would result in a less than significant health risk impact when construction and operation are considered together.

TABLE 4.1-11
UNMITIGATED COMBINED HEALTH RISKS FROM NHB PROJECT CONSTRUCTION AND OPERATION

Receptor Type/Emissions Source	Cancer Risk [a] (# in 1 million)	Chronic HI [b] (unitless)	Annual Average $PM_{2.5}$ Concentration [b] ($\mu g/m^3$)
MEI – Resident Infant Receptor [c]			
Project Construction + Operations	7.5	0.004	0.04
Significance Threshold	10	1.0	0.3
MEI - Daycare Infant Receptor [d]			
Project Construction + Operations	8.2	0.001	0.01
Significance Threshold	10	1.0	0.3
MEI – Worker Receptor [e]			
Project Construction + Operations	0.6	0.004	0.03
Significance Threshold	10	1.0	0.3

NOTES:
$\mu g/m^3$ = micrograms per cubic meter; HI = Hazard Index; MEI = Maximally Exposed Individual; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

a. The combined cancer risk shown is at the construction MEI assuming that the receptor continues to be exposed to the Project's operational emissions once construction has ended. It is not the sum of the Project's maximum construction and maximum operational risks. The operational risk does not contribute to the combined risk at the daycare MEI as the exposure duration for daycare receptors is between 6 weeks and 5 years of age, after which they transition to school and are no longer at the MEI location. During this period, they are only exposed to 5 years of construction emissions. For residential and worker MEI, the combined risk is the sum of construction risk and operational risk at that location (not the maximum operational risk) with age of operational exposure adjusted to start after construction ends.
b. The combined chronic HI and annual average $PM_{2.5}$ concentrations are annual numbers and not the sum of construction and operation as construction and operations will not take place simultaneously. It is determined using the higher value of construction and operations.
c. The resident child MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located in the residential neighborhood between SR 24 and Shattuck Avenue to the east of the Project site. Construction exposure is assumed to begin at the start of the third trimester of an unborn child and operational exposure will start at 8.5 years of age after end of construction.
d. The daycare MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located at the Mechita Daycare along Shattuck Avenue approximately 750 feet east of the Project site. Daycare exposure is conservatively assumed to begin at 6 weeks of age and end at 5 years of age when they transition to school.
e. The worker MEI for cancer risk, HI and annual average $PM_{2.5}$ concentration is located at the UCSF BCH Oakland OPC 2 building north of the Project site across 52nd Street.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

Mitigation: None required.

Cumulative Impacts

The SFBAAB is a nonattainment area for both the federal and State ozone, PM_{10} and $PM_{2.5}$ standards; therefore, an air quality impact already exists. Additional emissions of ozone precursors NO_X or ROG over threshold amounts would further degrade air quality related to ozone. Impact AIR-2 evaluates whether the project's contribution to this significant impact would be considerable. The BAAQMD's project-level criteria air pollutant thresholds are based on levels below which new sources would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The potential for the Project to result in significant criteria air pollutant emissions, and therefore a cumulatively considerable contribution to non-attainment criteria pollutants, is addressed under Impact AIR-2. Therefore, no separate cumulative criteria air pollutant analysis is required.

Impact AIR-1 addresses potential impacts related to consistency with the BAAQMD *2017 Clean Air Plan*. Because the *2017 Clean Air Plan* focuses on reducing population exposure to air pollutants throughout the region, the assessment in Impact AIR-1 is a cumulative analysis in itself as it assesses consistency with a region-wide air quality plan. Therefore, a separate cumulative assessment of consistency with the *2017 Clean Air Plan* is not required.

Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity would result in significant cumulative health risk impacts. *(Significant and Unavoidable)*

Table 4.1-12 tabulates health risks from existing permitted stationary sources and mobile sources (highways, major streets and rail) within 1,000 feet of the residential MEI. Though the daycare MEI shows a higher Project-level risk, the daycare receptors would be located at that location for a maximum of 5 years after which they would not be exposed to health risks from the Project or background sources. On the other hand, the HRA assumes that the residential receptors would be at the same location for a period of 30 years. Therefore, from a cumulative standpoint, the exposure to residential receptors would be higher over the lifetime.

As shown in the table, existing background health risks without the Project already exceed the BAAQMD's cumulative thresholds for incremental lifetime cancer risk and annual average $PM_{2.5}$ concentration of 100 in one million and 0.8 $\mu g/m^3$, respectively. The existing cumulative chronic non-cancer Hazard Index is less than the cumulative threshold of 10.0. Therefore, a significant cumulative health risk impact already exists in the area. Construction and operation of the Project would further contribute to this existing significant cumulative impact. As the Project's health risks, when combined with background health risks, would exceed the BAAQMD's cumulative thresholds for incremental lifetime cancer risk and annual average $PM_{2.5}$ concentration, the cumulative impact would be significant. It should be noted that, as shown in Table 4.1-12, the Project's contribution to the cumulative impact at the off-site residential MEI is a maximum cancer risk level of 7.5 per million and 0.04 $\mu g/m^3$ in annual average $PM_{2.5}$ concentration, both of which are below the Project-level health risk thresholds. Therefore, the Project's contribution to the cumulative health risk would be relatively minor. Nevertheless, Mitigation Measure C-AIR-1: Clean Construction Equipment has been identified to further reduce the Project's contribution to the cumulative health risk.

TABLE 4.1-12
SUMMARY OF CUMULATIVE EXCESS LIFETIME CANCER RISK, NON-CANCER CHRONIC RISK, AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATION AT THE EXISTING OFF-SITE RESIDENTIAL MEI [a]

Emissions Source/Receptor Type	Excess Lifetime Cancer Risk (per million)	Non-Cancer Chronic Hazard Index (unitless)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)
Project Contribution			
Project Construction [b] + Operations	7.5	0.004	0.04
Background Contributions from BAAQMD Permitted Stationary Sources within 1,000 feet of the Project MEI [c]			
UCSF BCH Oakland [d]	83.6	0.055	0.6
City of Oakland Environmental Services Division – Emergency Generator	0.3	<0.001	<0001
ARCO Facility – Gasoline Station	0.4	0.002	0.0
Background Contribution from Mobile Sources at the Project MEI [e]			
Roadways, Highways and Major Streets	92.4	0.34	2.1
Cumulative - Project Plus Background			
Background Total	**176.8**	0.34	**2.64**
Project Contribution	7.5	0.004	0.04
Cumulative Total	**184.3**	0.35	**2.68**
Cumulative Significance Thresholds	100	10.0	0.8
Significant?	Yes	No	Yes

NOTES:

$PM_{2.5}$ = particulate matter that is 2.5 microns or less in diameter; = $\mu g/m^3$ micrograms per cubic meter; MEI = maximally exposed individual

Bold values = threshold exceedance

a. The resident child MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located in the residential neighborhood between SR 24 and Shattuck Avenue to the east of the Project site.
b.. For onsite construction, $PM_{2.5}$ concentrations include exhaust and fugitive dust emissions as required by the most recent BAAQMD Guidelines.
c.. Health risks from BAAQMD permitted stationary sources available through the BAAQMD's Stationary Source Screening Map.
d.. Please see Table 4.1-3.
e. Background health risks from mobile sources derived from BAAQMD's Mobile Source Screening Map.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

Mitigation Measure C-AIR-1: Clean Construction Equipment

a. Electric engines shall be used for all equipment that is commercially available as plug-in or battery-electric equipment during each construction phase and activity. Portable equipment shall be powered by grid electricity if available. Electric equipment shall include, but not be limited to, concrete/industrial saws, sweepers/scrubbers, aerial lifts, welders, air compressors, fixed cranes, forklifts, and cement and mortar mixers, pressure washers, and pumps. To qualify for an exception, UCSF shall require construction contractors to provide evidence supporting the conclusion that electric equipment is not commercially available and shall use the next cleanest piece of off-road equipment in terms of DPM and $PM_{2.5}$. "Commercially available" is defined as either: (1) being used for other large-scale projects in the region occurring at the same time; (2) can be obtained without significant delays to critical-path timing of construction; or (3) available within the larger northern California region. UCSF shall be responsible for the final determination of commercial availability, based on all the facts and circumstances at the time the determination is made. For UCSF to make a determination that such equipment is commercially unavailable, the operator must submit documentation from a minimum of three (3) electric off-road equipment dealers demonstrating the inability to obtain the required electric equipment needed within 6 months.

b. The construction contractor shall ensure that all diesel off-road equipment shall have engines that meet the Tier 4 Final off-road emission standards, as certified by CARB, except as provided for in this section. This requirement shall be verified through submittal of an equipment inventory that includes the following information: (1) Type of Equipment, (2) Engine Year and Age, (3) Number of Years Since Rebuild of Engine (if applicable), (4) Type of Fuel Used, (5) Engine HP, (6) Verified Diesel Emission Control Strategy (VDECS) information if applicable and other related equipment data. A Certification Statement is also required to be made by the contractor for documentation of compliance and for future review by the BAAQMD as necessary. The Certification Statement shall state that the contractor agrees to compliance and acknowledges that a violation of this requirement shall constitute a material breach of contract.

   The requirement for Tier 4 Final equipment may be waived only under the following unusual circumstances: if a particular piece of off-road equipment with Tier 4 Final standards is technically not feasible or not commercially available; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or there is a compelling emergency need to use other alternate off-road equipment. For purposes of this mitigation measure, "commercially available" shall mean the availability of Tier 4 Final engines similar to the availability for other large-scale construction projects in the region occurring at the same time and taking into consideration factors such as (i) potential significant delays to critical-path timing of construction for the project and (ii) geographic proximity to the project site of Tier 4 Final equipment. Sufficient documentation must be provided when seeking any waiver described above. If the waiver is granted, the contractor must use the next cleanest piece of off-road equipment that is commercially available, or another alternative that results in comparable reductions of DPM and $PM_{2.5}$ emissions.

Significance after Mitigation: Implementation of Mitigation Measure C-AIR-1 would require the use of clean construction equipment which would substantially reduce the Project's contribution to cumulative health risks. Proposed back-up power generators would already meet tier 4 engine standards. Additional mitigation measures are not available. As shown in **Table 4.1-13**, even with mitigation, the combined health risk impact of the Project and background sources in the area would exceed the BAAQMD's cumulative thresholds for incremental lifetime cancer risk and annual average $PM_{2.5}$ concentration. Therefore, this impact would remain significant and unavoidable.

TABLE 4.1-13
SUMMARY OF MITIGATED CUMULATIVE EXCESS LIFETIME CANCER RISK, NON-CANCER CHRONIC RISK, AND ANNUAL AVERAGE $PM_{2.5}$ CONCENTRATION AT THE EXISTING OFF-SITE RESIDENTIAL MEI [a]

Emissions Source/Receptor Type	Excess Lifetime Cancer Risk (per million)	Non-Cancer Chronic Hazard Index (unitless)	Annual Average $PM_{2.5}$ Concentration ($\mu g/m^3$)
Background Total [b]	**176.8**	0.34	**2.64**
Project Contribution as Mitigated [c]	3.0	0.003	0.02
Cumulative Total	**179.8**	0.34	**2.66**
Cumulative Significance Thresholds	100	10.0	0.8
Significant?	Yes	No	Yes

NOTES:

$PM_{2.5}$ = particulate matter that is 2.5 microns or less in diameter; = $\mu g/m^3$ micrograms per cubic meter; MEI = maximally exposed individual

Bold values = threshold exceedance

. The resident child MEI for cancer risk, chronic HI and annual average $PM_{2.5}$ concentration is located in the residential neighborhood between SR 24 and Shattuck Avenue to the east of the Project site.

.. See Table 4.1-11 for details.

Mitigated risk from implementation of Mitigation Measure C-AIR-1.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR of this EIR.

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4.2 Biological Resources

This section assesses the potential for construction and operation of the NHB Project to result in significant impacts on biological resources. The section includes a description of the existing environmental setting as it relates to biological resources; provides a regulatory framework that discusses applicable hospital plans and policies, and federal, State, and local laws and regulations; identifies criteria used to determine impact significance; and discusses potential impacts, and regulatory mechanisms and/or feasible mitigation measures, as necessary, to reduce significant impacts. Although the surveys and some of the reports referenced in this section that are specific to the Project site were prepared between 2013 and 2015, conditions at the Project site remain the same and thus the reports retain their informational value.

4.2.1 Environmental Setting

The site of the UCSF BCH Oakland campus site is approximately 11 acres in North Oakland, generally bounded by 53rd Street on the north, State Route (SR) 24 on an embankment to the east, and Martin Luther King (MLK) Jr. Way to the south and west. The campus site is surrounded by urban residential development and major roadways. Open space on the approximate 5.74-acre Project site is primarily limited to a courtyard between the Hospital's A/B and B/C wings with mature magnolia trees and a small butterfly garden. The SR 24 embankment located on the eastern portion of the Project site is also vegetated, containing a number of trees. In addition, street trees are present along 52nd Street and MLK Jr. Way, adjacent to the Project site. Based on a tree survey conducted at the Project site, there are 95 trees located on or adjacent to the Project site (Woodreeve Consulting, 2023). Elevations on the Project site generally range from about 90 to 100 feet above mean sea level. No open creek or stream channels cross the Project site; Temescal Creek is culverted east-to-west beneath the Project site.

Vegetation Communities and Wildlife Habitats

The campus site is densely developed with hospital facilities, roadways, former residential structures, and commercial buildings. The only natural habitats present on the Project site are urban and landscaped vegetation; these habitats are described below.

Urban

Urban areas include buildings, roadways, utilities and other built features, with ground cover sparse, weedy vegetation or barren land. Wildlife species utilizing urban areas are typically well-adapted to the presence of humans and their activities. Urban wildlife species may include common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virgiana*), and non-native species such as Norway rat (*Rattus norvegicus*) and feral cats. Other species which utilize urban areas in Oakland may include red-tailed hawk (*Buteo jamaicensis*), which prey on rodents, and peregrine falcon (*Falco peregrinus anatum*), which prey almost exclusively on small-to-medium-sized birds. Bats may also colonize abandoned and disused buildings.

Landscaped

Landscaped areas support ornamental trees, shrubs and maintained non-native vegetation. Ornamental vegetation in an otherwise urban environment can provide cover, foraging, and nesting habitat for a variety of bird species, as well as reptiles and small mammals tolerant of disturbance and human presence. The Project site includes a notable ornamental southern magnolia (*Magnolia grandiflora*) tree, over 150 years old with an approximately 78-inch diameter, in the courtyard of the Hospital's A/B wing. While past the normal lifespan for the species, this tree is considered to be in fair/good condition (Davey, 2013).

Birds which may be found in ornamental and landscaped vegetation include American robin (*Turdus migratorius*), house finch (*Carpodacus mexicanus*), dark-eyed junco (*Junco hyemalis*), western scrub jay (*Aphelocoma californica*), mourning dove (*Zenaida macroura*), and Anna's hummingbird (*Calypte anna*), as well as non-native birds such as house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*). Reptiles using this type of habitat may include western terrestrial garter snake (*Thamnophis elegans*) and western fence lizard (*Sceloporus occidentalis*). Mammals present in landscaped areas may include striped skunk (*Mephitis mephitis*), raccoon, Virginia opossum, roosting bats, Botta's pocket gopher (*Thomomys bottae*) and other small rodents.

Sensitive Natural Communities, Including Wetlands

The California Natural Diversity Database (CNDDB) reports no sensitive natural community occurrences on the campus site (CDFW, 2022). Furthermore, no potentially jurisdictional wetlands or daylighted surface waters are located on the campus site. See also discussion of Wetlands and Other Waters of the United States, in Section 4.2.2 below.

Wildlife Movement Corridors

Wildlife movement corridors link habitat areas and mitigate the effects of fragmentation by allowing wildlife to move between remaining habitats, in turn allowing depleted populations to be replenished and promoting genetic exchange between separate populations. Due to urban development of East Bay lowlands, remaining wildlife habitat is largely limited to disconnected small parks and open space areas. These areas sustain corridors for flying wildlife, including butterflies, bats, and birds, but are difficult for mammals, reptiles and amphibians to reach due to rugged terrain, urbanization, vehicular traffic, changes in vegetation, or areas of human disturbance. The Project site is surrounded by major roadways and urban development and is not part of a terrestrial movement corridor.

The San Francisco Bay Area is an important migratory stopover for birds along the Pacific Flyway—one of the four major migratory routes in North America. Raptors, songbirds, shorebirds and waterfowl stop in the Oakland area, including East Bay Regional Parks land, the Berkeley Marina, UC Berkeley campus, Lake Merritt and other open space areas, during fall and spring migrations. However, there are few refuges on the BCH campus site offering rest habitat during bird migration. Thus, the Project site does not constitute part of an aerial wildlife movement corridor.

Special-Status Species

For the purpose of this EIR, special-status species include:

- Plant and wildlife species listed as rare, threatened, or endangered under the federal or State endangered species acts;
- Species that are candidates for listing under either federal or State law;
- Species designated by the USFWS as species of concern or by the CDFW as species of special concern;[25]
- Species designated as "fully protected" by the State (there are about 35, most of which are also listed as either endangered or threatened);
- Raptors (birds of prey), which are specifically protected by California Fish and Game Code Section 3503.5, thus prohibiting the take, possession, or killing of raptors and owls, their nests, and their eggs;[26] and
- Species, such as candidate species, that may be considered rare or endangered pursuant to Section 15380(b) of the *CEQA Guidelines*.

A comprehensive list of the special-status plant and wildlife species that may occur or have the potential to occur within the campus site was developed based on data obtained from the CNDDB, the California Native Plant Society (CNPS) Electronic Inventory, and the USFWS and other biological literature pertaining to the bioregion (CDFW, 2023; CNPS, 2023; U.S.FWS 2023). Potential for occurrence was determined to be low, moderate, or high based on habitat suitability, previous special-status species record locations, and current site conditions. These species lists are provided in **Table BIO-1** in **Appendix BIO**.

Special-Status Plants

Table BIO-1 in Appendix BIO presents special-status plant species that occur in the regional vicinity (i.e., Oakland West 7.5-minute USGS quadrangle and the eight surrounding quadrangles), and their potential to occur on the campus site. All special-status plant species recorded in the vicinity are considered to have no or low potential to occur due to the developed and disturbed nature of the campus site, with the only vegetation being ruderal weeds or landscaping.

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[25] A California species of special concern is one that: has been extirpated from the state; meets the State definition of threatened or endangered but has not been formally listed; is undergoing or has experienced serious population declines or range restrictions that put it at risk of becoming threatened or endangered; and/or has naturally small populations susceptible to high risk from any factor that could lead to declines that would qualify it for threatened or endangered status.

[26] The inclusion of birds protected by Fish and Game Code Section 3503.5 is in recognition of the fact that these birds are substantially less common in California than most other birds, having lost much of their habitat to development, and that the populations of these species are therefore substantially more vulnerable to further loss of habitat and to interference with nesting and breeding than most other birds. It is noted that a number of raptors and owls are already specifically listed as threatened or endangered by State and federal wildlife authorities.

Special-Status Wildlife

Table BIO-1 in Appendix BIO presents special-status wildlife species known to occur in the region (i.e., Oakland West and eight surrounding quadrangles), and their potential to occur on the campus site. Of the special-status wildlife listed in Table BIO-1, only species classified as having a moderate or high potential for occurrence at the site were considered in the impact analysis. Species addressed in detail include the following:

- Peregrine falcon and other nesting birds
- Roosting bats

Aside from breeding birds and roosting bats, special-status wildlife species are not likely to occur within the campus site, which is paved or dominated by non-native ornamental or ruderal species, which provide poor habitat for most wildlife. Although the campus is within the range of the federal threatened Alameda whipsnake (*Coluber lateralis euryxanthus*), this snake prefers rocky coastal scrub or chaparral habitat, which are not present on this urban, developed site or in its vicinity. Thus, there is low potential for Alameda whipsnake to occur on the Project site.

Species with moderate or higher potential to occur on the Project site are described below.

Peregrine falcon and other migratory nesting birds. Peregrine falcon is a California Fully Protected species pursuant to California Fish and Game Code Section 3511, though it has been de-listed both in California and nationally. It nests on structures in Berkeley and Oakland and preys on pigeons and other birds. Several other raptors may nest in the vicinity of the site, including red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), and great horned owl (*Bubo virginianus*), as well as other migratory special-status and common birds. The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code protect raptors and native migratory birds and breeding birds (see Section 4.2.2, below).

As discussed above, the San Francisco Bay Area is an important migratory stopover for birds along the Pacific Flyway—one of the four major migratory routes in North America. Raptors, songbirds, shorebirds and waterfowl stop in Lake Merritt, the UC Berkeley campus, East Bay Regional Parks lands, and other open space during fall and spring migrations. Ornamental trees on the campus site, including the large magnolia tree, may provide occasional habitat for birds, including special-status birds, to rest along their migration route.

Roosting bats. Tree-roosting bats, including western red bat, (*Lasiurus blossevillii*) a Western Bat Working Group (WBWG) high priority species, and hoary bat (*Lasiurus cinereus*), a WBWG medium priority species, and/or Townsend's big-eared bat (*Corynorhinus townsendii)*, a Species of Special Concern may roost in tree foliage, under exfoliating bark of trees, in tree cavities, or under roof eaves or inside disused building areas on or near the Project site. Collectively, bat species have moderate potential to occur onsite.

Designated Critical Habitat

The USFWS designates critical habitat for certain species listed by the agency as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the federal Endangered Species Act (ESA) as those lands within a listed species' current range that contain the physical or biological features considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. The campus site is not located within designated critical habitat for any federally listed species.

4.2.2 Regulatory Framework

Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) protects the fish and wildlife species, and their habitats that have been identified by the USFWS or National Marine Fisheries Service (NMFS) as threatened or endangered. The term "endangered" refers to species, subspecies, or distinct population segments that are in danger of extinction through all or a significant portion of their range. The term "threatened" refers to species, subspecies, or distinct population segments that are likely to become endangered in the near future.

Under Section 7 of the ESA, the federal agency conducting, funding, or permitting an action (the federal lead agency) must consult the USFWS and/or NMFS, as appropriate, to ensure that the proposed action will not jeopardize endangered or threatened species or destroy or adversely modify designated critical habitat. If a proposed project "may affect" a listed species or designated critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the expected effect. In response, the USFWS issues a biological opinion determining whether the proposed action (1) may either jeopardize the continued existence of one or more listed species (jeopardy finding) or result in the destruction or adverse modification of critical habitat (adverse modification finding), or (2) will not jeopardize the continued existence of any listed species (no jeopardy finding) or will not result in adverse modification of critical habitat (no adverse modification finding).

Critical Habitat

Under the ESA, the Secretary of the Interior (or the Secretary of Commerce, as appropriate) formally designates critical habitat for certain federally listed species and publishes these designations in the Federal Register. Critical habitat is not automatically designated for all federally listed species; so many listed species have no formally designated critical habitat. There is no federally designated critical habitat on the Project site.

Federal Migratory Bird Treaty Act

The federal MBTA (United States Code, Title 16, Section 703, Supplement I, 1989) prohibits taking, killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests of all species of birds that are included in the "List of Migratory Birds" published in the Federal Register in 1995.

Wetlands and Other Waters of the United States

Wetlands are ecologically complex habitats that support a variety of both plant and animal life. The federal government defines and regulates wetlands and other waters in Section 404 of the Clean Water Act as “areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support (and do support, under normal circumstances) a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b] and 40 CFR 230.3).

State

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFW has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code, Section 2070). The CDFW also maintains a list of “candidate species,” which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, the CDFW maintains lists of “species of special concern,” which serve as watch lists.

The CESA prohibits the take of plant and animal species designated by the Fish and Game Commission as either threatened or endangered in the State of California. “Take” in the context of the CESA means to hunt, pursue, kill, or capture a listed species, as well as any other actions that may result in adverse impacts when attempting to take individuals of a listed species. The take prohibitions also apply to candidates for listing under the CESA. However, Section 2081 of the CESA allows the CDFW to authorize exceptions to the State’s take prohibition for educational, scientific, or management purposes.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species could be present on the project area and determine whether the proposed project could have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that could affect a candidate species.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act Section 13260 of the California Water Code requires “any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements).” Under the Porter-Cologne Water Quality Control Act definition, the term “waters of the state” is defined as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Although all waters of the United States that are within the borders of California are also waters of the state, the converse is not true—in California, waters of the United States represent a subset of waters of the state. Therefore, the State of California through each of nine Regional Water Quality Control Boards retains authority to regulate discharges of waste into any waters of the State, regardless of whether the U.S. Army Corps of Engineers has concurrent jurisdiction under Clean Water Act Section 404.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed the CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. The CESA expanded on the original NPPA and enhanced legal protection for plants. The CESA established threatened and endangered species categories and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, three listing categories for plants are employed in California: rare, threatened, and endangered.

Sensitive Natural Communities

Sensitive natural communities are identified as such by the CDFW's Natural Heritage Division and include those that are naturally rare and those whose extent has been greatly diminished through changes in land use. The CNDDB tracks 135 such natural communities in the same way that it tracks occurrences of special-status species: information is maintained on each site in terms of its location, extent, habitat quality, level of disturbance, and current protection measures. The CDFW is mandated to seek the long-term perpetuation of the areas in which these communities occur. While there is no statewide law that requires protection of all sensitive natural communities, CEQA requires consideration of the potential impacts of a project on biological resources of statewide or regional significance, including sensitive natural communities.

California Fish and Game Code

Under Section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests and eggs. Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) allow the designation of a species as fully protected. This is a greater level of protection than is afforded by CESA. Except for take related to scientific research, all take of fully protected species is prohibited.

UCSF

UCSF 2014 LRDP

The 2014 LRDP indicates that UCSF's open spaces are mainly limited to relatively small courtyards and plazas surrounded by campus buildings, and some tree-lined streets and landscaped areas. These open spaces and landscaped areas provide valuable opportunities for people to relax, socialize, eat lunch, study, play, heal, or otherwise be outdoors. The 2014 LRDP further indicates that UCSF is committed to improving existing open space and creating new open space areas as part of new building proposals, and that these will be improved or developed in accordance with the universal planning and design principles in the UCSF *Physical Design Framework*.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible. City regulations that are germane to the biological resource impacts analysis are summarized below.

Oakland Tree Protection Ordinance (Chapter 12.36)

The City of Oakland Protected Tree Ordinance (Oakland Municipal Code Chapter 12.36) permits removal of protected trees under certain circumstances. To grant a tree removal permit, the City must determine that removal is necessary in order to accomplish one of the following objectives:

- To ensure public health and safety,
- To avoid an unconstitutional taking of property,
- To take reasonable advantage of views,
- To pursue acceptable professional practice of forestry or landscape design, or
- To implement the vegetation management prescriptions in the S-11 site development review zone.

Protected trees include the following:

- California or coast live oak (*Quercus agrifolia*) measuring four inches diameter at breast height (dbh) or larger, and
- Any other tree measuring nine inches dbh or larger except eucalyptus (*Eucalyptus* spp.) and Monterey pine (*Pinus radiata*); provided, however, Monterey pine trees on City property and in development-related situations where more than five Monterey pine trees per acre are proposed to be removed are considered protected trees.

4.2.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) 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?

b) 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?

c) 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?

d) 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?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

g) Exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance?

Criteria Not Analyzed

- ***Adversely affect any (b) riparian habitat or other sensitive natural community, or (c) State or federally protected wetlands.*** No riparian habitat, sensitive natural communities, or wetlands or waters of the U.S., or the State are present on or adjacent to the Project site. There would be no impact from the Project related to this topic.
- ***Conflict with adopted conservation plan.*** No habitat conservation plans or natural community conservation plans cover the campus site. There would be no impact from the Project related to this topic.

Approach to Analysis

Impacts on biological resources are evaluated based on the likelihood that special-status plant and wildlife species or their habitats, and wildlife corridors are present within the campus site (as described in Section 4.2.1, *Environmental Setting*), and the likely effects that construction, operation, and maintenance activities might have on these resources. Special-status resources that have no or low potential to occur on the campus site (as presented in Table BIO-1 in Appendix BIO) are not considered in the impact analysis.

Impact Analysis

Impact BIO-1: Implementation of the NHB Project could 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. (*Less than Significant with Mitigation*)

A list of the special-status plant and wildlife species that have the potential to occur within the Oakland West and eight surrounding quadrangles, was developed from the California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) Electronic Inventory, the U.S Fish and Wildlife Service (USFWS) and pertinent biological literature (see Table BIO-1 in Appendix BIO). Most of the species identified from the region, are associated with specific habitat types, such as dunes, valley foothill grasslands, chaparral, coastal prairie, coastal bluff scrub, marshes and swamps, which are not present on the Project site. Those species that could occur and could be affected are discussed below.

Special-Status Plant Species. The proposed Project would occur within a developed area of the campus site which contains only weedy and ornamental vegetation and no special-status plant species. Consequently, no impact to special-status plants is anticipated from Project construction or operation.

Special-Status Wildlife Species. The Project site contains urban and landscaped areas that support wildlife species well-adapted to the presence of humans and their activities. Project construction would occur over several years, and construction activities would generate noise and related effects that could impact wildlife in the vicinity of the Project site.

As discussed in Section 4.2.1 above, most special-status wildlife species known to occur in the Oakland region are not likely to occur on-site or in the Project vicinity because the campus site is highly developed and lacks habitat for most wildlife. The special-status wildlife species with a moderate potential to occur in the site vicinity include peregrine falcon and other nesting birds, and roosting bats.

Peregrine falcon may nest on tall buildings on the Project site. Other birds may nest in trees or shrubs on the campus site, though they are less likely to nest in busy areas with frequent human and vehicular traffic. Construction equipment associated with clearing, excavation, grading and building construction could generate elevated sound levels that could cause adult birds to abandon nests. Project construction could involve tree removal and if active nests were present in the trees to be removed, nesting birds could be adversely affected. As such, project construction activities could result in potentially significant impacts to nesting birds, including special-status birds. **Mitigation Measure BIO-1a: Protection of Nesting Birds**, included below, would require preconstruction nesting bird surveys and avoidance of active nests. Implementation of this measure would reduce the impact on nesting bird species to a less-than-significant level.

Western red bat, hoary bat and other bat species may potentially roost in trees or buildings. Suitable bat roosting habitat includes tree foliage, underneath exfoliating bark of trees, and in tree cavities, or under building eaves or in disused areas. Construction activities could directly impact roosting bats by removing trees and buildings where roosts are present, and elevated sound levels from heavy construction equipment could cause adult bats to abandon maternity roosts. As such, construction activities could result in potentially significant impacts to roosting bats, including special-status bats. Implementation of **Mitigation Measure BIO-1b**: **Protection of Roosting Bats**, which is included below, would require pre-construction and pre-demolition roosting bat surveys, followed by bat-safe removal if suitable bat habitat is identified in a tree or structure to be removed. Implementation of this measure would reduce the impact on bat species to a less-than-significant level.

Measure BIO-1a: Protection of Nesting Birds

- To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15. If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within

15 days prior to the start of work and shall be submitted to UCSF for review and approval.

- If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.

Mitigation Measure BIO-1b: Protection of Roosting Bats

- Prior to project construction, a qualified bat biologist shall conduct a pre-construction survey for roosting bats in trees to be removed or pruned and structures to be demolished within the work area and within a 50-foot radius of the work area. If no roosting bats are found, no further action is required.

- If a non-maternal roost of bats is found in a tree or structure to be removed or demolished as part of project construction, the individuals shall be safely evicted, under the direction of a qualified bat biologist, by opening the roosting area to allow airflow through the cavity. Removal or demolition should occur no sooner than at least two nights after the initial minor site modification (to alter airflow). This action allows bats to leave during darkness, thus increasing their chance of finding new roosts with a minimum of disturbance. Departure of the bats from the construction area shall be confirmed with a follow-up survey by a qualified bat biologist prior to start of construction.

- If active maternity roosts are found in trees or structures that will be removed or demolished as part of project construction, tree removal or demolition of that tree or structure shall commence and be completed before maternity roosting colonies form (generally before March 1), or shall not commence until after young are flying (generally after July 31). Active maternity roosts shall not be disturbed between March 1 and July 31.

Significance after Mitigation: Less than Significant.

Impact BIO-2: Implementation of the NHB Project could 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. (*Less than Significant with Mitigation*)

The Project site is located in urban North Oakland, bounded by major roadways, and does not provide contiguous habitat for any mammal, reptile or amphibian species because of the presence of developed and disturbed lands on all sides. Thus, no established corridors are present for these terrestrial wildlife species. Migratory birds utilizing the Pacific Flyway do, however, fly through

Oakland during migration, and stop over at habitat areas such as Lake Merritt and East Bay Regional Parks land. While there is no large area of suitable migratory stopover habitat on or near the Project site, migratory birds still pass through the area.

The Project would be built within a developed area and adjacent to other existing buildings, and result in a net increase in overall building development on the Project site. The proposed new hospital building would be taller (8-story) and larger than buildings currently present on-site (which range from 3 to 5 stories); the proposed parking garage would be 5 levels plus rooftop helistop. Bird flights close to man-made structures risk collisions with such structures. Approximately 100 million to 1 billion birds die in North America as a result of building collisions each year (Seewagen, 2017). Daytime collisions occur most often when birds fail to recognize window glass because it reflects clouds and sky. Lighting in high-rise buildings also affects birds during their movement and reproduction.

The proposed new buildings may increase the likelihood of migratory and resident birds striking windows during flight, causing injury or mortality. In addition, potential construction night lighting, and building night lighting could attract migratory birds and increase the likelihood of strike injuries or mortality. These would be considered potentially significant impacts.

UCSF will implement **Mitigation Measure BIO-2: Bird Collision Reduction Measures**, as set forth below, that would be refined in consultation with a qualified expert based on site-specific conditions. Implementation of these measures would reduce the potential adverse effect on resident and migrating birds to a less-than-significant level by reducing injuries associated with night lighting during construction and operation, and requiring design features in new structures to make buildings more visible to birds.

Mitigation Measure BIO-2: Bird Collision Reduction Measures.

Bird safe measures would be developed in consultation with a qualified expert based on site-specific conditions. Preliminary construction and operational bird safe measures may include, but not limited to, the following:

- Construction areas requiring lights shall implement the following measures to the extent feasible:
  - Construction-related lighting shall be fully shielded and focused down to ensure no significant illumination passes beyond the immediate work area.
  - Yellow or orange light shall be used where possible.
  - Construction personnel shall reduce the amount of lighting to the minimum necessary to safely accomplish the work.

Building design shall:

- Avoid installation of lighting in areas where not required for public safety.
- Consider alternatives to all-night, floor-wide lighting when interior lights would be visible from the exterior or when exterior lights must be left on at night, including:

  - Installing motion-sensitive lighting
  - Installing task lighting
  - Installing programmable timers
- Installing lower-wattage, sodium, and yellow-red spectrum lighting fixtures (if compatible with personnel safety requirements)
- Use fully shielded exterior safety lights to contain and direct light away from the sky.
- Employ glazing options, such as use of either fritted glass, Dichroic glass, etched glass, translucent glass, or glass that reflects ultraviolet light in appropriate portions of the building façades.

Significance after Mitigation: Less than Significant.

Impact BIO-3: Implementation of the NHB Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance. (*Less than Significant*)

UCSF is not subject to City policies and regulations on university-controlled property used in furtherance of the University's educational mission, during construction of the Project. However, UCSF will conform to City of Oakland Tree Protection Ordinance (see Section 4.2.2, *Regulatory Framework*) to the maximum extent feasible during tree removal for construction, including marking off protected trees, and replacing trees within the public right-of-way (street trees) in coordination with the City.

Tree and vegetation removal would be required under the Project as a result of clearing, excavation, regrading, and/or other activities. Twenty-eight (28) trees on the Project site and adjacent right-of-way would require removal for construction of the Project (this excludes 50 trees located within the eastern portion of the Project site occupied by the SR 24 embankment, which would be removed separate from the Project). Tree removal necessitated for construction on the Project site would include the southern magnolia tree discussed in Section 4.2.1, *Environmental Setting.* This tree is a non-native ornamental located in a busy courtyard with artificial lighting, and thus, most birds or bats would be unlikely to roost or nest within it because of exposure and frequent disturbance. For these reasons, the tree has limited habitat value for wildlife, and therefore, the loss of this tree would be a less-than-significant biological impact.

As part of efforts to retain the legacy of the southern magnolia tree, this tree would be propagated, and replaced and memorialized as a cultural resource (please see Section 4.3, *Cultural Resources and Tribal Cultural Resources*). UCSF would also review the feasibility of replanting at the Dover Street entrance to the Project site, where space may be limited. The cultural value of this age-old tree is discussed further in Section 4.3. For these reasons, the Project impact related to local ordinances and the impact to the LRDP standard of significance related to heritage and landmark trees would be less than significant, with no mitigation required.

Mitigation: None required.

Cumulative Impacts

Impact C-BIO-1: Implementation of the NHB Project could result in cumulatively considerable impacts on biological resources, in combination with past, present and reasonably foreseeable future projects in the vicinity of the Project site. (*Less than Significant with Mitigation*)

This section presents an analysis of the cumulative effects of the Project when considered with other past, present, and reasonably foreseeable projects. The geographic scope of potential cumulative biological resources impacts encompasses the Project site and surroundings. The Project site contains few extant biological resources, limited to ornamental vegetation and habitat for nesting birds and bats, due to its current state of development. Similarly, cumulative projects occurring outside the Project site are also in developed areas that lack sensitive biological resources, and therefore, do not have considerable cumulative effects on biological resources. The cumulative projects considered in this section include other UCSF demolition and construction activities on or adjacent to the Project site (i.e., the Administrative Support Building; BCH Oakland Infrastructure Improvements project, which will include tree and vegetation removal on the SR 24 embankment; and replacement of fuel oil underground storage tank); and off-campus demolition and construction activities within the Project site vicinity. These projects would be carried out in accordance with all applicable federal, State and local laws and ordinances, and UCSF plans and policies where applicable, pertaining to biological resources, and any biological impacts would be mitigated to a less-than-significant level with the implementation of mitigation measures in the CEQA documents that were adopted at the time of the projects' approval.

As discussed above, the Project would result in minimal direct impacts on sensitive biological resources and would mitigate all direct and indirect impacts to special-status species with **Mitigation Measures BIO-1a, BIO-1b**, and **BIO-2**. Therefore, with mitigation, the development of the Project would not result in a cumulatively considerable contribution to cumulative impacts on biological resources. Thus, the project's cumulative impact on biological resources would be less than significant.

Mitigation: Implement Mitigation Measures BIO-1a, BIO-1b, and BIO-2.

Significance after Mitigation: Less than Significant.

4.2.4 References

California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), 2023. Special status species occurrences for Oakland West and eight surrounding U.S. Geographical Survey (USGS) 7.5-minute topographic quadrangles, Commercial Version. September 6.

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4.3 Cultural Resources and Tribal Cultural Resources

This section describes and evaluates the potential for the construction and operation of the NHB Project at the UCSF Benioff Children's Hospital (BCH) Oakland campus site to result in significant impacts on cultural resources (including architectural resources; pre-contact Native American and historic-era archaeological resources; and human remains) and tribal cultural resources. The section includes a description of the existing environmental setting as it relates to cultural and tribal cultural resources, and provides a regulatory framework that discusses applicable federal, State, and local regulations, identifies criteria used to determine impact significance, discusses potential impacts, and identifies feasible mitigation measures, as necessary, to reduce potential significant impacts.

4.3.1 Definitions

Architectural resources include buildings, structures, objects, and historic districts. Residences, cabins, barns, industrial buildings, and bridges are examples of architectural resources. *CEQA Guidelines* define an architectural historical resource as: (1) a resource in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that 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, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

Archaeological resources consist of pre-contact Native American and historic-era archaeological resources. Pre-contact Native American archaeological resources consist of village sites, temporary camps, lithic scatters, roasting pits/hearths, milling features, petroglyphs, rock features, and burials. Associated artifacts include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs). Historic-era archaeological resources include townsites, homesteads, agricultural or ranching features, mining-related features, refuse concentrations, and features or artifacts associated with early military and industrial land uses. Associated artifacts include stone, concrete, or adobe footings and walls; artifact-filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. If a lead agency determines that an archaeological site is an historical resource, the provisions of PRC Section 21084.1 and *CEQA Guidelines* Section 15064.5 apply. If an archaeological site does not meet the *CEQA Guidelines* criteria for a historical resource, then the site may meet the criteria of PRC Section 21083.2 regarding unique archaeological resources.

Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are listed, or determined to be eligible for listing, on the national, state, or local register of historical resources (PRC Section 21074[a][1]).

4.3.2 Environmental Setting

This setting draws upon background information and historical resource evaluations including: *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I* (Page & Turnbull, 2013a); *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard* (Page & Turnbull, 2013b); *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis* (Page & Turnbull, 2014); State of California Department of Parks and Recreation Form 523 Record (DPR 523) for the 55th and Dover Residential District (Page & Turnbull, 2013c); and *UCSF Benioff Children's Hospital Oakland New Hospital Building Project Historic Resources Technical Report* (ESA, 2023). These documents are included in **Appendix CUL** of this EIR.

Pre-contact Native American and Ethnohistoric Context

The San Francisco Bay Area and the surrounding region contain an abundance of natural resources, which would have been taken advantage of by its Native American and early historic-era population. Alameda County hosts a wide variety of natural communities, including salt marsh, scrub brush, grassland, and foothill woodlands. Deer, elk, and waterfowl were plentiful in prehistory and the early historic-era, as were marine and Bay resources such as seals, otters, abalone, mussels, oysters, clams and numerous fish species. Franciscan chert was an easily obtainable local raw material for stone tools, while obsidian could be obtained from the Annadel and Napa Glass Mountain quarries north of the Bay Area.

The California coast has undergone dramatic landscape changes since humans began to inhabit the region more than 10,000 years ago. Rising sea levels and increased sedimentation into streams and rivers are among some of the changes (Helley et al., 1979). In many places, the interface between older land surfaces and Holocene-age landforms are marked by a well-developed buried soil profile, or a paleosol. Paleosols preserve the composition and character of the earth's surface prior to subsequent sediment deposition and thus have the potential to preserve archeological resources if the area was occupied or settled by humans (Meyer and Rosenthal, 2007). Because human populations have grown since the arrival of the area's first inhabitants, younger paleosols (late Holocene) are more likely to yield archeological resources than older paleosols (early Holocene or Pleistocene). The archaeological sensitivity of a given area also considers that archaeological resources tend to be located near perennial water sources; archaeological deposits from successive time periods are more common because the density of human populations increased over time; and the longer a landform remained at the surface, the greater the likelihood that any one spot on that landform was occupied.

Currently, the Project site is characterized by extensive urban development and is paved and/or otherwise built upon or previously disturbed. Historically, Temescal Creek flowed eastward toward the Bayshore through the southern corner of the Project site indicating a heightened sensitivity for pre-contact archaeological resources in the vicinity. Presently, Temescal Creek flows within an underground 10- by 10-foot culvert on the Project site.

Categorizing the pre-contact period into cultural stages allows researchers to describe a range of archaeological resources with similar cultural patterns and components during a given time frame, creating a regional chronology. Milliken et al. (2007) provide a framework for the interpretation of the San Francisco Bay Area. The authors divided human history in California into three periods: the *Early Period*, the *Middle Period*, and the *Late Period*. In many parts of California four periods are defined; the fourth being the *Paleoindian Period* (11500–8000 B.C.), characterized by big-game hunters occupying broad geographic areas. Evidence of human habitation during the Paleoindian Period has not yet been discovered in the San Francisco Bay Area. Economic patterns, stylistic aspects, and regional phases further subdivide cultural periods into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

Based on a compilation of ethnographic, historic, and archaeological data, Milliken (1995) describes a group known as the Ohlone, who once occupied the general vicinity of the BCH Oakland campus site. Levy (1978) describes the language group spoken by the Ohlone, known as "Costanoan." The term Costanoan is originally derived from a Spanish word designating the coastal peoples of Central California. Today Costanoan is used as a linguistic term that refers to a larger language family spoken by distinct sociopolitical groups that spoke at least eight languages (as different as Spanish is from French) of the same Penutian language group. The Ohlone once occupied a large territory from San Francisco Bay in the north to the Big Sur and Salinas Rivers in the south. Milliken et al. (2009) note that Oakland was within the *Huchiun* of the *Chochenyo* tribal territory.

Economically, Ohlone engaged in hunting and gathering. Their territory encompassed both coastal and open valley environments that contained a wide variety of resources, including grass seeds, acorns, bulbs and tubers, bear, deer, elk, antelope, a variety of bird species, and rabbit and other small mammals. The Ohlone acknowledged private ownership of goods, and village ownership of rights to land and/or natural resources; they appear to have aggressively protected their village territories (Levy, 1978).

After European contact, Ohlone society was severely disrupted by missionization, disease, and displacement (Milliken, 1995). Today, the Ohlone still have a strong presence in the San Francisco Bay Area and are highly interested in their historic and pre-contact past. There are ten culturally affiliated tribes or individuals associated with the Oakland area listed with the California Native American Heritage Commission; none have been federally recognized.

No pre-contact Native American or ethnographic archaeological resources have been recorded on or in the vicinity of the UCSF BCH Oakland campus site (NWIC File No. 22-1592). The Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, an affiliate of the State of California Office of Historic Preservation (OHP), is the official State repository of cultural resources records and reports for Alameda County. Three pre-contact Native American archaeological sites are documented within 0.5 mile of the campus site (P-01-010600, P-01-011792, and P-01-010992).

Historical Background

In 1772, a small exploration party from the Spanish garrison at Monterey, led by Don Pedro Fages, paused in their travels on a high hill, believed to have been near the intersection of

Broadway and College Avenue. In 1820, the Spanish government granted 44,000 acres to Luis Maria Peralta upon his retirement from the military. Peralta's grant extended from the shore of San Francisco Bay to the crest of the Oakland hills, and from San Leandro Creek to "El Cerrito," or the little hill (most likely Albany Hill). Luis Maria Peralta used the land as a cattle ranch, which he sub-divided and bequeathed to his four sons in 1842.

With the 1849 Gold Rush, miners, lumbermen, businessmen, bankers, speculators, and opportunists settled across the bay from San Francisco in what was then known as Contra Costa, or "the other coast." At the same time, many Mexican rancho owners struggled to verify their claims following the Treaty of Guadalupe Hidalgo in 1848, and California's statehood in 1850 as American squatters took up residence. In 1850, Horace W. Carpentier, a 26 year-old graduate of the law school at Columbia University; Edson Adams, a 26 year-old Connecticut native; and Andrew J. Moon, a 50 year-old New Yorker arrived in Contra Costa. Each man leased 160 acres of land from Vicente Peralta and opened the area to squatters. Swiss engineer Julius Kellersberger was hired to plat the land in a grid pattern starting at the shoreline. The lots were then sold, even though Carpentier, Adams, and Moon had no legal claim to the land (Bagwell, 2012). Two years later, on March 25, 1852, the town of Oakland was incorporated and the city encompassed the present-day downtown area and West Oakland to 22nd Street.

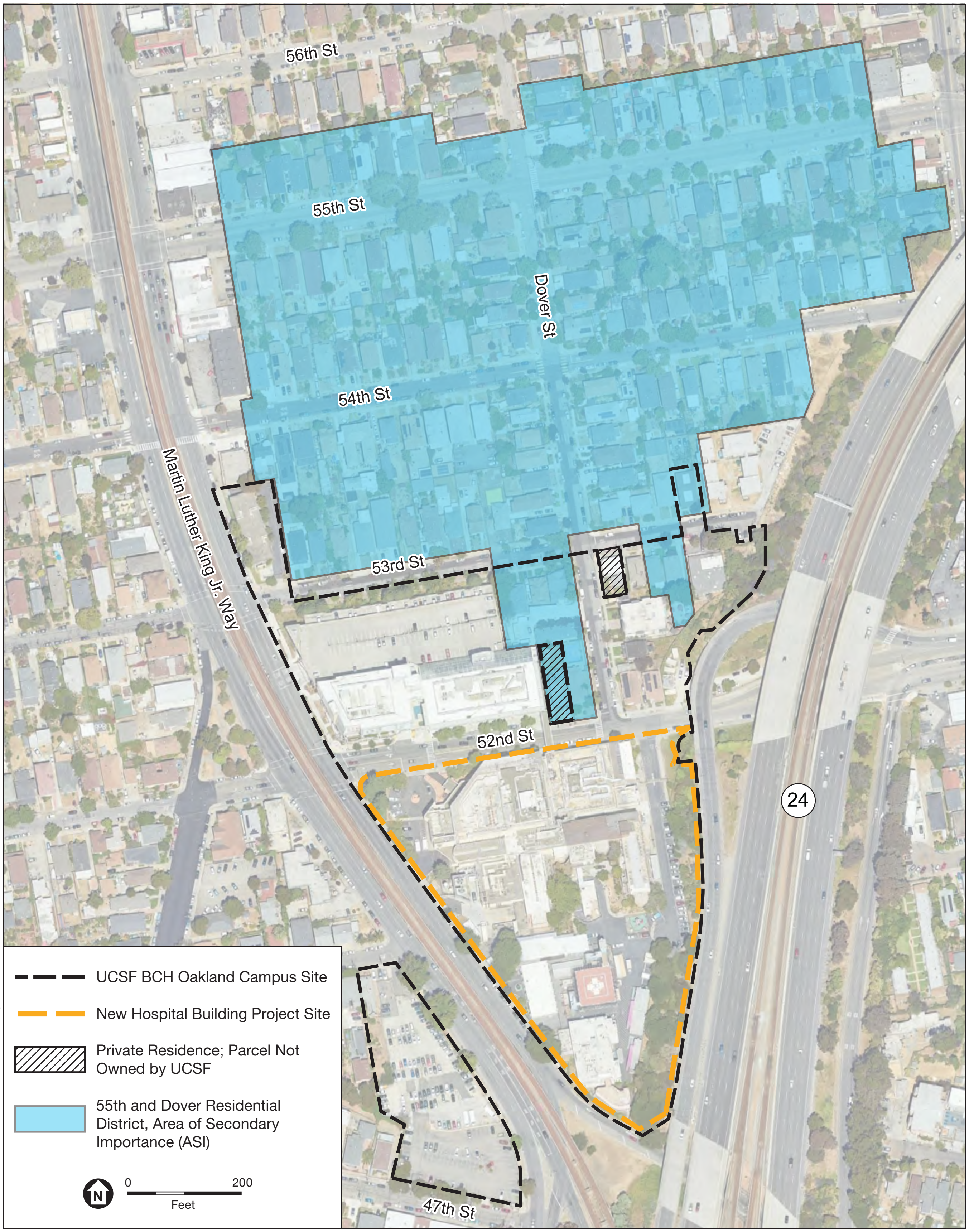
Temescal Neighborhood

The Project site is located near the Temescal neighborhood of Oakland. It is an area marked by residential growth from the 1860s through the 1940s that contains a mix of single-family and multi-family houses from that period as well as several commercial districts. An area immediately north of the Project site is known as the 55th and Dover Residential District Area of Secondary Importance (ASI).[27] Please see **Figure 4.3-1** for the location of the 55th and Dover Residential District ASI in relation to the campus site, including the Project site.

The City expanded by annexing existing settlements and developing new districts. The small Temescal community, located in north Oakland near the Project site, expanded in the 1860s with the installation of a telegraph line down present-day Telegraph Avenue and the establishment of a streetcar line to the University of California, Berkeley. At that time in the 1860s, the area was owned by Solomon E. Alden, a farmer from Connecticut. He is credited with a large orchard on his land and was once the fourth wealthiest man in Oakland when he died in 1881. Alden's daughter, Elsie, married John McElrath and constructed a large home on 51st Street west of Dover Street. The home later became the Baby Hospital in 1912 (City of Oakland, 2015).

Expansion of Oakland was facilitated by the growth of reliable public transportation into the surrounding communities. "By 1876, steam-powered rail service ran along Shattuck Avenue between Oakland and Berkeley, and by 1891 electric rail service of the Oakland Consolidated

[27] The ASI was re-evaluated in 2013 and recommended eligible for listing on the California Register of Historical Resources as a historic district (Appendix CUL). While no official letter of concurrence or determination was issued by the City of Oakland at that time, concurrence is presumed because the EIR was certified without objection on this point.



SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.3-1
55th and Dover Residential District, Area of Secondary Importance

Street Railway ran along Grove Street (now Martin Luther King, Jr. Way)" (City of Oakland, 2015). This was augmented by the San Francisco, Oakland & San Jose Railway which by 1903, operated a streetcar line on Grove Street between downtown Berkeley and ferry terminals in West Oakland. This system of streetcars eventually was consolidated by Marion "Borax" Smith into the Key Route system (City of Oakland, 2015). Neighborhoods north of Lake Merritt were annexed in 1891, and Temescal, Golden Gate, and other north Oakland neighborhoods were annexed in 1897 (City of Oakland, 1998).

Following the 1906 earthquake, the small residential enclaves around downtown Oakland experienced tremendous growth as people fled San Francisco and set down roots in other communities around San Francisco Bay. Large land holdings were subdivided for residential development, including in Temescal. Most of the current residential stock in Temescal and the area surrounding the Project site date to the period 1906–29 (Page & Turnbull, 2013a).

Further changes were wrought in the 1960s as the 55th and Dover Street area became a nexus of new transportation initiatives. The Key Route System street-car lines were discontinued in 1958 in favor of buses. State Route (SR) 24 began construction in the 1960s, cutting through the neighborhood immediately south and east of the Project site. The elevated Bay Area Rapid Transit (BART) tracks were installed in the 1970s just west of the Project site. The residential neighborhood became a crossroads for local and regional transit.

Children's Hospital

The origins of Oakland's Children's Hospital are traced back to 1911 when Bertha Wright, a visiting nurse for the Collegiate Alumnae Association of Alameda County, convened a meeting to begin discussions to establish a medical institute specifically designed for babies and children under the age of five in the east bay that would serve families regardless of their ability to pay for the services. It was the first of its kind in California (Page & Turnbull, 2013a). The Baby Hospital Association was officially established in April 1913 with a board of officers that represented the wealthiest and most influential families in Oakland. Between 1911 and 1913, the group purchased the McElrath mansion at 51st and Grove streets and began renovations to convert it to the Baby Hospital.

The Baby Hospital operated out of the McElrath mansion and grounds for several years, even as services expanded, and demand surged. However, it soon became clear that the facilities were not suitable for the long-term success of the organization or its patients.

> *In the 1920s, changes in building code necessitated the construction of a new fireproof masonry hospital building. The Baby Hospital Association secured loans for new construction, and in 1926 selected Oakland architect Edward W. Cannon to design the new hospital. Cannon designed a state-of-the-art steel frame and reinforced concrete L-shaped building in a Northern Italian Romanesque style that reflected the latest social and hygiene theory in hospital design. The new hospital building included two south-facing two-story solariums, as well as a south-facing terrace and a colonnaded porch at the entrance. The Baby Hospital (now known as the A/B Wing) was dedicated in 1928.*
>
> *The population of the East Bay increased dramatically during World War II, and patient load at the Hospital rose accordingly; between 1940 and 1945, patient load grew from*

10,000 visits a year to 24,500. In 1945, the Hospital hired the architecture firm of Stone and Mulloy to design a master plan for hospital expansion. The firm specialized in hospital design, and the plan they developed reflected contemporary advances in the field, including interior spaces that facilitated department cooperation. Work began on the first portion of the proposed master plan, which necessitated the demolition of the outmoded McElrath mansion. A magnolia tree located directly east of the McElrath house that had been planted around 1860 by female members of the Alden family was preserved during this demolition. The new B/C Wing of the Hospital was [constructed in 1946 and] dedicated on October 17, 1948.

Between 1947 and 1957, the Hospital's board purchased almost all of the lots and houses surrounding the Hospital on Grove (Martin Luther King Jr. Way), 51st, 52nd, and Dover Streets. Although some of these houses served as housing and administration buildings, eventually all were demolished for hospital expansion. In [1958], the Bruce Lyon Memorial Research Laboratory, designed by Stone, Marraccini and Patterson, was constructed on the southern portion of the hospital property, and in [1961], the William H. and Helen C. Ford Diagnostic and Treatment Center ([D&T Building]), also designed by Stone, Marraccini and Patterson, was constructed and dedicated. The south-facing entrance and lobby of the A/B Wing (Baby Hospital) were expanded and remodeled in 1962, and third story additions were built at the A/B Wing and the B/C Wing.

The construction of the Grove-Shafter freeway (State Route 24) in 1968-69 hemmed in any potential Hospital expansion to the east, altered circulation patterns around the Hospital complex, and limited visual access to the A/B Wing. In the 1970s [and early 1980s], several additions were made to the Hospital complex and approval for larger additions was granted. The West Site Plant, designed by Kaplan/McLaughlin, was constructed adjacent to the west façade of the B/C Wing [ca. 1980]. At this time, City approval was received for a new hospital building at the intersection of 52nd and Grove streets, which would adjoin the B/C Wing. The new five-story patient care facility, designed by KMD and known as the Patient Tower, opened on September 12, 1982. This addition reoriented the hospital complex so that it fronted north onto 52nd Street, and further reduced vehicular and visual access to the A/B Wing and the B/C Wing.

More recent construction at Children's Hospital includes the Cafeteria [(1988)], a one-story build-out at the B/C Wing (1987), the Bruce Lyon Memorial Research Center Addition (1992), the Cardiac Catheterization Laboratory (1993), and the Outpatient Center and parking garage (1993). No major new construction has taken place at Children's Hospital since completion of these projects in 1993 (City of Oakland, 2015). [28]

Identified Cultural Resources

Table 4.3-1, below, lists the historic architectural resources within and adjacent to the Project site that are considered historical resources for the purposes of CEQA. Within the BCH Oakland campus site, only one building (the A/B Wing) is considered a historical resource for the purposes of CEQA. The 55th and Dover Residential District is located directly across 52nd Street from the Project site. The historic district and two of its contributors with frontage on 52nd Street (720 52nd Street and 5203 Dover Street) are considered historical resources for the purposes of CEQA.

[28] This text is a direct quote from the 2015 CHRCO CMP Final EIR and does not list new construction that has taken place at the UCSF BCH Oakland campus site since 2015, including the OPC2.

TABLE 4.3-1
HISTORICAL RESOURCES WITHIN AND ADJACENT TO THE NHB PROJECT SITE

Name	Location	Year Constructed	Type	Historic Status
A/B Wing	Within Project site	1928	Building	Determined to qualify as a CEQA historic resource (City of Oakland, 2015; ESA, 2023)
55th and Dover Residential District	Across 52nd Street from the Project site; partially within UCSF BCH Oakland campus site	1906–13	Historic district	Determined to qualify as a CEQA historic resource (City of Oakland, 2015)
720 52nd Street	Across 52nd Street from the Project site; outside UCSF BCH Oakland campus site	1907	Contributor to historic district	Determined to qualify as a CEQA historic resource (City of Oakland, 2015)
5203 Dover Street	Across 52nd Street from the Project site; within UCSF BCH Oakland campus site	ca. 1906	Contributor to historic district	Determined to qualify as a CEQA historic resource (City of Oakland, 2015)

The A/B Wing is the only historic resource located within the Project site. Constructed in 1928, it is the oldest extant building on the BCH Oakland campus site. As the earliest purpose-built hospital for children in the East Bay, the A/B Wing played an important role in providing medical care and services to children and also as a teaching hospital. It was designed in a Northern Italian Renaissance Revival style and is a representative example of early 20th-century hospital design trends. Despite its historic and architectural significance, the building lacks sufficient integrity to convey its significance, and it is therefore ineligible for listing on the California Register. However, the A/B Wing has been determined to be eligible for listing as a City of Oakland Designated Historic Property and therefore qualifies as a historic resource for the purposes of CEQA.

The 55th and Dover Residential District, which is located in the immediate vicinity of the Project site, was determined to be eligible for listing on the California Register under Criterion 1 with a period of significance of 1906–13. The district includes 119 contributing resources and 24 non-contributing resources. The district qualifies as a historic resource for the purposes of CEQA. Additionally, contributors to the district also qualify as historic resources, but they are not individually eligible for listing on the California Register.

Previous evaluations and environmental analyses have determined that no other historic-age buildings or structures located within the Project site (i.e., the D&T Building, the CUP, the B/C Wing, and the Bruce Lyon Memorial Research Laboratory) qualify as historical resources under CEQA.

4.3.3 Regulatory Framework

Federal

Historical and archaeological resources are considered through the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 306108), and its implementing regulations. Before an “undertaking” (e.g., federal funding or issuance of a federal permit) is implemented, Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties (i.e., properties listed in or eligible for listing in the national register) and to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). Under the preservation act, a property is considered significant if it meets the National Register listing criteria A through D, at 36 Code of Federal Regulations 60.4, as follows:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and that:
>
> a) Are associated with events that have made a significant contribution to the broad patterns of our history, or
>
> b) Are associated with the lives of persons significant in our past, or
>
> c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction, or
>
> d) Have yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the National Register, it must also retain enough integrity to be recognizable as a historic property and to convey its significance. Resources that are less than 50 years old are generally not considered eligible for the National Register.

Federal review of the effects of undertakings on significant cultural resources is carried out under Section 106 of the NHPA and is often referred to as "Section 106 review." This process is the responsibility of the federal lead agency. Section 106 review typically involves a four-step procedure, which is described in detail in the implementing regulations of the NHPA (36 Code of Federal Regulations 800):

- Define the Area of Potential Effects in which an undertaking could directly or indirectly affect historic properties;
- Identify historic properties in consultation with the State Historic Preservation Office and interested parties;
- Assess the significance of effects of the undertaking on historic properties; and
- Consult with the State Historic Preservation Officer, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the Advisory Council on Historic Preservation and proceed with the project according to the conditions of the agreement.

State

The State of California implements the NHPA of 1966, as amended, through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation, as an office of the California Department of Parks and Recreation, implements the policies of the preservation act on a statewide level. The Office of Historic

Preservation also maintains the California Historical Resources Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within the State's jurisdiction.

CEQA and the 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]). Certain resources are determined by the statute to be automatically included in the California Register, including those formally determined eligible for or listed in the National Register (PRC 5024.1[d][1]). These resources are termed "historical resources."

Based on Section 15064.5(a) of the *CEQA Guidelines*, historical resources include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript that is historically or archaeologically significant or that is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Generally, a resource is considered by a lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register (PRC Section 5024.1), or qualifies as a "unique historical resource" (PRC Section 21083.2).

To be eligible for the California Register, a cultural resource must meet one or more of the following criteria:

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

For a resource to be eligible for the California Register, it must also retain enough integrity of location, design, setting, materials, workmanship, feeling, and association to be recognizable as a historical resource and to convey its significance. Resources that are less than 45 years old are generally not considered eligible for the California Register.

Impact assessment under CEQA considers only historically significant cultural resources; that is, resources that meet CEQA criteria for eligibility to the California Register (historical resources) or qualify as unique archaeological resources, as detailed below. Impacts on resources that do not meet these criteria are not considered in impact assessment under CEQA. Similarly, for projects with federal involvement, only resources that meet the criteria of eligibility for the National Register receive further consideration in impact analysis.

CEQA considers archaeological resources as an intrinsic part of the physical environment and thus requires that, for any project, the potential of the project to adversely affect archaeological resources be analyzed (CEQA Section 21083.2). For a project that may have an adverse effect on a significant archaeological resource, CEQA requires preparation of an environmental impact report (CEQA Section 21083.2 and *CEQA Guidelines* Section 15065). CEQA recognizes two different categories of significant archaeological resources: "unique" archaeological resource (CEQA Section 21083.2) and an archaeological resource that qualifies as a "historical resource" under CEQA (CEQA Section 21084.1 and *CEQA Guidelines* Section 15064.5).

Assembly Bill 52

In September of 2014, the California Legislature passed Assembly Bill 52 (AB 52), which added provisions to the PRC regarding the evaluation of impacts on tribal cultural resources under CEQA, and consultation requirements with California Native American tribes. In particular, AB 52 now requires lead agencies to analyze project impacts on "tribal cultural resources" separately from archaeological resources (PRC Sections 21074; 21083.09). The bill defines "tribal cultural resources" in a new section of the PRC Section 21074. AB 52 also requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

Specifically, PRC Section 21084.3 states:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) 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 Section 21080.3.2, the following 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.

Finally, AB 52 requires the Office of Planning and Research to update Appendix G of the *CEQA Guidelines* to provide sample questions regarding impacts on tribal cultural resources (PRC Section 21083.09).

California Public Resources Code Sections 5097.98 and 5097.99

PRC Section 5097.98 (and reiterated in *CEQA Guidelines* Section 15064.59 [e]) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. PRC Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains which are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any such artifacts or human remains is guilty of a felony which is punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell or dissect or with malice or wantonness is also guilty of a felony which is punishable by imprisonment.

California Health and Safety Code Section 7050.5

Section 7050.5 of the California Health and Safety Code protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery.

California Native American Historic Resource Protection Act

The California Native American Historic Resources Protection Act of 2002 imposes civil penalties, including imprisonment and fines up to $50,000 per violation, for persons who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register.

University of California

UCSF 2014 LRDP

The following UCSF 2014 LRDP campus-wide objective relates to cultural resources:

Campus-Wide Objective

4. **Promote Environmental Sustainability**
   A. Optimize the use of existing facilities, sites, and campus space through repurposing, renovation, densification, and consolidation where appropriate.

The UCSF 2014 LRDP also includes *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group:

Community Planning Principles

Building and Public Realm Design

BD3. Consider adaptive reuse of building structures.

BD8. Respect historically significant resources whenever possible.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies, and regulations to the extent feasible. City plans and specifications that are relevant to the cultural resources impacts analysis are summarized below.

City of Oakland Historical Resources

Under Section 17.158.090 of the City of Oakland Planning Code (2005), for purposes of evaluating environmental impacts under CEQA, a historical resource is a resource that meets any of the following criteria:

1. A resource listed in, or determined to be eligible for listing in, the California Register;
2. A resource included in Oakland's Local Register of historical resources (defined in General Plan Historic Preservation Element Policy 3.8 below), unless the preponderance of evidence demonstrates that it is not historically or culturally significant. Historical resources are defined in General Plan Historic Preservation Element Policy 3.8 as follows:
    a. All Designated Historic Properties [Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties]; and
    b. Those Potential Designated Historic Properties [PDHPs] that have an existing rating of "A" or "B" or are located within an Area of Primary Importance (API);
3. A resource identified as significant (e.g., rated 1–5) in a historical resource survey recorded on Department of Parks and Recreation (DPR) 523 Form, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
4. Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register *CEQA Guidelines* Section 15064.5; or
5. A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

There is one historic resource located within the Project site. It is the A/B Wing, which is eligible for listing as a City of Oakland Designated History Property but not eligible for listing on the California Register.

The following historic resources are located in the immediate vicinity of the Project site:

- 55th and Dover Residential District
- Contributors to the 55th and Dover Residential District located at 720 52nd Street and 5203 Dover Street (not individually eligible historic resources)

4.3.4 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or

c) Disturb any human remains, including those interred outside of formal cemeteries.

d) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 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:

   i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or

   ii) 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Approach to Analysis

Architectural Resources

Potential impacts on architectural resources are assessed by identifying any activities (either during construction or operations) that could affect resources that have been identified as historical resources for the purposes of CEQA. Once a resource has been identified as a CEQA historical resource, it then must be determined whether the project would "cause a substantial adverse change in the significance" of the resource (*CEQA Guidelines* Section 15064.5[b]). A substantial adverse change in the significance of an historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (*CEQA Guidelines* Section 15064[b][1]). A historical resource is considered materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in the California Register (*CEQA Guidelines* Section 15064.5[b][2][A]).

As discussed in Section 4.0, *Introduction to Environmental Analysis*, several demolition projects at the Project site were previously analyzed in the CHRCO CMP Project FEIR that have not yet been implemented, including demolition of the B/C Wing, loading dock, Bruce Lyon Memorial Research Laboratory, Bruce Lyon Addition, helistop structure, and several trailers. This EIR will conservatively readdress these proposed demolition activities as part of the Project.

Since the CHRCO CMP Project FEIR was certified, one additional building has reached, or is approaching, the age threshold for consideration as a potential historic resource: the Central Utility Plant (CUP; constructed ca. 1980). Therefore, this EIR evaluated the CUP and recommended it be considered not eligible for listing in the California Register (Appendix CUL).

Archaeological Resources

Archaeological resources can include historical resources according to *CEQA Guidelines* Section 15064.5 as well as unique archaeological resources as defined in *CEQA Guidelines* Section 21083.2(g). The significance of most pre-contact Native American and historic-era archaeological sites is usually assessed under National Register and California Register criteria D/4. These criteria stress the importance of the information potential contained within the site, rather than its significance as a surviving example of a type or its association with an important person or event. Although it is less common, archaeological resources may also be assessed under California Register criteria 1, 2, and/or 3.

Impacts to unique archaeological resources or archaeological resources that qualify as historical resources are assessed pursuant to Section 21083.2 of the CEQA statute, which states that the lead agency shall determine whether the project may have a significant effect on archaeological resources. As with architectural resources above, whether the impacts of the project would "cause a substantial adverse change in the significance" of the resource must be determined (*CEQA Guidelines* Section 15064.5[b]).

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified above in the Regulatory Framework. This analysis considers impacts on human remains, including intentional disturbance, mutilation, or removal of interred human remains.

Tribal Cultural Resources

A tribal cultural resource is defined as a site feature, place, cultural landscape, sacred place or object, which is of cultural value to a tribe that is either on or eligible for the California Register or a local historic register, or the lead agency, at its discretion, chooses to treat the resource as a tribal cultural resource. Impacts to tribal cultural resources are assessed in consultation with affiliated Native American tribe in accordance with PRC Section 21080.3. This analysis considers whether the proposed Project would cause damaging effects to any tribal cultural resource.

Impact Analysis

Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources. ***(Significant and Unavoidable with Mitigation)***

As shown in Figure 3-5 in *Chapter 3, Project Description*, the proposed Project would require the demolition of the A/B Wing, B/C Wing, Bruce Lyon Memorial Research Center (including the 1992 addition), hospital loading dock, and helistop structure; the demolition or removal of a number of trailers; and the removal of the courtyard between the A/B and B/C Wings and the magnolia tree near the B/C Wing. The Project also includes renovations to the Patient Tower. With the exception of the A/B Wing, none of the buildings and structures to be demolished or renovated qualify as historical resources under CEQA, and their demolition would not result in a significant impact on known historical resources.

The A/B Wing has been identified as a historical resource, and the courtyard and magnolia tree have been identified as character-defining features of the A/B Wing. Constructed in 1928, it is the oldest extant building on the BCH Oakland campus site. As the earliest purpose-built hospital for children in the East Bay, the A/B Wing played an important role in providing medical care and services to children and also as a teaching hospital. It was designed in a Northern Italian Renaissance Revival style and is a representative example of early 20th-century hospital design trends. Despite its historic and architectural significance, the building lacks sufficient integrity to convey its significance, and it is therefore ineligible for listing on the California Register. However, the A/B Wing has been determined eligible for listing as a City of Oakland Designated Historic Property and therefore qualifies as a historical resource for the purposes of CEQA.

Under the Project, the A/B Wing would be demolished, and this would include the removal of all character-defining features including the courtyard and magnolia tree that justify its inclusion on the City of Oakland's Local Register of Historical Resources. Therefore, the demolition of the A/B Wing would result in a significant and unavoidable impact on a historical resource.

As discussed in Chapter 3, *Project Description*, under *Project Need*, UCSF has concluded that the A/B and B/C Wings are obsolete and cannot reasonably be retrofitted and renovated to meet modern requirements for a clinical care facility. The structural layout of the buildings, floor plate sizes, ceiling heights, and building infrastructure systems are such that it would be infeasible to retain, retrofit, and reuse the buildings for acute care. Current seismic requirements, technologies and patient care standards require a modern acute care facility that simply cannot be accommodated in the A/B and B/C Wings. Further, maintaining the A/B and B/C Wings in place constrains the site and compromises the ability of UCSF BCH Oakland to build a contemporary high-performing hospital for the community that meets the Project's fundamental and development objectives. While the impact cannot be mitigated to a less-than-significant level, implementation of **Mitigation Measures CUL-1a** and **CUL-1b** would require that UCSF prepare Historic American Buildings Survey (HABS)-like documentation of the A/B Wing and its associated landscape features prior to demolition and develop a public interpretation and salvage plan. Implementation of these measures would lessen the severity of the Project's significant impact on a historical resource but would not reduce the impact to a less-than-significant level.

Additionally, UCSF has pledged to voluntarily implement certain measures that would incorporate enhancements that are sensitive to the loss of historical resources resulting from the Project as follows:

- **Magnolia Tree Propagation.** UCSF shall continue to contract with a qualified tree company to take seeds or cuttings from the existing Southern magnolia. The contracted firm will propagate these seeds or cuttings and continue to grow them until they reach a typical landscape tree size, 24" box minimum. Numerous offspring trees have already been established.

- **Magnolia Tree Replacement.** Within the constraints of the site plan, UCSF will incorporate a new magnolia tree into the site plan of the Project, as close as possible to the historic location of the existing magnolia tree (#82). Possible locations to be considered include near a retaining wall, and adjacent to Martin Luther King Jr. Way. UCSF will select the largest, good-quality, boxed specimen, and the tree company shall grow the tree for five more years. The tree will be installed on the BCH Oakland campus site. UCSF will also review the feasibility of planting these trees at the Dover Street entrance where space may be limited.
- **Magnolia Tree Plaque.** Prior to Project completion, UCSF will install a permanent, high-quality plaque or simple interpretive panel near the replacement magnolia tree that includes information about the magnolia tree. It will be similar to the plaque that is currently located under the existing magnolia tree (the existing plaque is not historic and does not need to be retained), and it shall clearly state that the tree is a new replacement tree in order to avoid potential false historicism. The content of the plaque/panel will feature the tree's historic relation to the site and as the source of inspiration for the nickname "the Branches," which is what the A/B Wing was called during the 1920s and 1930s.

Mitigation Measure CUL-1a: Documentation of the A/B Wing

Prior to any demolition work initiated at the A/B Wing, UCSF shall ensure that a qualified architectural historian who meets the Secretary of the Interior's Professional Qualification Standards thoroughly documents the building and associated landscaping and setting. Documentation shall include still photography and a written documentary record of the building to the National Park Service's standards of the Historic American Buildings Survey (HABS), including accurate scaled mapping and architectural descriptions. If available, scaled architectural plans will also be included. Photographs include large-format (4"x5") black-and-white negatives and 8"x10" enlargements. Digital photography may be substituted for large-format negative photography if archived locally. The record shall be accompanied by a report containing site-specific history and appropriate contextual information relying as much as possible on previous documentation. Copies of the records shall be submitted to the Northwest Information Center at Sonoma State University and the Oakland History Center at the Oakland Public Library.

Mitigation Measure CUL-1b: Public Interpretation and Salvage Plan for the A/B Wing

Prior to any demolition work that would remove character-defining features of the A/B Wing, UCSF shall prepare a Salvage Plan for those components of the building suitable for salvage and/or reuse. A Salvage Plan shall be prepared by a qualified architectural historian or historic architect who meets the Secretary of the Interior's Professional Qualification Standards and presented to UCSF Planning staff. This would be a feasibility study to determine the structural integrity of the character-defining features associated with the A/B Wing, identify environmental factors that may require remediation prior to salvage (e.g., lead paint, chemicals, etc.), and present potential new uses of the salvaged features. The Salvage Plan will identify opportunities for UCSF to reuse character-defining features in the NHB Project.

Prior to any demolition activities that would remove character-defining features of, or demolish, an individual historical resource on the project site, UCSF shall prepare a plan for interpretive displays. The specific location, media, and other characteristics of such interpretive display(s) shall be included in this proposal. The historic interpretation plan shall be prepared in coordination with an architectural historian or historian who meets the

Secretary of the Interior's Professional Qualification Standards and an exhibit designer or landscape architect with historical interpretation design experience. Interpretive display(s) shall document the individually eligible resource to be demolished. The interpretative plan should also explore contributing to digital platforms that are publicly accessible. A proposal describing the general parameters of the interpretive program and the substance, media, and other elements of such interpretive display shall be approved by UCSF Planning staff prior to commencement of any demolition activities.

Following any demolition activities within the project site, UCSF shall provide within publicly accessible areas of the project site a permanent display(s) of interpretive materials concerning the history and architectural features of the individual historical resources.

Significance after Mitigation: Significant and Unavoidable.

Impact CUL-2: Implementation of the NHB Project would not result in significant impacts to the 55th and Dover Residential District. ***(Less than Significant)***

As shown in Figure 4.3-1, the 55th and Dover Residential District, a historic resource, is located immediately north of the Project site. Two contributors to the district (720 52nd Street, a private residence not owned by UCSF, and 5203 Dover Street, a residence owned by UCSF), which are also considered to be historic resources, are located on the opposite side of 52nd Street from the Project site. The NHB project does not included any work within the 55th and Dover Residential District. The Project includes interior renovations to the Patient Tower that is located adjacent to the residential district itself and across from the two buildings that are contributors to the district. The Project would not affect the overall architectural character of the residential district "as a strong representative example of a residential neighborhood that developed rapidly between 1906 and 1913 in response to a population increase in Oakland after the 1906 earthquake and the completion of the Key Route System's E Line in 1910, which ran along 55th Street" (Page & Turnbull, 2014).

As discussed in Section 4.10, *Noise and Vibration*, construction activities at the Project site would generate vibration that could potentially cause structural damage to adjacent and nearby buildings. However, the nearest historic resource to the Project site is the 55th and Dover Residential District, within which the nearest residential buildings are located approximately 75 feet north of the northern boundary of the Project site along 52nd Street and more than 200 feet from where building demolition and construction would occur. According to the data presented in Table 4.10-13, in Section 4.10, *Noise and Vibration*, at that distance, ground-borne vibration levels from construction activities would be well below the Caltrans threshold of 0.25 inches per second peak particle velocity for damage to historic structures. Therefore, the proposed Project would have a less-than-significant impact on historical resources.

Mitigation: None required.

Impact CUL-3: Implementation of the NHB Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5. *(Less than Significant with Mitigation)*

Based on a review of site distribution and the environmental context, there are no previously recorded archaeological resources on the Project site, and the Project site is highly disturbed from extensive use and existing development. Background research indicates that no previously recorded pre-contact archaeological resources are within or in the immediate vicinity of the Project site. Although the Project site is adjacent to the historic alignment of Temescal Creek and therefore is considered sensitive for pre-contact archaeological resources, however, as noted, the Project site has been highly disturbed from existing development. Similarly, while the Project site has a long history of post-contact settlement and development, the Project site has undergone several phases of construction-related disturbances, and the potential for encountering intact historic-era resources is low.

Nevertheless, the potential for uncovering pre-contact and historic-era archaeological resources cannot be entirely discounted. In the unlikely event that archaeological materials are discovered during Project construction (including grading, excavation and other earthmoving activities), a substantial adverse change to a resource found to qualify as an historical resource per *CEQA Guidelines* Section 15064.5 or a unique archaeological resource, as defined in CEQA Section 21083.2(g), could be potentially significant. With implementation of **Mitigation Measure CUL-3**, site development would have a less-than-significant impact on previously unknown archaeological resources. Therefore, this impact would be less than significant with mitigation.

Mitigation Measure CUL-3: Inadvertent Discovery of Archaeological Resources and Tribal Cultural Resources

Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general archaeological and tribal cultural sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources.

If pre-contact or historic-era cultural materials are encountered by construction personnel during ground-disturbing activities, all construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). The UCSF EC shall retain a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards to inspect the find within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource, construction shall cease in an area determined by the qualified archaeologist until a mitigation plan has been prepared and implemented [*CEQA Guidelines* 15064.5(b)(4)]. If the find is a potential tribal cultural resource, the UCSF EC shall contact a Native American representative or representatives (as provided by the Native American Heritage Commission) [PRC 21074(2)(c)]. The qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s), shall determine when construction can resume.

If the resource is determined to be a historical resource or a unique archaeological resource, the preferred mitigation shall be preservation in place. In accordance with PRC Section 21083.2(b), preservation in place shall be accomplished through: (1) modifying the construction plan to avoid the resource; (2) incorporating the resource within open space; (3) capping and covering the resource; or (4) deeding the resource site into a permanent conservation easement. If preservation in place is not feasible, the qualified archaeologist, in consultation with the UCSF EC and the Native American representative(s) (if the resource is pre-contact), shall prepare and implement a detailed treatment plan. In all cases treatment will be carried out with dignity and respect (including protecting the cultural character, traditional use, and confidentiality of the resource). For pre-contact Native American resources, the Native American representative(s) will be consulted on the research approach, methods, and whether burial or data recovery or alternative mitigation is appropriate for the find. Treatment for most resources could consist of (but shall not be limited to) sample excavation, site documentation, and historical research, as appropriate to the discovered resource. The treatment plan shall include provisions for analysis of data in a regional context as appropriate to the discovered resource, reporting of results within a timely manner, and dissemination of reports to local and state repositories, libraries, and interested professionals.

Significance after Mitigation: Less than Significant.

Impact CUL-4: Implementation of the NHB Project could disturb human remains, including those interred outside of dedicated cemeteries. *(Less than Significant with Mitigation)*

There are no known human remains, including those interred outside of dedicated cemeteries, located within the Project site. There still exists, however, the potential that ground disturbance under the Project could impact previously undiscovered human remains. In the event that Project construction activities disturb unknown human remains, any inadvertent damage to human remains could be considered a significant impact. With implementation of **Mitigation Measure CUL-4**, development would have a less-than-significant impact on previously unknown human remains. Therefore, this impact would be less than significant with mitigation.

Mitigation Measure CUL-4: Inadvertent Discovery of Human Remains

In the event of discovery or recognition of any human remains during ground-disturbing activities, treatment shall comply with all applicable state and federal laws. All construction activities within 100 feet shall halt and the contractor shall notify the UCSF Environmental Coordinator (EC). In accordance with PRC 5097.98, the UCSF EC shall contact the Alameda County Coroner to determine that no investigation of the cause of death is required. The County Coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant (MLD) from the deceased Native American. Within 48 hours, the MLD shall make recommendations to the UCSF EC of the appropriate means of treating the human remains and any grave goods. Whenever the NAHC is unable to identify an MLD, the MLD fails to make a recommendation, or the parties are unable to agree on the appropriate treatment measures, the human remains shall be reinterred with appropriate dignity on the property in a location not subject to further and future subsurface disturbance.

Significance after Mitigation: Less than Significant.

Impact CUL-5: Implementation of the NHB Project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 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. ***(Less than Significant with Mitigation)***

Based on the background research and environmental context, there are no known tribal cultural resources in areas proposed for ground disturbance or other improvements within the Project site. On May 30, 2023, UCSF sent notification letters of UCSF's proposal to undertake the NHB Project to the applicable representatives on the NAHC notification list for Alameda County. The Confederated Villages of Lisjan responded to the request for consultation. On June 30, 2023, representatives from UCSF held a virtual meeting with ESA and representatives from the Confederated Villages of Lisjan. The Tribe expressed concern regarding the potential for subsurface tribal cultural resources to be present at the Project site, particularly in the vicinity of Temescal Creek (currently within a concrete culvert on the Project site), which may indicate a higher level of cultural sensitivity.

On September 13, 2023, representatives from UCSF and ESA met with representatives from the Confederated Villages of Lisjan, including their Chairperson Corrina Gould, at the Project site. The group reviewed a site survey that showed the extent of known existing underground utilities, including the Temescal Creek culvert; and walked the Project site to review the areas of proposed Project construction. The Tribe expressed concerns over the proximity of Project construction to Temescal Creek and the cultural sensitivity of areas along waterways, and provided recommendations regarding the preservation of tribal artifacts and human remains, should any be found on site during excavation activities. The Tribe recommended a cultural resources sensitivity training prior to Project construction as well as on-site monitoring during excavation of native, undisturbed soils.

While unlikely, there remains the potential that ground disturbance could impact previously undiscovered or buried cultural materials that could also be considered tribal cultural resources. Impacts to tribal cultural resources could be potentially significant. Based on the recommendations from the Tribe and with implementation of **Mitigation Measure CUL-5a** and **Mitigation Measure CUL-5b**, the Project would have a less-than-significant impact on previously unknown tribal cultural resources. Therefore, this impact would be less than significant with mitigation.

Mitigation Measure CUL-5a: Cultural Resources Awareness Training

UCSF shall provide a cultural resources and tribal cultural resources sensitivity and awareness training program for all personnel involved in project construction, including field consultants and construction workers. UCSF shall invite affiliated Native American tribal representatives to participate. The training program shall include relevant information regarding sensitive cultural resources and tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The training program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located in the Project site and shall outline what to do and who to contact if any potential cultural resources or tribal cultural resources are encountered. The training program shall emphasize the requirement for confidentiality and culturally appropriate treatment of any discovery of significance to Native Americans.

Mitigation Measure CUL-5b: Cultural Resources Monitoring Plan

Prior to authorization to proceed, a Secretary of the Interior-qualified archaeologist shall prepare a cultural resources monitoring plan. The plan shall be reviewed by the affiliated Native American tribe(s) and UCSF. The plan shall include (but not be limited to) the following components:

- Monitoring locations and circumstances based on soil types, geology, distance to known sites, and other factors;
- Person(s) responsible for conducting monitoring activities, including a request to the culturally-affiliated Native American tribe(s) for a tribal monitor;
- Person(s) responsible for overseeing and directing the monitors;
- How the monitoring shall be conducted and the required format and content of monitoring reports;
- Schedule for submittal of monitoring reports and person(s) responsible for review and approval of monitoring reports;
- Protocol for notifications in case of encountering cultural resources, as well as methods of dealing with the encountered resources (e.g., collection, identification, curation);
- Methods to ensure security of cultural resources if identified;
- Protocol for notifying local authorities (i.e. Sheriff, Police) should site looting and other illegal activities occur during construction.

During the course of the monitoring, the archaeologist and tribal monitor may adjust the frequency—from continuous to intermittent—of the monitoring based on the conditions and professional judgment regarding the potential to impact resources.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

Impact C-CUL-1: Implementation of the NHB Project could result in cumulatively considerable impacts on cultural and/or tribal cultural resources, in combination with past, present and reasonably foreseeable future projects. ***(Less than Significant for Historical Resources; Less than Significant with Mitigation for Archaeological Resources, Human Remains, and Tribal Cultural Resources)***

Significant cumulative impacts related to cultural resources and/or tribal cultural resources would occur if the incremental impacts of the Project combined with the impacts of cumulative development identified in Section 4.0.4, under subsection *Cumulative Impact Analysis*, would result in a significant cumulative impact and if the Project's contribution would be considerable. A description of reasonably cumulative projects on or in the Project site vicinity is presented in Section 4.0.4, under subsection *Cumulative Impact Analysis*.

Historical Resources

The geographic scope for cumulative effects on historic architectural resources is the area within 1,000 feet of the Project site. The area is characterized primarily by low-scale, residential buildings with some office and retail uses. The Project site is separated from the Santa Fe neighborhood (to the west) and Longfellow neighborhood (to the south) by the six-lane Martin Luther King Jr. Way and the elevated BART tracks and from the Temescal neighborhood (to the east) by SR 24. To the north are the BCH Patient Tower and Oakland Outpatient Center and the 55th and Dover Residential District.

Because the cumulative projects listed in Section 4.0.4 would not result in impacts to historic resources, they would not combine with the Project to result in a new cumulative impact on historic resources. As such, the Project would not contribute to a cumulative impact, and no additional mitigation is required.

Archaeological Resources, Human Remains, and Tribal Cultural Resources

The geographic scope for cumulative effects on archaeological resources, human remains, and tribal cultural resources includes the immediate vicinity of the Project site where the proposed Project could cause disturbance to archaeological resources, human remains, and/or tribal cultural resources. Cumulative projects in the vicinity could have a significant impact on previously undiscovered archaeological resources, including human remains interred outside of formal cemeteries, during ground-disturbing activities. The potential impacts of the project when considered together with similar impacts from other probable future projects in the vicinity could result in a significant cumulative impact on buried archaeological resources or human remains. However, implementation of Mitigation Measures CUL-3 and CUL-4 would require that work halt in the vicinity of a find until it is evaluated by a qualified archaeologist who meets the Secretary of the Interior's Professional Qualification Standards, and in the case of human remains the County Coroner. In addition, cumulative projects undergoing CEQA review would have similar types of inadvertent discovery measures. Therefore, with implementation of Mitigation Measures CUL-3 and CUL-4, the proposed Project's contribution to cumulative impacts would not be considerable, and the impact would be less than significant with mitigation.

Mitigation: Implement Mitigation Measures CUL-3 and CUL-4.

Significance after Mitigation: Less than Significant.

4.3.5 References

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4.4 Energy

Section 21100(b) of the California Public Resources Code (PRC) directs all State Agencies, Boards, and Commissions to assess the environmental impacts of projects for which they are a Lead Agency under CEQA to determine whether a project could result in significant effect on the environment, including effects from the wasteful, inefficient, and unnecessary consumption of energy, and to identify mitigation measures to minimize any such significant effects.

This section discusses the existing energy-related profiles of the state and the UCSF Benioff Children's Hospital (BCH) Oakland campus site. The current regulatory and policy frameworks that govern the production and consumption of energy resources and aim to increase energy efficiency while reducing reliance on fossil fuels are also described. The construction and operation of the Project is then assessed for its potential to result in significant energy impacts based on the California energy profile (i.e., mix of energy resources and consumption characteristics), the regional energy production and transmission profile of Pacific Gas & Electric Company (PG&E); the regional purveyor of natural gas and electricity throughout the Bay Area and much of central and northern California) as well as the local energy profile of the UCSF BCH Oakland campus site, and the section examines the proposed Project's energy usage characteristics to determine whether the Project could result in any significant energy-related environmental impacts during its construction or operation activities. The analysis identifies feasible mitigation measures for significant adverse impacts. The section also includes an analysis of cumulative energy impacts.

4.4.1 Environmental Setting

State

Energy Profile

Total energy usage in California was 7,359 trillion British Thermal Units (Btu) in 2021, which equates to an average of 189 million Btu per capita. These figures place California 2nd among the nation's 50 states in total energy use and 48th in per capita consumption. Of California's total energy usage, the breakdown by sector is roughly 41 percent transportation, 24 percent industrial, 17 percent commercial, and 18 percent residential. Electricity and natural gas in California are primarily consumed by stationary users such as residences and commercial and industrial facilities, whereas petroleum-based fuel consumption is generally accounted for by transportation-related energy use (EIA, 2023a).

California relies on a regional power system composed of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation sources. Approximately 70 percent of the electrical power needed to meet California's demand is produced in the state; the balance, approximately 30 percent, is imported from the Pacific Northwest and the Southwest. In 2022, California's in-state electricity generation was derived from natural gas (47 percent); large hydroelectric resources (7 percent); nuclear sources (9 percent); renewable resources that include geothermal, biomass, small hydroelectric resources, wind, and solar (36 percent); coal (less than 1 percent); and petroleum coke/waste heat (less than 1 percent) (CEC, 2023a).

Electricity

In 2022, total system electric generation for California (in-state plus imports) was 287,220 gigawatt-hours (GWh), up 3.4 percent from 2021's total generation of 277,764 GWh. Electricity from non-CO_2 emitting electric generation categories (i.e., nuclear, large hydroelectric, and renewable generation) accounted for 54 percent of total in-state generation for 2022, compared to 52 percent in 2021. However, California's in-state generation increased by 4.5 percent (9,130 GWh) to 203,257GWh. In-state hydroelectric generation increased by 21 percent compared to 2021 generation levels (3,045 GWh). Net imports for 2022 (83,962) were virtually unchanged from 2021 levels (83,636 GWh) (CEC, 2023a).

In recent years, electricity demand has been relatively flat as energy efficiency programs have resulted in end-use energy savings and as customers install behind-the-meter solar photovoltaic (PV) systems that directly displace utility-supplied generation. In 2018 (the most recent year for which these specific data are available), behind-the-meter solar generation[29] was estimated to be 13,582 GWh, a 20 percent increase from 2017. The strong growth in solar PV has had a measurable impact on utility-served load and, consequently, on total system electric generation (CEC, 2019).

Increasingly, electricity is used in multiple transportation modes, including light-duty vehicles, transit buses, and light and heavy rail. In California, its use is forecast to emerge in battery-electric medium-duty trucks, battery-electric buses, catenary-electric port drayage trucks, and high-speed rail. The California Energy Commission (CEC) forecasts the statewide electricity demand for the transportation sector will increase from a 2017 level of 2,000 GWh annually to between approximately 12,000 and 18,000 GWh per year by 2030, depending on technology development and market penetration of the various vehicle types (CEC, 2018).

Natural Gas

Californians consumed about 11,710 million therms of natural gas in 2022, which is equal to 1,171,000,000 million Btu (MMBtu) (CEC, 2023b). The natural gas market is evolving and service options expanding, but its use falls mainly into the following four sectors: residential, commercial, industrial, and electric power generation. In addition, natural gas is a viable alternative to petroleum fuels for use in cars, trucks, and buses. Nearly 45 percent of the natural gas burned in California is used for electricity generation, and most of the remainder is consumed in the residential (21 percent), industrial (25 percent), and commercial (9 percent) sectors. California depends on out-of-state imports for nearly 90 percent of its natural gas supply (CEC, 2023c).

Transportation Fuels

The energy consumed by the transportation sector accounts for roughly 38 percent of California's total energy consumption (EIA, 2023b). Gasoline and diesel, both derived from petroleum (also known as crude oil), are the two most common fuels used for vehicular travel. According to the U.S. Energy Information Administration, the State relies on petroleum-based fuels for 98 percent

[29] Behind-the-meter solar generation refers to on-site solar generation facilities that are designed for a single building or facility. Since the power is generated and used on-site, it is not connected to the regional power grid, and thus referred to as "behind the meter."

of its transportation needs (EIA, 2021). Gasoline accounted for about 59 percent of California's total transportation sector energy consumption, 60 percent of California's total transportation sector petroleum consumption, and 6 percent of total U.S. energy transportation sector consumption (EIA, 2021). California is the largest consumer of gasoline in the U.S. Approximately 26 percent of California's crude oil is obtained from within the state, about 15 percent comes from Alaska, and the remaining 59 percent comes from foreign lands (CEC, 2023g).

In 2022, gasoline sales in California amounted to approximately 11.5 billion gallons, and diesel fuel sales amounted to approximately 1.8 billion gallons (CEC, 2023h). The CEC forecasts demand for gasoline in California will range from 12.1 billion to 12.6 billion gallons in 2030, with most of the demand generated by light-duty vehicles. While the models show an increase in light-duty vehicles along population and income growth over the forecast horizon, total gasoline consumption is expected to decline, primarily due to increasing fuel economy (stemming from federal and state regulations) and gasoline displacement from the increasing market penetration of zero emission vehicles (ZEVs). For diesel, demand is forecast to increase modestly by 2030, following the growth of California's economy, but would be tempered by an increase in fleet fuel economy and market penetration of alternative fuels, most prominently by natural gas in the medium- and heavy-duty vehicle sectors (CEC, 2018).

California has about 4 percent of the nation's total crude oil reserves, and it is the sixth-largest crude oil producer among the states. (EIA, 2023c). Crude oil is moved from area to area within California through a network of pipelines that carry it from both onshore and offshore oil wells to the refineries that are in the San Francisco Bay Area, the Los Angeles area, and the Central Valley. Currently, 14 petroleum refineries operate in California, processing approximately 1.71 million barrels of crude oil per day (CEC, 2023d).

Other transportation fuel sources used in California include alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70 percent alcohol), natural gas (compressed or liquefied), liquefied petroleum gas, hydrogen, and fuels derived from biological materials (i.e., biogas).

Regional

Electricity and Natural Gas

The nine-county Bay Area, including the UCSF BCH Oakland campus site, is served by PG&E, an investor-owned utility company that provides electricity and natural gas supplies and services throughout a 70,000-square-mile service area that extends from Eureka in the north, to Bakersfield in the south, and from the Pacific Ocean on the west to the Sierra Nevada on the east. Operating characteristics of PG&E's electricity and natural gas supply and distribution systems are provided below.

Electric Utility Operations

PG&E provides "bundled" services (i.e., electricity generation, transmission, and distribution services) to most of the six million customers in its service territory, including residential, commercial, industrial, and agricultural consumers. Customers also can obtain unbundled electricity that is transmitted and distributed by PG&E, but is generated and provided by alternative providers such as Electric Service Providers registered with California Public Utilities Commission (CPUC) that are non-utility entities that offer electric service to customers within the service territory of an electric utility; or municipalities, or community choice aggregators as allowed under Assembly Bill 117 (2002), as well as from self-generation distributed resources, such as rooftop solar installations. In Alameda County alone, electricity consumption in 2022 was 10,395 GWh (CEC, 2023e).

In recent years, PG&E has continued to make improvements to its electric transmission and distribution systems to accommodate the integration of new renewable energy resources, distributed generation resources, and energy storage facilities, and to help create a platform for the development of new Smart Grid technologies that help with load balancing and ensuring reliable electricity delivery to end customers. In December 2014, the CPUC issued Decision D.14-12-079 that permits the California investor-owned electric utilities to own electric vehicle (EV) retail charging equipment in their respective service territories to help meet the state's goal of reducing greenhouse gas (GHG) emissions by promoting cleaner transportation. On February 9, 2015, PG&E filed an application to request that the CPUC approve their proposal to develop, maintain, and operate an EV-charging infrastructure in its service territory. In 2016, the CPUC established a three-year electric vehicle (EV) program of $130 million to deploy up to 7,500 charging stations. Further deployment of light duty EV infrastructure was considered and approved in a second phase of the program with a total PG&E budget of over $236 million per CPUC Decision D.18-05-040 (EPIC, 2018).

Electricity Transmission

Transmission lines are high voltage power lines that transmit electricity between electric substations. PG&E owns approximately 19,200 circuit miles of interconnected transmission lines operating at voltages ranging from 60 kilovolts (kV) to 500 kV. PG&E also operates approximately 92 electric transmission substations with a capacity of approximately 64,700 megavolt amperes (MVA). PG&E's electric transmission system is interconnected with electric power systems in the Western Electricity Coordinating Council, which includes many western states, Alberta and British Columbia, and parts of Mexico (Reuters, 2020).

PG&E periodically upgrades substations and reconductors transmission lines to improve maintenance and system flexibility, reliability, and safety, and undertakes various new transmission projects to upgrade and expand the capacity of its transmission system to secure access to renewable generation resources and replace aging or obsolete equipment and improve system reliability (PG&E, 2023a).

Electricity Distribution

Distribution power lines are lower voltage power lines that transmit electricity from electric substations to end user, such as residential and other land use developments. PG&E's electricity distribution network consists of approximately 107,200 circuit miles of distribution lines (of which approximately 20 percent are underground and approximately 80 percent are overhead), approximately 19,200 circuit miles of high voltage electric transmission lines, 59 transmission switching substations, and 605 distribution substations, with a capacity of approximately 31,800 MVA (PG&E, 2019).

These distribution substations serve as the central hubs for PG&E's electric distribution network. Emanating from each substation are primary and secondary distribution lines connected to local transformers and switching equipment that link distribution lines and provide delivery to end-users. In some cases, PG&E sells electricity from its distribution facilities to entities, such as municipal and other utilities, that resell the electricity. PG&E also operates electric distribution control center facilities in Concord, Rocklin, and Fresno, California (PG&E, 2019).

Natural Gas Operations

PG&E provides natural gas transmission services to "core" customers and to "non-core" customers (i.e., industrial, large commercial, and natural gas-fired electric generation facilities) that are connected to its gas system in its service territory. Core customers can purchase natural gas procurement service (i.e., natural gas supply) from either PG&E or non-utility third-party gas procurement service providers (referred to as core transport agents). When core customers purchase gas supply from a core transport agent, PG&E still provides gas delivery, metering, and billing services to those customers. When PG&E provides both transmission and procurement services, PG&E refers to the combined service as "bundled" natural gas service. Currently, more than 96 percent of core customers, representing nearly 85 percent of the annual core market demand, receive bundled natural gas service from PG&E (PG&E, 2023a).

PG&E does not provide procurement service to non-core customers, who must purchase their gas supplies from third-party suppliers. PG&E offers backbone gas transmission, gas delivery (local transmission and distribution), and gas storage services as separate and distinct services to its non-core customers. Access to PG&E's backbone gas transmission system is available for all natural gas marketers and shippers, as well as non-core customers. PG&E also delivers gas to off-system customers (i.e., outside of PG&E's service territory) and to third-party natural gas storage customers. In 2022, total consumption of natural gas in Alameda County was 377.31 million therms, or 37,731,000 MMBtu (CEC, 2023b).

Natural Gas Supplies

PG&E receives natural gas from all the major natural gas basins in western North America, including basins in western Canada, the Rocky Mountains, and the southwestern United States. PG&E also is supplied by natural gas fields in California. PG&E purchases natural gas to serve its core customers directly from producers and marketers in both Canada and the United States. The contract lengths and natural gas sources of PG&E's portfolio of natural gas purchase contracts have fluctuated generally based on market conditions. PG&E provides approximately 970 billion cubic feet of natural gas per year to its customers (PG&E, 2023b).

Natural Gas System Assets

PG&E owns and operates an integrated natural gas transmission, storage, and distribution system that includes most of northern and central California. PG&E's natural gas system consists of approximately 42,800 miles of distribution pipelines, over 6,400 miles of backbone and local transmission pipelines, and various storage facilities. PG&E owns and operates eight natural gas compressor stations on its backbone transmission system and one small station on its local transmission system that are used to move gas through PG&E's pipelines. PG&E's backbone transmission system is used to transport gas from PG&E's interconnection with interstate pipelines, other local distribution companies, and California gas fields to PG&E's local transmission and distribution systems.

Transportation Fuels

Gasoline and diesel fuel are by far the largest transportation fuels used by volume in San Francisco Bay Area. The total estimated 2022 sales of gasoline in Alameda County was 473 million gallons and the total estimated 2022 sales of diesel fuel in Alameda County was 57 million gallons (CEC, 2023h).

Other transportation fuel sources used in California include alternative fuels, such as methanol and denatured ethanol (alcohol mixtures that contain no less than 70 percent alcohol), natural gas (compressed or liquefied), liquefied petroleum gas (LPG), hydrogen, and fuels derived from biological materials (i.e., biomass).

UCSF Benioff Children's Hospital Oakland Campus

The UCSF BCH Oakland campus site is served by its chiller plant, high temperature water boiler plant, heating water heat exchangers and associated pumps, domestic hot water heaters, steam generators and deaerator, main electrical switchgear and emergency generators, medical vacuum pumps and medical air compressors, all of which originate at the BCH Oakland Central Utility Plant (CUP). In addition, two heating water boilers and one air cooled chiller are located at the roof of the D&T building, while another air-cooled chiller is located on the roof of the CUP/Cafeteria building (Mazzetti, 2022).

BCH Oakland currently purchases its energy from PG&E and Calpine Corporation. It should be noted that electricity used at other UCSF campus sites is procured and provided by the UC Regents as a registered Electric Service Provider through the Direct Access Program. This program is referred to as the UC Clean Power Program and contributes to UCSF's commitment to achieve carbon neutrality in indirect emissions through the purchase of carbon-free electricity. In the future, the BCH Oakland campus will also switch to procure clean electricity through the UC Clean Power Program, or from an alternative provider such as East Bay Community Energy. However, as it is unknown when the transition will happen, the analysis presented in this EIR assumes that once operational, BCH Oakland will continue to purchase energy from the existing providers.

As electric service providers, PG&E, Calpine, and UC Regents are required to maintain physical generating capacity adequate to meet the demand of their customers for electricity ("load"), including peak demand, to be delivered to locations and at times as may be necessary to provide reliable electric service. UC Regents is required to dispatch or schedule all the electricity resources within its portfolio in the most cost-effective way. UC Regents obtains its electricity supplies from power plants throughout California and is delivered through high-voltage transmission lines that form the PG&E power grid.

Renewable and Carbon-free Energy Resources

As discussed above, electricity needs of the BCH Oakland campus will ultimately be served by the 100 percent carbon-free electricity from the UC Clean Power Program in an effort to eliminate all carbon emissions from electricity use. As of 2019, the UC Clean Power Program became 100 percent carbon free. The UC Office of the President recently announced the construction of a new biogas plant and a utility-scale solar array, a collection of multiple solar panels that generate renewable electricity. The renewable projects will power UC campuses. Solar energy will be used to supplement campus electricity and the biogas will fuel a portion of UC's own utility plants that produce campus electricity, heating and cooling. Taken together, the projects will supply UC campuses with energy equivalent to the amount used by 15,000 California homes (UC Office of the President, 2020).

4.4.2 Regulatory Framework

Federal

Federal policies and regulations set broad energy efficiency standards and incentives for consumer products, automobile and fuel efficiency, etc. Such requirements, as those listed below, tend to be applicable to the manufacturing sector and are not directly applicable to the Project. Nonetheless they are listed here for informational purposes.

National Energy Conservation Policy Act

The National Energy Conservation Policy Act (NECPA) serves as the underlying authority for federal energy management goals and requirements. Signed into law in 1978, it has been regularly updated and amended by subsequent laws and regulations. This act is the foundation of most federal energy requirements. NECPA established energy-efficiency standards for consumer products and includes a residential program for low-income weatherization assistance, grants and loan guarantees for energy conservation in schools and hospitals, and energy-efficiency standards for new construction. Initiatives in these areas continue today.

National Energy Policy Act of 2005

The National Energy Policy Act of 2005 sets equipment energy efficiency standards and seeks to reduce reliance on nonrenewable energy resources and provide incentives to reduce current demand on these resources. For example, under the act, consumers and businesses can attain federal tax credits for purchasing fuel-efficient appliances and products, including hybrid vehicles; constructing energy-efficient buildings; and improving the energy efficiency of commercial buildings. Additionally, tax credits are available for the installation of qualified fuel cells, stationary microturbine power plants, and solar power equipment.

Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), signed in 2007, strengthens the key energy management goals for the federal government and sets more challenging goals than the National Energy Policy Act of 2005. The energy reduction and environmental performance requirements of Executive Order 13423 were expanded upon in Executive Order 13514 (Federal Leadership in Environmental, Energy, and Economic Performance), and signed in 2009.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 sets federal energy management requirements in several areas, including energy reduction goals for federal buildings, facility management and benchmarking, performance and standards for new buildings and major renovations, high-performance buildings, energy savings performance contracts, metering, energy-efficient product procurement, and reduction in petroleum use, including by setting automobile efficiency standards, and increase in alternative fuel use. This act also amends portions of the NECPA.

Corporate Average Fuel Economy (I) Standards

Established by the U.S. Congress in 1975, the I standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration (NHTSA) and United States Environmental Protection Agency (U.S. EPA) jointly administer the I standards. The U.S. Congress has specified that I standards must be set at the "maximum feasible level" with consideration given to: (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) need for the nation to conserve energy.[30]

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission (CEC). The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

California Energy Action Plan

California's *2008 Energy Action Plan Update* updates the *2005 Energy Action Plan II,* which is the state's principal energy planning and policy document. The plan maintains the goals of the original *Energy Action Plan*, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. First-priority actions to address California's increasing energy demands are to promote energy efficiency, demand response (i.e., reducing customer energy usage during peak periods to address power system reliability and support the best use of energy infrastructure), and use of renewable power sources. To the extent that these strategies are unable to satisfy increasing energy and capacity needs, the plan supports clean and efficient fossil-fuel fired generation.

State of California Integrated Energy Policy

In 2002, the Legislature passed Senate Bill (SB) 1389, which required the CEC to develop an integrated energy plan biannually for electricity, natural gas, and transportation fuels, for the California Energy Report. SB 1389 requires the CEC to prepare a biennial Integrated Energy Policy Report (IEPR) that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve

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30 For more information on the Corporate Average Fuel Economy standards, refer to https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy.

resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the state's economy; and protect public health and safety (Public Resources Code Section 25301[a]). The IEPR has replaced the Energy Action Plan as the chief program intended to provide a comprehensive statewide energy strategy to guide energy investments, energy-related regulatory efforts and GHG reduction measures.

The key strategies identified in the most recent, 2022 IEPR Update, are summarized below (CEC, 2022f).

Title 24 – California Energy Efficiency Standards

The Energy Efficiency Standards for residential and nonresidential buildings specified in Title 24, Part 6 of the California Code of Regulations were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated approximately every three years to allow for consideration and possible incorporation of new energy-efficiency technologies and methods. The current standards became effective on January 1, 2023.

California Green Building Standards Code (CALGreen, or Title 24 Part 11)

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards (CALGreen) Code. CALGreen is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. Since 2011, the CALGreen Code is mandatory for all new residential and non-residential buildings constructed in the state. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code was most recently updated in 2022, and new measures took effect on January 1, 2023.

Renewables Portfolio Standard (RPS)

The State of California adopted standards to increase the percentage that retail sellers of electricity, including investor-owned utilities and community choice aggregators, must provide from renewable resources. The standards are referred to as the RPS. Qualifying renewables under the RPS include bioenergy such as biogas and biomass, small hydroelectric facilities (30 MW or less), wind, solar, and geothermal energy. The CPUC and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy (CPUC, 2023).

Executive Orders S-14-08 and S-21-09

In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expanded the state's RPS to 33 percent renewable power by 2020. In September 2009, Governor Schwarzenegger continued California's commitment to the RPS by signing Executive Order S-21-09, which directed the California Air Resources Board (CARB) under its AB 32 authority to enact regulations to help the state meet its RPS goal of 33 percent renewable energy by 2020.

SB 350 – Clean Energy and Pollution Reduction Act of 2015

SB 350, known as the Clean Energy and Pollution Reduction Act of 2015, was enacted on October 7, 2015, and provides a new set of objectives in clean energy, clean air, and pollution reduction by 2030. The objectives include the following:

- To increase from 33 percent to 50 percent by December 31, 2030, the procurement of the state's electricity from renewable sources.
- To double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the bill increases required energy from renewable sources for both investor-owned utilities and publicly owned utilities from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

On the same day that SB 100 was signed, Governor Brown signed Executive Order B-55-18 with a new statewide goal to achieve carbon neutrality (zero-net GHG emissions) by 2045 and to maintain net negative emissions thereafter.

Appliance Efficiency Regulations, California Code of Regulations Title 20

California's Appliance Efficiency Regulations (20 CCR Part 160-1608) contain standards for both federally regulated appliances and non-federally regulated appliances. The regulations are updated regularly to allow consideration of new energy efficiency technologies and methods. The current regulations were adopted by the CEC on November 18, 2009. The standards outlined in the regulations apply to appliances that are sold or offered for sale in California. More than 23 different categories of appliances are regulated, including refrigerators, freezers, water heaters, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings.

Transportation Energy

AB 1007 (Pavley)-Alternative Fuel Standards

Assembly Bill 1007 (Pavley, Chapter 371, Statutes of 2005) required the CEC to prepare a state plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the State Alternative Fuels Plan in partnership with the CARB and in consultation with other state, federal, and local agencies. The final State Alternative Fuels Plan, published in December 2007, attempts to achieve an 80 percent reduction in GHG emissions associated with personal modes of transportation, even as California's population increases.

California Assembly Bill 1493 (AB 1493, Pavley)

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 (commonly referred to as CARB's Pavley regulations), enacted on July 22, 2002, requires CARB to set GHG emission standards for new passenger vehicles, light duty trucks, and other vehicles manufactured in and after 2009 whose primary use is non-commercial personal transportation. Phase I of the legislation established standards for model years 2009 through 2016 and Phase II established standards for model years 2017 through 2025 (CARB, 2017; U.S. EPA, 2012). Refer to Section 4.7, *Greenhouse Gas Emissions*, of this EIR for additional details regarding this regulation.

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS), established in 2007 through Executive Order S-1-07 and administered by CARB, requires producers of petroleum-based fuels to reduce the carbon intensity of their products that started with a 0.25 percent reduction in 2011, and culminated in a 10 percent total reduction in 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program, including a doubling of the carbon intensity reduction to 20 percent by 2030.

Petroleum importers, refiners, and wholesalers can either develop their own low carbon fuel products or buy LCFS credits from other companies that develop and sell low carbon alternative fuels, such as biofuels, electricity, natural gas, and hydrogen.

Executive Order B-16-12 – 2025 Goal for Zero Emission Vehicles

In March 2012, Governor Brown issued an executive order establishing a goal of 1.5 million ZEVs on California roads by 2025. In addition to the ZEV goal, Executive Order B-16-12 stipulated that by 2015 all major cities in California will have adequate infrastructure and be 'zero-emission vehicle ready' so that by 2020 the state will have established adequate infrastructure to support 1 million ZEVs; and that by 2050, virtually all personal transportation in the state will be based on ZEVs, and GHG emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

CARB's Advanced Clean Car Program

The Advanced Clean Cars emissions-control program was approved by CARB in 2012 and is closely associated with the Pavley regulations (CARB, 2017). The program requires a greater number of zero-emission vehicle models for years 2015 through 2025 to control smog, soot, and GHG emissions. This program includes the Low-Emissions Vehicle regulations to reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles; and the ZEV regulations to require manufactures to produce an increasing number of pure ZEV's (meaning battery and fuel cell electric vehicles) with the provision to produce plug-in hybrid electric vehicles (PHEV) between 2018 and 2025.

CARB's Mobile Source Strategy

The Mobile Source Strategy (2016) includes an expansion of the Advanced Clean Cars program (which further increases the stringency of GHG emissions for all light-duty vehicles, and 4.2 million zero-emission and plug-in hybrid light-duty vehicles by 2030). It also calls for more stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero-emission trucks primarily for classes 3 through 7 "last mile" delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45 percent reduction in GHG emissions, and a 50 percent reduction in the consumption of petroleum-based fuels. CARB's Mobile Source Strategy includes measures to reduce total light-duty vehicle miles travelled (VMT) by 15 percent compared to business-as-usual in 2050.

Executive Order B-48-18

On January 26, 2018, Governor Brown issued an executive order establishing a goal of 5 million ZEVs on California roads by 2030 and to spur the installation and construction of 250,000 plug-in electric vehicle chargers, including 10,000 direct current fast chargers, and 200 hydrogen refueling stations by 2025.

Local

City of Oakland General Plan

The City of Oakland adopted the *Oakland General Plan* in 1996 (City of Oakland, 1996). Goals and policies identified in the City's General Plan that related to energy use and conservation within the City the following:

> ***Policy CO-13.1*****:** Promote a reliable energy network which meets future needs and long-term economic development objectives at the lowest practical cost.
>
> ***Policy CO-13.2*****:** Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.
>
> ***Policy CO-13.3*****:** Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
>
> ***Policy CO-13.4*****:** Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality improvements.

University of California

University of California Policy on Sustainable Practices

According to the UC *Policy on Sustainable Practices*, the University of California's system-wide goal is to achieve carbon neutrality of scopes 1 and 2 by 2025, using the following strategies:

- Annual two percent reduction in energy use intensity;
- Cost-effective on-campus renewable energy installations; and
- System-wide purchasing pool for clean electricity, biogas, and offsets by 2025.

Further policies include:

- The energy performance of new buildings other than acute care must exceed Title 24 requirements by 20 percent or meet the whole-building energy performance targets listed below in **Table 4.4-1**;
- The energy performance of new acute care buildings should exceed ASHRAE 90.1 – 2010 by 30 percent or meet whole-building energy performance targets below in **Table 4.4-2**;
- No new fossil fuel combustion is allowed for buildings and retrofits after June 30, 2019, except those projects connected to an existing campus central thermal infrastructure; and
- All campuses will reduce GHG emissions from all scopes (Scope 1, Scope 2, Scope 3) 90% by 2045 (from a 2019 baseline) and neutralize any remaining emissions through carbon removal.

TABLE 4.4-1
THE WHOLE-BUILDING ENERGY PERFORMANCE TARGET

Calendar Years	Compliance Target	Stretch Target
2015-2016	65%	50%
2017-2018	60%	45%
2019-2020	55%	40%
2021-2022	50%	35%
2023-2024	45%	30%
2025 or after	40%	25%

SOURCE: UC, 2023, University of California – *Policy on Sustainable Practices*.

TABLE 4.4-2
WHOLE-BUILDING ENERGY PERFORMANCE TARGETS FOR ACUTE CARE FACILITIES AND MEDICAL OFFICE BUILDINGS

Facility	Acute Care			Medical Office Buildings		
	Benchmark Average	Target	Stretch Target	Benchmark Average	Target	Stretch Target
UC Davis Health	230	160	115	85	60	43
UC Irvine Health	230	160	115	80	56	40
UCLA Health	230	160	115	80	56	40
UC San Diego	230	160	115	80	56	40
UC San Francisco Health	230	160	115	80	56	40

The whole-building energy performance target is expressed as a percentage of the sum of the Annual Electricity and Annual Thermal targets (converted to kBTU/gsf-yr) based on ASHRAE (2012) Advanced Energy Design Guidelines.
SOURCE: UC, 2023, University of California – *Policy on Sustainable Practices*.

Healthcare buildings are subject to the overall carbon neutrality goal.

UC Strategic Energy Plan

The UC Strategic Energy Plan (SEP) was prepared in 2008 for all UC campuses, to fulfill one of the goals of UC's *Policy on Sustainable Practices* to implement energy efficiency projects in existing buildings. The UCSF portion of the SEP analyzes energy use and GHG trends and identifies potential energy efficiency retrofit projects at all buildings over 50,000 square feet at UCSF (primarily lighting, HVAC, commissioning and central plant measures). Energy savings, GHG emissions savings, and financial returns are estimated for hundreds of projects, which are grouped into Tier 1 (high priority) and Tier 2 (longer term planning) projects based on their energy savings and financial payback. The SEP project list is intended to be regularly updated by each campus to evaluate the feasibility of additional energy-saving measures.

University of California, San Francisco

UCSF has an aggressive sustainability program covering sustainability activities across the entire campus and medical center. Through its Office of Sustainability, UCSF has created work groups addressing sustainability in the following areas, some of which are directly related to energy consumption: Carbon Neutrality, Zero Waste, Water Conservation, Sustainable Food, Toxics Reduction, Green Procurement, Green Buildings, and Sustainable Operations.

UCSF Climate Action Plan, Long Range Development Plan and GHG Reduction Strategy

As part of implementing the UC *Policy on Sustainable Practices*, UCSF developed a Climate Action Plan in 2009, a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to AB 32. In addition, as part of the 2014 Long Range Development Plan (LRDP), UCSF developed a GHG Reduction Strategy (GHGRS) to provide streamlined analysis under CEQA for future development projects. Both these documents were updated in 2017 to create a combined UCSF Climate Action Plan – Greenhouse Gas Reduction Strategy to reflect changes that have occurred since 2014 relative to the goals outlined in the UC *Policy on Sustainable Practices* and the addition of new campus projects unforeseen at the time of LRDP adoption.

The UCSF BCH Oakland campus site is not currently included in the UCSF 2014 LRDP and the most recent update to the GHGRS (and consequently, not currently subject to the LRDP policies). However, UCSF proposes to amend the 2014 LRDP to include the BCH Oakland campus site, and prior to 2026 will prepare a GHGRS for the BCH Oakland campus site pursuant to the UC Policy on Sustainable Practices. LRDP general policies or overarching goals will become applicable, such as those identified in LRDP Chapter 3 and its appendices.

The 2014 LRDP identified the following campus-wide objectives related to energy:

Campus-Wide Objectives

4. **Promote Environmental Sustainability**

    F. Facilitate growth in an environmentally responsible manner while reducing UCSF's greenhouse gas emissions in compliance with the UC *Sustainable Practices Policy* and the goals of Assembly Bill 32 (AB32), the California Global Warming Solutions Act.[31]

The UCSF 2014 LRDP also included *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group:

Community Planning Principles

Sustainability

S1. Meet or exceed guidelines and standards in the University of California's *Sustainable Practices Policy* when planning and developing projects. Policy goals are categorized as follows: Green Building; Clean Energy; Climate Protection Practices (including greenhouse gas reduction); Sustainable Transportation; Sustainable Building Operations; Recycling and Waste Management; Environmentally Preferable Purchasing Practices; Sustainable Foodservices Practices.

Existing UCSF BCH Oakland Transportation Demand Management Program

UCSF currently implements a Transportation Demand Management (TDM) program required as part of the 2015 Campus Master Plan. The TDM Program includes strategies that emphasize commuting options other than driving alone, such as public transit, shuttle service, biking, walking, and carpooling. Based on a survey conducted in 2022, about 73 percent of the employees drive alone to work, which meets the mode share goal for the 2015 TDM program. About five percent of the employees carpool, six percent take BART and the UCSF BCH Oakland shuttle, eight percent use other modes, and eight percent work remotely. For the key features of BCH Oakland's existing TDM program, refer to the UCSF BCH TDM discussion in Section 4.11, *Transportation*.

4.4.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Approach to Analysis

This impact analysis evaluates the potential for the Project to result in the wasteful use of energy or wasteful use of energy resources during project construction and operation, consistent with Public Resources Code 21100(b)(3). The impact analysis is based on Section 15126.2(b) and Appendix F of the State *CEQA Guidelines*. The analysis provides construction and operational energy use estimates for the Project. This information is used to determine whether this energy use would be considered wasteful, inefficient, or unnecessary, taking into account available energy supplies and existing use patterns, the Project's energy efficiency features, and compliance with applicable

[31] UCSF is required to develop a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to AB32.

standards and policies aimed to reduce energy consumption, including the state's Title 24 Energy Efficiency Standards. Energy quantification details supporting the estimates presented in this section are based on the equipment schedule and activity assumptions used for the GHG emissions assessment presented in Section 4.6, *Greenhouse Gas Emissions*. The construction and operation of the Project are also assessed for consistency with the UC *Policy on Sustainable Practices* provisions that are designed to conserve and reduce energy consumption.

The data, assumptions, and methodology used to calculate energy use and assess potential impacts of the Project are described below.

Construction Energy Use

Construction activities associated with the Project would consume energy primarily in the form of transportation fuels (e.g., diesel and gasoline) used for haul trucks, heavy-duty construction equipment, and construction workers traveling to and from the Project site. Electricity consumed by any electric powered construction equipment would be minimal in comparison to the amount of diesel and gasoline consumed. Natural gas-powered equipment is generally not used in construction.

Construction activities and the associated energy use could vary substantially from day to day, depending on the phase and specific type of construction activity and the number of workers and vendors who would travel to the Project site. Construction activities are expected to begin in 2024 with the new hospital building expected to be complete by 2031. Renovations to existing buildings would be completed by 2033. This analysis relies on assumptions for the types, number and level of usage of construction equipment for each activity consistent with what was used for the air quality and GHG analyses.

All off-road construction equipment is assumed to be diesel-fueled. With regard to on-road construction vehicles, it is assumed that light-duty automobiles and trucks used by commuting workers would be fueled by gasoline and that on-road construction vehicles, such as vendor and haul trucks for demolition debris, soil, and other material hauling, would use diesel fuel. This analysis assumes that no electric on-road vehicles would be used during construction under the Project. Gasoline and diesel fuel use in construction equipment and vehicles was estimated using GHG emissions estimated from these sources and TCR 2022 default factors for calculating CO_2 emissions from gasoline and diesel fuels (TCR, 2022). Refer to **Appendix ENE** for detailed energy calculations.

Operational Energy Use

The Project would become operational in 2031 and would require long-term consumption of energy in the form of electricity, gasoline, and diesel fuel. As detailed in the Project Description, consistent with Green Building Standards for new buildings in the UC *Policy on Sustainable Practices*, the new hospital building would have no natural gas infrastructure and all new facilities would be entirely powered by electricity to meet the building energy use needs. Demolition of existing buildings as part of the Project would reduce natural gas use at the campus when compared to existing conditions. Electrification of the new facilities would increase electricity demand associated with building energy use for space and water heating. Electricity would also be used to treat, pump, and distribute potable water to the Project buildings and to treat wastewater generated in the by the Project. Diesel would be used for the testing and operation of the proposed emergency generators. Diesel would also be used in trucks serving the new hospital, which vehicle trips associated with employee, patient and visitor trips would primarily be gasoline-fueled.

The net changes to electricity and natural gas use at the BCH Oakland campus site due to the Project reported in this analysis are based on estimates prepared by UCSF's engineering consultant (Appendix ENE). Mobile source fuel use associated with operation of the Project was estimated using the net increase in average daily trips due to the Project obtained from the transportation analysis, default trip lengths in CalEEMod, and the default vehicle fleet and fuel mix for Alameda County for the year 2031, as derived from EMFAC2021. Energy estimates presented focus the net change in energy use with the Project over existing conditions. The increase in electricity use due to Project-generated VMT would not occur at the Project site but would be dispersed throughout the greater City of Oakland area where vehicles would be charged. While electric vehicle charging infrastructure consistent with CALGreen Tier 2 standards are proposed as part of the Project and would be available to Project employees, patients and visitors, the bulk of long-term charging is expected to occur at the owners' residences or at off-site charging stations. Diesel fuel consumption associated with the testing and maintenance of the proposed emergency generators is estimated based on the GHG emissions from generators estimated in Section 4.6, *Greenhouse Gases* in combination with TCR 2022 default factors for calculating CO_2 emissions from diesel fuel (TCR, 2022). The GHG estimates from CalEEMod assume a maximum of 50 hours of operation per year for testing and maintenance and 100 years of operation for emergency use, consistent with BAAQMD permit requirements.

Impact Analysis

Impact ENE-1: Implementation of the NHB Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. ***(Less than Significant)***

Construction Energy Use

Based on the projected equipment use and construction duration, the construction of the Project is estimated to result in the consumption of an average of approximately 61,926 gallons per year of diesel fuel, and an average of approximately 11,301 gallons per year of gasoline, over the approximately 9-year construction period. The level of energy usage would fluctuate depending on the energy intensity of construction activities underway during any particular time period.

Operational Energy Use

The net change in annual operational energy use upon buildout of the Project relative to existing conditions is summarized in **Table 4.4-3**.

TABLE 4.4-3
ANNUAL CHANGE IN OPERATIONAL ENERGY USE WITH NHB PROJECT

Energy Use Type	Net New Energy Use under NHB
Electricity	*MWh per year*
Building Energy	12,874
Mobile Sources - Electric Vehicles	241
Total Electricity Use	**13,114**
Natural Gas	*MMBtu per year*
Building Energy	--59,909
Mobile Sources	0.25
Total Natural Gas Use	**-56,909**
Diesel	*gallons per year*
Mobile Sources	44,005
Emergency Generators	45,631
Total Diesel Use	**89,636**
Gasoline	*gallons per year*
Mobile Sources	166,184
Total Gasoline Use	166,184

Analysis of Factors Identified in *CEQA Guidelines* Appendix F

Appendix F of the *CEQA Guidelines* identifies factors relating to whether a project would result in the wasteful, inefficient, or unnecessary consumption of fuel or energy, and conversely whether the project would fail to incorporate renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features. The Appendix F factors are addressed below and used as guidance to evaluate the energy impact of the Project relative to the identified significance criteria.

Appendix F.II.C.1: Energy Requirements and Energy Use Efficiencies

CEQA Guidelines Appendix F, Section II.C.1, includes the following impact guidance factor:

> *The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal. If appropriate the energy intensiveness of materials may be discussed.*

The energy inventories prepared for this evaluation include fuels used for construction and operation of the Project including electricity, natural gas, diesel, and gasoline. The estimated energy use levels are summarized above for the construction phase energy and in Table 4.4-3 for Project operations. For the effects of the Project's energy use on local and regional energy supplies and on the need for additional capacity, refer to the Appendix F.II.C.2 discussion, below.

In addition to direct construction- and operation-related energy consumption, indirect energy use would be involved to produce electricity, refine fuels, and make the materials and components used in construction, including the energy used for extraction of raw materials, manufacturing, and transportation. Energy intensiveness of electricity generation, fuel refining, and materials, also referred to as the energy "lifecycle," is not addressed in this analysis because the California Natural Resources Agency (CNRA) has indicated that lifecycle analyses are not required under CEQA (CNRA, 2009). The CNRA explained in the context of GHG emissions, that: (1) there exists no standard regulatory definition for lifecycle, and (2) even if a standard definition for lifecycle existed, the term might be interpreted to refer to emissions beyond those that could be considered 'indirect effects' as defined by *CEQA Guidelines*, and therefore, beyond what an EIR is required to estimate and mitigate (CNRA, 2009). This reasoning was reaffirmed in Section 15126.2(b) of the November 2018 *CEQA Guidelines*, which cautions that the analysis of energy impacts is subject to the rule of reason and must focus on energy demand caused by the project, signaling that a full "lifecycle" analysis that would account for energy used in building materials and consumer projects will generally not be required (CNRA, 2018).

Nonetheless, recycling reduces indirect energy consumption associated with making materials and components, and reduces the energy used for extraction of raw materials, manufacturing, and transportation. California has a statewide goal of 75 percent waste diversion. The UC *Policy on Sustainable Practices* includes waste reduction goals including a zero-waste goal to prioritize waste reduction through reduce, reuse, recycle and compost (or other forms of organic recycling) and divert 90 percent of municipal solid waste from the landfill. Construction activities that would be associated with the Project would be required to divert at least 75 percent of construction waste from landfill and incineration, with a target to exceed 85 percent. Further, the construction of the Project would comply with the requirements of the CALGreen mandatory measures. These recycling efforts would reduce the effects of the Project's indirect energy use. The operation of the Project would comply with the state goal by implementing waste diversion policies and infrastructure. The Project would provide areas for compactor/containers for trash and recycling waste.

Appendix F.II.C.2: Local and Regional Energy Supplies

CEQA Guidelines Appendix F, Section II.C.2, includes the following impact guidance factor:

> *The effects of the project on local and regional energy supplies and on requirements for additional capacity.*

As discussed above, the Project would result in an increase in consumption of electricity, gasoline, and diesel associated with mobile vehicle sources, building energy use, emergency generators, and construction activities. Electricity to the UCSF BCH Oakland campus site is currently provided by PG&E and Calpine Corporation. Although the BCH Oakland campus site will ultimately transition to receiving carbon-free electricity through the UC Clean Power Program, as a conservative approach for this analysis, it is assumed that PG&E and Calpine Corporation would continue to provide electricity to the campus site once the Project is operational. These entities have established contracts and commitments to ensure there is adequate electricity generation capacity to meet its current and future energy loads. Total operational energy use requirements of the Project are presented in Table 4.4-3.

Electricity

Annual average electricity demand associated with the construction period would be very minimal when compared to the annual operational electricity demand associated with the Project. Therefore, this discussion focuses on electricity demand that would occur during Project operations. To put the Project's operational electricity requirements in context, in 2022 the total generated electricity for California was 287,826 GWh of electricity (CEC, 2023e), of which consumers in Alameda County used 10,395 GWh (CEC, 2023e). The CEC estimates that state-wide electricity demand will increase to 339,160 GWh in 2030 based on an average annual mid-energy demand growth rate of 1.27 percent (CEC, 2018). As shown in Table 4.4-3, the anticipated long-term annual operational electricity use at the UCSF BCH Oakland campus site would increase by 10,146 MWh per year due to the Project. This represents 0.01 percent of the total 2022 state-wide electricity usage and 0.28 percent of Alameda County electricity usage.

Based on a comparison to the state-wide and Alameda County annual energy demand and the projected demand growth rate, the Project-related increase in electricity consumption would not cause adverse effects on local and regional energy supplies or require additional generation capacity beyond the state-wide planned increase to accommodate projected energy demand growth. In addition, the Project's operational electricity demand estimated conservatively excludes the benefits of LEED Gold design that would occur pursuant to the UC *Policy on Sustainable Practices* that requires all new buildings to achieve a LEED "Gold" certification at a minimum, as well as from future revisions to Title 24 energy standards, which would further reduce electricity demand. The Project would also comply with CALGreen requirements and be consistent with City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."

The transition toward electric power sources for on-road vehicles, including the installation of additional electric vehicle charging stations, would result in an increase in the calculated total electricity usage, as shown in Table 4.4-3, above; however, the increase in electricity use associated with mobile sources would all not be expected to occur at the BCH Oakland campus site, but would be dispersed throughout the greater City of Oakland area and would not significantly impact overall electricity supply or infrastructure. While charging stations would be available to serve users of the Project, the bulk of long-term charging is expected to occur at the vehicle owners' private residences.

Natural Gas

There would be no natural gas consumption associated with Project construction activities. During operation, the new hospital building would also have no new natural gas infrastructure and all new facilities would be powered by electricity. The Project would result in a reduction in natural gas use at the BCH Oakland campus site as some existing buildings currently using natural gas would be demolished and all new construction would be electric with no new natural gas infrastructure.

Transportation Fuels

Regarding Project-related transportation fuel consumption during construction, it is estimated that off-road construction equipment and on-road vehicles would consume an annual average of approximately 61,926 gallons of diesel fuel per year, and on-road worker vehicles would consume an annual average of approximately 11,301 gallons per year of gasoline, during the construction phase of the Project between 2024 and 2033. Once operational, it is estimated that the net annual increase in consumption of diesel fuel due to the Project would be approximately 28,141 gallons per year and the net annual increase in consumption of gasoline would be approximately 106,276 gallons per year (see Table 4.4-3). The annual average diesel use for Project construction and operation is equivalent to approximately 0.1 percent and 0.04 percent, respectively, of the diesel fuel sold in Alameda County. The annual average gasoline use for Project construction and operations are equivalent to less than 0.002 percent and 0.02 percent, respectively, of the total gasoline fuel sold in Alameda County (see "*Transportation Fuels*" in Section 4.5.1, *Environmental Setting*).

The overall usage would not be substantial relative to the total sales of transportation fuels in Alameda County. The Project would avoid wasteful or inefficient use of energy during construction by requiring that equipment be well maintained and requiring that idling be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes in accordance with the Title 13, Section 2485, of the California Code of Regulations. Also, vehicle use associated with operations of the Project would be reduced with continued implementation of the existing TDM program at the BCH Oakland campus site that includes strategies to encourage use of alternate modes of transportation over single passenger vehicle trips to the campus.

The Project would not require additional power generation plants, natural gas transmission facilities, or fuel refineries to be constructed. Through use of clean energy options, energy efficiency standards, and electric vehicle charging infrastructure, the Project would minimize impacts on the local and regional energy supply.

Appendix F.II.C.3: Peak and Base Period Demands

CEQA Guidelines Appendix F, Section II.C.3, includes the following impact guidance factor:

> *The effects of the project on peak and base period demands for electricity and other forms of energy.*

Peak period electrical demand is the short period of time during which electrical power is needed when electricity is in highest demand. Base period electrical load is the minimum amount of electrical demand needed over a 24-hour time period. Wasteful, inefficient, or unnecessary consumption or use of energy during the peak period of electrical demand has greater potential to cause adverse environmental effects compared to during the base period because of the higher demand during the peak period. The Project would not have a substantial impact on the peak and base period demands for electricity or other forms of energy. The Project's base energy consumption compared to regional and statewide energy consumption is discussed above. Further details and reasoning on the peak demand are described below.

In 2021, California's peak grid demand was 43,982 MW, while PG&E reached a maximum demand of 20,118 MW (Cal ISO, 2022). In comparison, the Project would consume a net increase of 10,146 MWh on an annual basis; assuming 12 hours of active electricity demand per day, that would be equivalent to approximately 2.3 MW at buildout (peak demand assuming

4,380 hours per year of active electricity demand).[32] This estimate conservatively excludes the benefits of LEED and improvements in demand response due to future updates to the Title 24 energy standards, CALGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development." Compliance with these standards would further reduce peak demand through its performance standards that are based on the time dependent valuation of energy, which uses the value of the electricity or natural gas used at every hour of the year to incentivize load shifting off of the peak use periods. Overall, the Project peak demand represents approximately 0.02 percent of PG&E's peak demand and it would have a relatively minor effect on PG&E's system-wide peak demands.

Appendix F.II.C.5: Energy Resources

CEQA Guidelines Appendix F, Section II.C.5, includes the following impact guidance factor:

> *The effects of the project on energy resources.*

The Project's energy use, including electricity, gasoline, and diesel consumption, would primarily be associated with construction activities, Project-generated vehicle trips, building energy use, and emergency generator testing and maintenance. The Project's energy demand during construction and operations is presented above. Based on the discussions for the F.II.C.2 and F.II.C.3 criteria above, the Project's use of energy would not have a substantial adverse effect on statewide or regional energy resources relative to wasteful, inefficient, or unnecessary use of energy.

Appendix F.II.C.6: Transportation Energy Use

CEQA Guidelines Appendix F, Section II.C.6, includes the following impact guidance factor:

> *The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.*

The Project's transportation energy demand in terms of gasoline and diesel quantities for construction and operation of the Project are presented above and in Table 4.4-3. The quantification of transportation energy use associated with Project operations is discussed in detail under *Approach to Analysis*, above. The BCH Oakland campus site is in an urban area well served by transit, bicycle and pedestrian facilities that would serve to reduce vehicle trips generated by the Project. The UCSF Oakland BCH campus site is within approximately one-half mile of the MacArthur BART Station and provides free shuttle service to and from the station. In general, vehicle trip-generating developments near public transit facilities result in reduced energy use by projects compared to projects not in the vicinity of such facilities. In addition, the Project would continue to implement BCH Oakland's existing TDM program to encourage use of alternate modes of transportation over single passenger vehicle trips to the campus which would also reduce the associated energy usage at buildout.

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[32] Calculated as follows: 1,129 MWh / 4,380 hours = 0.3 MW.

Conclusion

Based on the above analysis, the Project would result in a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of fuel or energy.

Mitigation: None required.

Impact ENE-2: Implementation of the NHB Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. *(Less than Significant)*

All relevant UC *Policy on Sustainable Practices* provisions that are designed to conserve and reduce energy consumption would be implemented. In addition, the Project would address UCSF's achievement of goals set forth in the adopted Carbon Neutrality Initiative, which are more stringent than the statewide target of achieving 80 percent below 1990 emission levels by 2050. The goals also have the effect of reducing overall energy usage. The Project would continue UCSF's energy conservation efforts at the BCH Oakland campus site by reducing energy demand through investments in achieving deep energy efficiency of the buildings and facilities on campus. The Project would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold Certification for the new hospital building and in general would meet and exceed CALGreen mandatory standards and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development." As an acute care facility, the new hospital building is required to outperform the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2010 baseline energy code by at least 30 percent and would target to outperform the code by at least 40 percent. The proposed Project would not conflict with the University's policy related to renewable energy or energy efficiency. The Project's impact regarding conflict with or obstruction of a state or local plan for renewable energy or energy efficiency would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-ENE-1: The NHB Project, combined with cumulative development in the BCH Oakland campus site vicinity and citywide, would not result in significant cumulative energy impacts. *(Less than Significant)*

Geographic Context

The geographic scope of potential cumulative effects with respect to energy resources includes PG&E's electrical grid that could serve the Project, the area from which transportation fuels would be provided (for this EIR, publicly available fuel sources in the vicinity of the Project site), and the cumulative projects discussed in Section 4.0.

Cumulative Impact and Project Contribution

Given UCSF's implementation of goals in the UC *Policy on Sustainable Practices* that would serve to improve efficiency of existing buildings, require new buildings to surpass Title 24 energy efficiency standards and, at a minimum, attain LEED Gold certification, the Project would not contribute to a significant cumulative impact related to the use of large amounts of fuel or energy in a wasteful or inefficient manner and the cumulative impact would be less than significant.

Given the relatively small percentage of the Project's fuel and energy uses compared to existing fuel and energy use in the region, the Project's less-than-significant incremental impacts related to the use of energy in a wasteful or inefficient manner would not be expected to combine with the incremental impacts of other projects to cause an adverse cumulative impact.

Project-related transportation fuel impacts could overlap with the transportation needs (and associated fuel needs) of previously approved past projects, as well as other present or future projects that would occur during the Project's construction and operation. However, there is no apparent significant cumulative condition to which the Project could contribute. The Project is designed to comply with several requirements in the UC *Policy on Sustainable Practices* to increase energy efficiency and use of renewable energy. Through its location in proximity to a variety of transit services and the implementation of the TDM program, the Project would reduce vehicle trips and associated transportation energy use reductions in transportation and associated energy usage. Therefore, the Project's incremental impact associated with its energy use would be less than significant.

Cumulative projects could require increased peak and base energy demands and, therefore, could cause or contribute to adverse cumulative conditions. However, the cumulative projects would be expected to have relatively small energy requirements, and would be subject to the same applicable federal, state, and local energy efficiency requirements (e.g., the State's Title 24 requirements) that would be required of the Project, which would result in efficient energy use during their construction and operation. Adverse Project-related impacts to electricity demand would be negligible and would not significantly impact peak or base power demands during construction, operation, or maintenance. Accordingly, the Project's incremental contribution to cumulative peak and base demands would not be cumulatively considerable.

Conclusion

Based on the above analysis, the Project would not involve wasteful, inefficient, or unnecessary consumption of fuel or energy and would not make a cumulatively considerable contribution to a cumulative impact on energy resources. The Project's cumulative impact would be less than significant.

Mitigation: None required.

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4.5 Geology and Soils

This section describes and evaluates the potential for the construction and operation of the proposed NHB Project to result in significant impacts related to geology, soils, seismic hazards, and paleontological resources. The section contains a description of the existing regional and local conditions of the Project site and the surrounding areas as it pertains to geology, soils, seismic hazards, and paleontology; includes a summary of the University plans and policies, and federal, State, and local regulations related to these resources; identifies criteria used to determine impact significance, and provides an analysis of the potential impacts related to geology, soils, and paleontological resources associated with the implementation of the Project as well as identifies feasible mitigation measures that could mitigate any potentially significant impacts.

The section is based on a review of published maps and data from the United States Geological Survey (USGS), California Geological Survey (CGS), University of California Museum of Paleontology; and geotechnical investigation reports prepared for the Project site. Though many of the geotechnical investigation reports prepared for the Project site were prepared between 2008 and 2015, conditions at the Project site remain the same and thus the reports retain their informational value.

4.5.1 Environmental Setting

Regional Setting

The Project site is located within the Coast Ranges geomorphic province which is characterized by marine sedimentary and volcanic rocks that form the Franciscan Assemblage occurring in northwest-trending ridges and valleys (CGS, 2002a).[33] The present physiography and geology of the Coast Ranges are the result of deformation and faulting associated with the tectonic boundary between the North American plate and the Pacific plate. Plate boundary movements are largely concentrated along the well-known fault zones, which in the area include the San Andreas, Hayward, and Calaveras as well as other lesser-order faults. These faults run in a general northwest/southeast alignment and have helped form the subparallel northwest trending mountain ranges (typically ranging in elevation from 2,000 to 4,000 feet above sea level and occasionally 6,000 feet) and valleys. The Coast Ranges province is bounded on the west by the Pacific Ocean and the east by the Great Valley province where the bedrock units of the Coast Ranges dip below the thick alluvium sequences of that province.

The Coast Ranges are composed of thick sedimentary strata that are heavily deformed by tectonic forces. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The northern Coast Ranges are dominated by irregular, knobby, landslide-topography of the Franciscan Assemblage also referred to as the Franciscan Complex. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma, and Clear Lake volcanic fields. The dominant feature of the province, the San Andreas Fault Zone, is more than 600 miles long, extending from Point Arena to the Gulf of California.

[33] The Franciscan Assemblage is a name applied to the various rock units that form the bulk of the Coast Range Mountains.

Local Setting

Topography

The UCSF BCH Oakland campus site, including the Project site, is located on an alluvial plain that slopes gradually southwest from the Berkeley Hills to the San Francisco Bay. The majority of the Project site is relatively flat with a ground surface elevation varying between approximately 90 and 100 feet above NAVD.[34] Within the eastern portion of the Project site, the State Route (SR) 24 ramp embankment rises at a slope of approximately 2.5:1 (horizontal to vertical) to an elevation of about 130 feet above NAVD. No open creek or stream channels cross the Project site. Temescal Creek is contained in an underground culvert that runs east to west through the southern end of the Project site (Fugro West, 2009; Sandis, 2022).

Soils

Holocene aged alluvial fan and fluvial deposits (Qhaf) underlie the Project site. Borings indicate that up to 4 to 8 feet of clay fill, with varying amounts of sand and gravel are present in areas on the Project site. Stiff lean clay was typically encountered directly below the fill, underlain by interlayered clayey sands to sandy clays over stiff lean clay. The clayey sands have been interpreted as paleochannel deposits associated with a meandering Temescal Creek, as the creek bed location shifted gradually over geologic time from the origins of the creek until it was channelized in an underground culvert. Soils in the eastern portion of the Project site in the location of the SR 24 embankment consist of 15 to 32 feet of clayey sand and gravel fill, overlying the native alluvial soils (Fugro West, 2009; 2014).

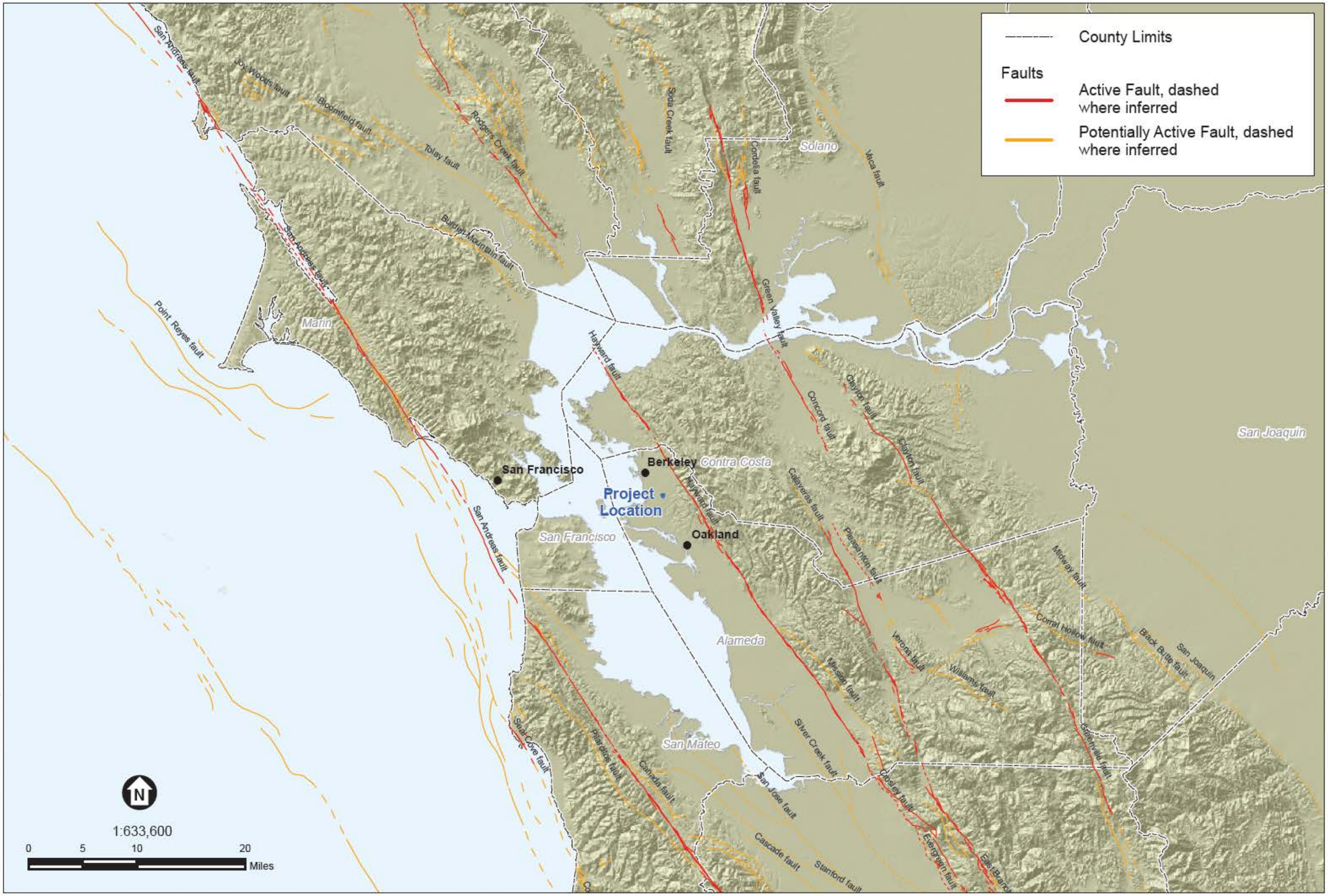
Fault Rupture

Background

The Project site lies within a region of California that contains many active and potentially active faults, as shown in **Figure 4.5-1**. Fault rupture is defined as the displacement that occurs along the surface of a fault during an earthquake. Based on criteria established by the CGS, faults are classified as either active, potentially active, or inactive.[35] Faults are considered active when they have shown evidence of movement within the past 11,700 years (i.e., Holocene epoch) (CGS 2018). Potentially active faults are those that have shown evidence of movement between 11,700 and 1.6 million years ago (Quaternary age). Faults showing no evidence of surface displacement within the last 1.6 million years are considered inactive.

[34] The North American Vertical Datum of 1988 (NAVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary from place to place, season, and time of day.

[35] The CGS was formerly called the California Division of Mines and Geology (CDMG).



D202201057.00 - UCSF BCH Oakland\02 Graphics\Illustrator

SOURCE: Fugro West, 2009

ESA

UCSF BCH Oakland NHB Project

Figure 4.5-1
Regional Fault Map

The Alquist-Priolo Earthquake Fault Zoning Act (formerly known as the Alquist-Priolo Special Studies Zones Act) established state policy to identify active faults and determine a boundary zone on either side of a known fault trace, called the Alquist-Priolo Earthquake Fault Zone. The delineated width of an Alquist-Priolo Earthquake Fault Zone is based on the location precision, complexity, or regional significance of the fault and can be between 200 and 500 feet in width on either side of the fault trace. If a project site lies within a designated Alquist-Priolo Earthquake Fault Zone, a geologic fault rupture investigation must be performed to demonstrate that a proposed building site is not threatened by surface displacement from the fault before development permits may be issued.

Project Site

The closest faults to the Project site are the Hayward-Rodgers Creek Fault, located about 2.1 miles northeast; the Calaveras Fault, located about 13 miles east; the Concord-Green Valley Fault, located about 16 miles northeast; and the San Andreas Fault, located approximately 17 miles southwest.

Ground Shaking

The effects of seismic shaking are dependent on the distance from the epicenter, the causative fault, and the underlying geotechnical characteristics of the onsite geology. The U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities (WGCEP; also known as UCERF3) evaluated the likelihood of one or more earthquakes of moment magnitude (M_w) 6.7 or higher occurring in the San Francisco Bay Area.[36] The result of the most recent evaluation indicated a 72 percent likelihood that such an earthquake event will occur in the Bay Area sometime in the next 30 years, beginning 2014. Within this 72 percent probability, the Hayward-Rodgers Creek and Calaveras fault systems are the two most likely fault systems to cause the event (WGCEP 2015). The north and south Hayward faults together are capable of generating about a M_w 7.0 earthquake. An earthquake of this magnitude would generate severe seismic shaking [Modified Mercalli Intensity (MMI) 8] at the Project site (ABAG, 2023a).

The secondary effects of seismic shaking include subsidence, liquefaction, settlement, landslides, and lateral spreading, and are described below.

Landslides and Slope Stability

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. A slope failure is a mass of rock, soil, and debris displaced downslope by sliding, flowing, or falling. Exposed rock slopes undergo rockfalls, rockslides, or rock avalanches, while soil slopes experience shallow soil slides, rapid debris flows, and deep-seated rotational slides. Landslides may occur on slopes of 15 percent or less; however, the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges.

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36 Moment magnitude is related to the physical size of a fault rupture and movement across a fault. The Richter magnitude scale reflects the maximum amplitude of a particular type of seismic wave. Moment magnitude provides a physically meaningful measure of the size of a faulting event (CGS 2002b).

As discussed above, the majority of the Project site is relatively flat, with the exception of the vegetated SR 24 embankment on the eastern side of the Project site, which is stabilized with a retaining wall that is located along the base of the slope in the central portion of the embankment. There is no evidence of previous or active slides on the Project site. The Project site is not within a mapped area of existing or potential slope instability, nor is it located within a State of California designated seismically induced landslide hazard zone or City of Oakland Landslide Hazard Zone. For these reasons, the potential for landslide and slope stability issues at the Project site is considered low (Fugro West, 2009; 2014).

Subsidence

Land subsidence is a gradual settling or sudden sinking of the Earth's surface caused by subsurface movement of earth materials. The principal causes of subsidence are aquifer system compaction, drainage of organic soils, underground mining, hydrocompaction, sinkholes, and thawing permafrost. The conditions needed for these hazards are not known to exist within the Project area (Fugro West, 2009).

Liquefaction

Liquefaction is a form of earthquake-induced ground failure that occurs when relatively shallow, loose, granular, water-saturated soils behave similarly to a liquid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions exist: (1) shallow [50 feet below ground surface (bgs) or less] groundwater; (2) low-density non-cohesive (granular) soils; and (3) high-intensity ground motion. Liquefaction is typified by a buildup of pore-water pressure in the affected soil layer to a point where a total loss of inherent shear strength occurs, thus causing the soil to behave like a liquid. Saturated, loose to medium-dense, near-surface non-cohesive soils and cohesive soils exhibit the highest liquefaction potential. Liquefaction usually results in horizontal and vertical movement of soils from lateral spreading (i.e., lateral displacement of gently sloping ground) of liquefied materials and post-earthquake settlement of liquefied materials. The effects of liquefaction on level ground include potential seismic settlement, sand boils, ground oscillation, and bearing capacity failures below structures.

The Project site is located within a California Geological Survey Seismic Hazard Zone for liquefaction as defined by the Seismic Hazards Mapping Act, indicating a liquefaction investigation is required in this area by the State of California. ABAG rates the majority of the Project site as a moderate earthquake liquefaction susceptibility zone, except for the southern tip of the Project site in the vicinity of Temescal Creek, which was rated with a very high earthquake liquefaction susceptibility (ABAG, 2023b). However, based on site-specific liquefaction studies conducted in 2008 and 2009, generally the Project site has a low potential for liquefaction. Soils at two boring locations in the southern portion of the Project site have thin layers of clayey sand, presumed to be paleochannels of Temescal Creek, which could be susceptible to liquefaction. However, the clayey sand materials identified in the borings are within what are typically dense granular layers, and thus, determined have a low potential for liquefaction (Fugro West, 2009).

Seismically Induced Settlement

Settlement of the ground surface can be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur because of the relatively rapid compaction and settling of subsurface materials (particularly loose, uncompacted, and variable sandy sediments above the water table) due to the rearrangement of soil particles during prolonged ground shaking. Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different amounts). Areas underlain by artificial fill can be particularly susceptible to this type of settlement if not addressed adequately in geotechnical site preparations (e.g., recompaction of site soils or replacement with engineered fill).

The Project site has been developed and it would be expected that some settlement has occurred in the past due to existing and historical structural loads. As a result, the potential for settlement of soils above groundwater due to earthquake-induced ground shaking at the Project site is low. However, portions of the Project site that contain loose or non-engineered fill may be susceptible to settlement or differential settlement (City of Oakland, 2015).

Expansive Soils

Expansive soils are soils that possess what is described as “shrink-swell” behavior because they include clay minerals characterized by their ability to undergo significant volume change (shrink or swell) due to variation in moisture content. Typically, soils that exhibit expansive characteristics comprise the upper 5 feet of the surface. Sandy soils are generally not expansive, while clayey soils have a higher potential to be expansive. Changes in soil moisture content can result from rainfall, irrigation, pipeline leakage, perched groundwater, drought, or other factors. Volumetric change of expansive soils may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs-on-grade, or pavements supported on these materials over long periods of cyclical changes in volume. Structural damage is usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. There is moderate to high expansion potential for clayey surface soils at the Project site (Fugro West, 2009).

Soil Erosion

Erosion is the wearing-away of soil and rock by processes such as mechanical or chemical weathering, mass wasting, and the action of waves, wind, and underground water. Excessive soil erosion can eventually lead to the damage of building foundations and roadways. In general, areas that are most susceptible to erosion are those that would be exposed during the construction phase when earthwork activities disturb soils and require stockpiling. Typically, soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, or landscaping. However, changes in drainage patterns can also cause areas to be susceptible to the effects of erosion.

Paleontological Resources and Unique Geologic Features

As discussed above, the Project site is underlain by Holocene[37]-age landforms. The surficial Holocene deposits are too recent to contain significant paleontological resources (fossils). Underlying these Holocene deposits at an unknown depth are older Pleistocene[38] deposits that have the potential to contain significant paleontological resources. Locally, these older sediments contain invertebrate and vertebrate fossils, many of which are representative of the Rancholabrean[39] land mammal age. Fossils found in alluvium of this age include, but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles, and amphibians (City of Oakland, 2015).

A prior University of California Museum of Paleontology (UCMP) fossil locality database search conducted for the campus site indicated there were no recorded paleontological resources within the Project site, nor does the Project site contain a unique geological feature. There were, however, 13 recorded vertebrate fossil localities within four miles of the Project site. Most of these fossils are of Pleistocene age and include mammoth, bison, camel, and horse (City of Oakland, 2015).

4.5.2 Regulatory Framework

State

Alquist-Priolo Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code Section 2621) was enacted by the State of California in 1972 to address the hazard of surface faulting to structures for human occupancy. The primary purpose of the Alquist-Priolo Earthquake Fault Zoning Act is to prevent the construction of buildings intended for human occupancy on the surface traces of active faults. The Alquist-Priolo Earthquake Fault Zoning Act is also intended to provide the citizens with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings against ground shaking.

The Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish regulatory "earthquake fault zones" around the surface traces of active faults and to issue appropriate maps to assist cities and counties in planning, zoning, and building regulation functions. The Alquist-Priolo Earthquake Fault Zoning Act and its regulations are presented in CGS Special Publication (SP) 42, Fault-Rupture Hazard Zones in California (CGS 2018). As discussed previously, the Project site is not located within an Alquist-Priolo Fault Rupture Hazard Zone and, therefore, would not be subject to the requirements of the Alquist-Priolo Earthquake Fault Zoning Act.

Seismic Hazards Mapping Act

In order to address the effects of strong ground shaking, liquefaction, landslides, and other ground failures due to seismic events, the State of California passed the Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690-2699). Under the Seismic Hazards Mapping Act, the

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[37] Holocene time is from the present to 11,700 years ago.

[38] Pleistocene time is from 11,700 to 2.6 million years ago.

[39] Rancholabrean time is from 11,000 to less than 240,000 years ago.

State Geologist is required to delineate "seismic hazard zones." Improvements located within a liquefaction or seismically induced landslide hazard area are required to adhere to CGS SP 117A, Guidelines for Evaluating and Mitigating Seismic Hazards in California (CGS, 2008).

California Building Standards Code

The California Building Standards Code (CBSC) (Title 24 California Code of Regulations) is the building code for California. The CBSC is maintained by the California Building Standards Commission, which is granted the authority to oversee processes and regulations related to the California building codes by California Building Standards Law. The CBSC is based on several criteria: standards adopted by states based on national model codes, national model codes adapted to meet California conditions, and standards passed by the California legislature that address concerns specific to California.

The CBSC contains general building design and construction requirements relating to fire and life safety, structural safety, and access compliance. CBSC provisions provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures and certain equipment. The provisions of the CBSC apply to the construction, alteration, movement, replacement, location, and demolition of every building or structure, or any appurtenances connected or attached to such buildings or structures throughout California. The CBSC is published on a triennial basis, and supplements and errata can be issued throughout the cycle. The 2022 CBSC became effective on January 1, 2023.

California Department of Health Care Access and Information

UCSF's hospitals fall under the jurisdiction of the *Alfred E. Alquist Hospital Facilities Seismic Safety Act (Alquist Seismic Safety Act*) and Senate Bill 1953 (SB 1953), an amendment of the *Alquist Seismic Safety Act*, passed in 1994. The *Alquist Seismic Safety Act* and subsequent bill require all hospital facilities to comply with seismic safety building standards as defined by the California Department of Health Care Access and Information (HCAI) [formerly Office of Statewide Health Planning and Development (OSHPD)].

HCAI is responsible for carrying out the provisions of SB 1953. A department of the California Health and Human Services Agency, HCAI's primary goals include assessing California's healthcare infrastructure, managing the healthcare workforce, providing healthcare outcomes information to the public, insuring healthcare facilities development loans, and operating the Hospital Seismic Safety Program, which enforces building seismic safety. HCAI's Hospital Building Safety Board further advises the director of the HCAI on the administration of SB 1953 and acts as a board of appeals for hospital seismic safety issues.

SB 1953 was adopted in part so that, after a major earthquake or disaster, hospital facilities can continue to provide care to their current occupants as well as any new patients that might arrive after the event.

All of UCSF's hospital buildings must meet certain HCAI standards. If a building is to remain classified as an acute-care hospital facility[40] and thus, be compliant with SB 1953, the owner of the building must complete seismic evaluations in accordance with the Seismic Evaluation Procedures as specified in SB 1953; prepare a comprehensive plan and schedule for how each building will become compliant with SB 1953, within three years of the evaluation; and submit the report and a compliance plan to HCAI for review and approval.

In the process of compliance, HCAI and a hospital building owner evaluate both nonstructural components (communications, medical gas, etc.) and structural components (actual building structure) of acute-care hospital facilities that might sustain damage during a seismic event. Each acute-care facility is assigned a Structural Performance Category (SPC) rating and a Nonstructural Performance Category (NPC) rating. After the evaluation process, HCAI either confirms or changes the rating. The hospital then receives guidance from HCAI on how upgrades can continue (HCAI, 2023a). **Table 4.5-1** presents HCAI SPC and NPC ratings and descriptions for acute-care hospital facilities.

In general, low scores mean hospital building systems are not prepared for a disaster, and high scores mean hospital building systems are prepared. If the building is not in compliance with SB 1953 based on the scores, seismic retrofit regulations (Division III-R) are applied to the building to help in its retrofit. Replacing older hospitals with modern hospitals is intended to increase the score of UCSF's medical facilities. A number of laws have amended SB 1953 since passing, including AB 2190, SB 90, SB 306, and SB 499, which have mainly adjusted timelines for facilities to complete the requirements.

HCAI added a new SPC category, SPC-4D, to enable nonconforming buildings to withstand an earthquake and remain operable. SPC-4D is a voluntary program that is primarily used to retrofit SPC-2 buildings. The retrofit work needs to be completed by 2030 to allow acute care services to remain in existing noncompliant buildings beyond 2030. SPC-4D became part of the California Building Standards Code, under Section 303A.3.3 in January 2019.

For the campus site, all acute care buildings have an SPC-3 or higher rating except for A/B Wing and B/C Wing, which have an SPC-1 rating. With respect to nonstructural performance all the hospital buildings have an NPC-2 rating, except for the Western Addition Building and Chiller Building, which have an NPC-4 rating (HCAI, 2023b).

[40] An acute-care hospital provides emergency services and general medical and surgical treatment for acute disorders rather than long-term residential care for chronic illness.

TABLE 4.5-1
HCAI STRUCTURAL PERFORMANCE CATEGORIES AND NONSTRUCTURAL PERFORMANCE CATEGORIES FOR ACUTE CARE HOSPITAL FACILITIES

Performance Categories	HCAI Performance Categories Description
Structural Performance Category (SPC)	
SPC-0	No rating was reported to HCAI.
SPC-1	These buildings have a high risk of collapse in an earthquake and are a significant safety hazard to the public. These buildings had to be retrofitted, replaced, or removed from acute care classification by 2020.
SPC-2	These buildings are in compliance with pre-1973 California Building Code but are not in compliance with the Alquist Hospital Facilities Seismic Safety Act. These buildings do not pose a significant safety hazard but might not be functional after a strong earthquake. These buildings must be compliant with the Act by January 1, 2030, or removed from acute care classification.
SPC-3	These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings might sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under HCAI building permits. They buildings may be used to January 1, 2030, and beyond.
SPC-4	These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings may sustain structural damage and might not be able to provide care after an event, but they have been constructed or reconstructed under HCAI building permits. They can be used to January 1, 2030, and beyond.
SPC-5	These buildings are compliant with the Alquist Hospital Facilities Seismic Safety Act. These buildings are reasonably capable of providing care after an event, and they have been constructed or reconstructed under HCAI building permits. They can be used to January 1, 2030, and beyond.
Nonstructural Performance Category (NPC)	
NPC-0	No rating was reported to HCAI.
NPC-1	Basic systems used in life safety and care are not properly anchored and will not survive an earthquake event. Communications, emergency power, medical gas, and fire alarm systems must be anchored by January 1, 2002.
NPC-2	Communications systems, emergency power supplies, bulk medical gas systems, fire alarm systems, and emergency lighting and exit signs are properly anchored.
NPC-3	Basic systems used in life safety and care are properly anchored in critical areas of the hospital. If there is not significant structural damage, basic emergency medical care should be able to continue.
NPC-4	All architectural, mechanical, electrical systems, components and equipment, and hospital equipment are properly anchored. If there is not significant structural damage and problems with water and sewer systems, basic emergency medical care should be able to continue.
NPC-5	All basic systems used in life safety and care are properly anchored. In addition, the building has water and wastewater holding tanks (integrated into the plumbing system) and an on-site fuel supply that will last through 72 hours of acute care operations. Radiological service can also continue.

SOURCE: HCAI, 2023a

Public Resources Code Section 5097.5 and Section 30244

State requirements for paleontological resource management are included in PRC Section 5097.5 and Section 30244. Section 5097.5 prohibits the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency. It requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (State, county, city, district) lands. Section 30244 requires that, where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

UCSF

University of California Seismic Safety Policy

The University of California's *Seismic Safety Policy* originally developed in 1975 and last updated March, 2021[41] applies to all UC facilities within California except 1) those under the regulatory authority of the HCAI or 2) K-12 schools or community college facilities built after 2018 under the regulatory authority of the Division of the State Architect (DSA). The policy requires that buildings and facilities where University operations and activities occur be acquired, built, maintained, and rehabilitated to an acceptable level of earthquake safety, based on the CBSC, Part 2, CBC. The purpose of this policy is to use current earthquake engineering practices and University resources to provide an acceptable level of earthquake safety for students, employees, and the public who occupy University buildings and other facilities, at all locations of University operations and activities to the maximum extent feasible. This policy addresses a number of topics, including but not limited to: surveying of existing buildings and facilities; interim use plans; a program for abatement of seismic hazards in buildings and other facilities; seismic rehabilitation standards; post-earthquake response; standards for new construction and renovation, and seismic peer review.

UCSF 2014 LRDP

The UCSF 2014 LRDP identified the following campus-wide objectives related to seismicity, geology and soils:

Campus-Wide Objectives

3. **Ensure UCSF's Facilities are Seismically Safe**
    A. Ensure inpatient facilities meet state seismic requirements, as set forth in the *Alquist Seismic Safety Act* (SB 1953), by constructing and maintaining modern, seismically safe hospitals and facilities that will remain operational in the event of a major earthquake.

    B. Plan new facilities and implement improvements to comply with UC's Seismic Safety Policy, to ensure a seismically safe environment for UCSF patients, visitors, physicians and staff.

    C. Designate buildings for renovation, demolition, and replacement as warranted.

4.5.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

    i. 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

[41] This policy is periodically updated and the most recent version can be found at https://policy.ucop.edu/doc/3100156/Seismic.

substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42;

ii. Strong seismic ground shaking;

iii. Seismic-related ground failure, including liquefaction; or

iv. Landslides.

b) Result in substantial soil erosion or the loss of topsoil;

c) 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;

d) Be located on expansive soil[42] creating substantial direct or indirect risks to life or property;

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water;

f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature; or

g) Exceed the LRDP EIR standard of significance by exposing people to structural hazards in an existing building rated Level V (Poor), or Level VI (Very Poor), under the University's seismic performance rating system, or substantial nonstructural hazards.

Criteria Not Analyzed

There would no impact related to the following topics for the reasons described below:

- ***Fault rupture.*** The Project site is not located within or immediately adjacent to any known active fault, and therefore, the potential for fault rupture to adversely affect the Project site is very low. No impact would occur.
- ***Landslides.*** As discussed in Section 4.5.1, *Environmental Setting*, the majority of the Project site is largely flat, with the exception of the vegetated SR 24 embankment on the eastern side of the Project site. There is no evidence of previous or active slides at the Project site, nor is the Project site within a mapped area of existing or potential slope instability. No impact would occur (Please also see Impact C-GEO-1, below, for a description of improvements planned to this embankment that would occur separate from the proposed Project.)
- ***Septic systems*** or ***alternative wastewater disposal systems.*** The proposed Project does not include any activities that would require the utilization of septic systems or alternative wastewater disposal systems. No impact would occur.

Approach to Analysis

The potential for significant impacts related to geology and soils from the construction and operation of the proposed Project was determined based on a review of the existing conditions

[42] The CBSC no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBSC describes the criteria for analyzing expansive soils.

informed by data compiled by USGS, CGS, ABAG, and the site-specific geotechnical investigation report (Fugro West, 2009).

The proposed Project would be regulated by the various laws, regulations, and policies summarized above in Section 4.5.2, *Regulatory Framework*. Compliance by the proposed Project with applicable federal and state laws, and University policies and regulations, is assumed in this analysis and local and state agencies would be expected to continue to enforce applicable requirements to the extent that they do so now.

After considering the implementation of the proposed Project described in Chapter 3, *Project Description*, and compliance with the required regulatory requirements, the environmental analysis below identifies if the defined significance thresholds would be exceeded and, therefore, a significant impact would occur. For those impacts considered to be significant, mitigation measures are proposed to the extent feasible to reduce the identified impacts.

In 2015, the California Supreme Court held that CEQA generally does not require a lead agency to consider the impacts of the existing environment on the future residents or users of a project [*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369.]. However, if a project exacerbates a condition in the existing environment, the lead agency is required to analyze the impact of that exacerbated condition on the environment, which may include future occupants of the project. As stated in *Ballona Wetlands Land Trust v. City of Los Angeles* [(2011) 201 Cal.App.4th 455, 473]: "[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project." While the potential for increased exposure of people or structures to risks associated with seismic occurrences and location of people or structures on unstable geologic units as a result of the location of Project activities are discussed in this section for informational purposes, the effects of the preexisting hazards on users of the proposed development under the Project are not environmental impacts under CEQA.

Impact Analysis

Impact GEO-1: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. *(Less than Significant)*

The Project would include the construction of a 332,523 gross square foot (gsf) 8-story above grade (plus basement level) new hospital building, a 96,912 gsf 5-story parking structure with a rooftop helistop, and 6,100 gsf site support building; renovation and/or structural retrofitting of existing buildings and structures within the Project site; demolition of several buildings and structures (including A/B and B/C Wings, the Bruce Lyon Memorial Research Laboratory and Addition, several trailers and the existing helistop structure); and implementation of a variety of transportation, infrastructure and landscape improvements. As discussed in Section 4.5.2, *Regulatory Framework*, the existing A/B and B/C Wing carry a SPC-1 rating and consequently, currently pose a significant risk of collapse following a strong earthquake. In compliance with the Alquist Seismic Safety Act as amended in SB 1953, and applicable seismic safety building standards, the A/B and B/C Wings would be decommissioned and demolished.

As discussed above in Section 4.5.1, *Environmental Setting*, the Bay Area region is considered seismically active and will likely experience a substantive regional earthquake within the operational life of the proposed Project. And while the proposed Project would not cause or exacerbate seismic ground shaking hazards, there is a potential for strong to very strong intensity ground shaking to occur within the Project site that would be associated with such an earthquake. The intensity of such an event would depend on the causative fault and the distance to the epicenter, the magnitude, the duration of shaking, and the nature of the geologic materials on which the project components would be constructed. Intense ground shaking and high ground accelerations would affect the entire area and the primary and secondary effects of ground shaking could damage structural foundations, distort or break infrastructure, and place people at risk of injury or death. The proposed Project would result in new building development, and an increase in population at the Project site, including daily physicians/faculty, staff, patients, and visitors, being subject to considerable seismic ground shaking from a substantive earthquake.

As discussed in Section 4.5.2, *Regulatory Framework*, above, in compliance with the CBSC, Part 2, for all structural improvements and associated improvements that would occur for the proposed Project, design level geotechnical evaluations would be required to be prepared and implemented prior to final design and construction. The final design-level geotechnical evaluation would include any necessary recommendations for site preparations (e.g., compaction requirements, engineered fill criteria, and moisture limitations) and/or foundation systems necessary to reduce seismic-related hazards to less than significant levels consistent with the applicable seismic design criteria of the CBSC. Implementing the regulatory requirements of the CBSC, and ensuring that buildings, structures, and related improvements are constructed in compliance with the law is the responsibility of the state licensed project engineers and building officials. The CBSC describes required standards for the construction, alteration, movement, replacement, location, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California. The standards include earthquake design requirements that determine the seismic design category and then describe the structural design requirements. The geotechnical engineer, as a registered professional with the State of California, is required to comply with the CBSC while applying standard engineering practice and the appropriate standard of care for anticipated seismic events. The California Professional Engineers Act (Building and Professions Code Sections 6700–6799), and the Codes of Professional Conduct, as administered by the California Board of Professional Engineers and Land Surveyors, provide the basis for regulating and enforcing engineering practice in California.

In addition, construction of the proposed Project as an acute care facility would require design, site preparation and foundation construction in accordance with the most current version of the seismic standards of SB 1953 and the HCAI requirements for new hospital facilities. Geotechnical review of the foundation design of new hospital facilities would also be required to adhere to the guidelines presented in *California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings* (CGS, 2022). With compliance with the regulatory requirements and the implementation of geotechnical design recommendations consistent with seismic design criteria, impacts related to seismic shaking associated with earthquakes that may occur at the proposed Project site would be less than significant.

Mitigation: None required.

Impact GEO-2: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic related ground failure, including liquefaction. (*Less than Significant*)

As discussed in Section 4.5.1, *Environmental Setting*, the Project site is located within a CGS Seismic Hazard Zone for liquefaction as defined by the Seismic Hazards Mapping Act, indicating a liquefaction investigation is required in this area by the State of California. Based on site specific liquefaction studies conducted on the Project site, the probability for liquefaction at the Project site is generally considered low, except in localized areas in the vicinity of culverted Temescal Creek. Two soil borings in the southern portion of the Project site revealed thin layers of clayey sand which could be susceptible to liquefaction. However, these clayey sand materials were within what are typically dense granular layers, and thus, have a low potential for liquefaction (Fugro West, 2009).

If present and not addressed adequately during site preparation for new construction, liquefiable subsurface materials can cause ground failures and differential settlement that can lead to substantive structural damage. As discussed above, the proposed Project would be required to adhere to seismic design criteria of the CBSC. In addition, structures considered essential services buildings, such as the proposed Project, are required to be designed and constructed in accordance with the most current version of the seismic standards of SB 1953 and the HCAI requirements for new hospital facilities. Geotechnical review of the foundation design of new hospital facilities would be required to adhere to the guidelines presented in *California Geological Survey – Note 48, Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings* (CGS, 2022).

Therefore, a design-level geotechnical investigation will be completed to identify both site preparation measures (e.g., use of engineered fill or treatment of liquefiable soils) and foundation design measures in a final design level geotechnical report. Implementation of the recommendations within the final design level report would ensure that any potential liquefaction as well as any associated ground failure induced by seismic activity would be minimized.

As a result, the potential impacts related to ground failure, including liquefaction, for the proposed Project would be less than significant.

Mitigation: None required.

Impact GEO-3: Construction and operation of the NHB Project would not have the potential to result in substantial erosion or the loss of topsoil. (*Less than Significant*)

Construction

The Project site is largely developed with the existing buildings, supporting structures, and paved areas. Given that the Project site was previously developed, and the majority of native topsoil is no longer present, proposed excavation at the Project site would not result in substantial loss or erosion of topsoil. However, the proposed Project would also involve a large volume of excavation. Erosion of exposed underlying soils can occur as a result of the forces of wind or water and could be worsened during these ground disturbing activities.

Because the overall footprint of construction activities would exceed one acre, the proposed Project would be required to comply with the *NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities* (Order 2022-0057-DWQ, NPDES No. CAS000002) (Construction General Permit) (discussed further in Section 4.8, *Hydrology and Water Quality*). This State requirement was developed to ensure that stormwater is managed, and erosion is controlled on construction sites. The Construction General Permit requires preparation and implementation of a Stormwater Pollution and Prevention Plan (SWPPP), which requires applications of Best Management Practices (BMPs) that would be effective in reducing the potential for erosion during construction. The BMPs would include, but would not be limited to, physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods during storm events, use of infiltration swales, protection of stockpiled materials, and a variety of other measures that would substantially reduce or prevent erosion from occurring during construction. With compliance with existing NPDES regulations, impacts associated with soil erosion at the Project site during construction would be less than significant.

Operations

Once the proposed Project is constructed, the area of disturbance would be covered by the new hospital building, parking structure, entry roads, pedestrian walkways and other hardscaping, and landscaping, such that the potential for erosion would be minimized. As discussed above in Section 4.5.2, *Regulatory Framework*, the CBSC Part 2, would require that the structural elements of the proposed Project undergo appropriate design-level geotechnical evaluations prior to final design and construction. In compliance with the regional Municipal Regional Stormwater NPDES Permit (MRP), UCSF BCH Oakland will prepare a Stormwater Management plan for the Project site and implement it. The plan will include measures to increase infiltration and treat storm water prior to discharge into the storm drain system. Additional details are provided in Section 4.8*, Hydrology and Water Quality*. With compliance with existing regulations (i.e., the MRP) and operation of the proposed stormwater system, impacts associated with soil erosion during Project operation would be less than significant.

Mitigation: None required.

Impact GEO-4: The NHB Project would not 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. (*Less than Significant*)

As discussed above, the proposed Project would be developed primarily within an already developed area of the Project site. Existing structures on the Project site range in age and were constructed under different stages of building code requirements and undocumented site preparation measures. Underlying subsurface materials include artificial fill or conditions that are otherwise unsuitable for the proposed Project without adequate site preparations. While, as discussed above, there would be substantive amounts of excavation for the Proposed project that could remove any existing near surface fills or other unsuitable soils, there could be areas with soils that are considered incapable of adequately supporting the new loadings (weight of new structures, foundations and/or engineered fill).

Ground disturbance during construction would include excavation of foundation systems of demolished buildings, regrading of portions of the Project site, installation of the new hospital building basement level and foundation and accommodating new subsurface utilities. Maximum excavation on the Project site for the proposed new hospital building would be up to approximately 28 feet in depth, and for the parking structure would be up to 8 feet in depth. If not managed appropriately, excavation could create unstable sidewalls and/or cause surrounding soils to become unstable that could potentially damage improvements or threaten the stability of neighboring structures. However, prior to final design and commencement of excavation and grading activities, an appropriate site-specific design-level geotechnical evaluation would be prepared, which would provide recommendations to minimize effects from unstable slopes during construction. This may include installation of a shoring system to resist loads from foundations of neighboring structures, and use of dewatering during construction. These would be effective in minimizing the potential for on-site landslides or collapse of excavation sidewalls. Therefore, with conformance to the CBSC and a required design-level geotechnical report that includes recommendations for excavation stability, the potential impact related to landslides and sidewall stability would be less than significant.

Lateral spreading is a phenomenon related to liquefaction where liquefiable materials can be displaced on exposed slopes. Large scale lateral spreading is unlikely because the majority of the Project site where development is proposed is largely level. Furthermore, as addressed in Impact GEO-2, above, the probability for liquefaction at the Project site is generally considered low. Adherence to CBSC requirements and implementation of the design-level geotechnical report to address lateral spreading and liquefaction hazards, if present, would ensure that the potential impact would be less than significant (see also Impact GEO-2, above, for additional detail on liquefaction).

As discussed in Section 4.5.1, *Environmental Setting*, the conditions needed for land subsidence (e.g., aquifer system compaction, drainage of organic soils, underground mining, etc.) are not known to exist within the Project area (Fugro West, 2009). Nevertheless, subsidence and collapse are additional geotechnical hazards that would be evaluated as part of design-level geotechnical investigations as required by the CBSC. The final design-level geotechnical report would use collected subsurface data to determine site preparation measures in accordance with CBSC.

Implementation of these design-level criteria to geotechnical site preparation and foundation design would ensure that any potential impact from subsidence or collapse would be less than significant.

Therefore, as required by the CBSC, the preparation of site-specific design-level geotechnical investigation would include recommendations for site preparation and foundation design that would ensure that impacts from any unstable soils would be minimized, and the potential impacts would be less than significant.

Mitigation: None required.

Impact GEO-5: The NHB Project would be located on expansive soils, but would not cause substantial direct or indirect risks to life or property. (*Less than Significant*)

As discussed in Section 4.5.1, *Environmental Setting*, there is moderate to high expansion potential for clayey surface soils at the Project site. These materials could be subjected to volume changes during seasonal fluctuations in moisture content, which, if not addressed, could cause vertical movement of exterior slabs, sidewalks and pavement that would require periodic maintenance or replacements.

Expansive soils are commonly addressed in required geotechnical evaluations of onsite geotechnical hazards, and past geotechnical investigations at the campus site have not revealed the presence of expansive soils. Furthermore, the University requires all new facilities to adhere to the current CBSC, which includes detailed provisions to ensure that the design of new facilities is appropriate to site soil conditions, including requirements to address expansive and otherwise problematic soils. With adherence to the CBSC, impacts related to site soil conditions – including but not limited to expansive soils, if any are present at the Project site– would be less than significant.

Mitigation: None required.

Impact GEO-6: The NHB Project could directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (*Less than Significant with Mitigation*)

The proposed Project would have a significant effect on the environment if it directly or indirectly destroys a unique paleontological resource or site or unique geologic feature. Following the guidelines of the Society of Vertebrate Paleontology (SVP), a review of the scientific literature and geologic mapping were used to determine paleontological sensitivities of the geologic units present on the Project site that would be subject to ground-disturbing activities (SVP, 1995; SVP, 2010). As discussed above in Section 3.5.1, *Environmental Setting*, there are no recorded paleontological resources (fossils) within the Project site nor does the Project site area contain a unique geological feature. The shallow soils at the Project site are underlain by Holocene-age landforms, which are largely too recent to contain significant fossils. However, underlying these Holocene deposits are older Pleistocene deposits that have a potential to contain significant fossils, including bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians. The Project would include excavation to a maximum of up to 28 feet below grade for the new hospital building, which would be deep enough to encounter the older deposits that may contain paleontological resources. Should paleontological resources be encountered during ground-disturbing activities, this would be a potentially significant impact. To reduce impacts on paleontological resources, implementation of **Mitigation Measure GEO-6** would be required.

> **Mitigation Measure GEO-6:** Prior to commencement of construction activities, all on-site personnel shall attend a mandatory pre-project training to outline the general paleontological sensitivity of the project area. The training will include a description of the types of resources that could be encountered and the procedures to follow in the event of an inadvertent discovery of resources.
>
> If paleontological resources, such as fossilized bone, teeth, shell, tracks, trails, casts, molds, or impressions are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards can assess the nature and importance of the find and, if necessary, develop appropriate salvage measures in conformance with SVP standards (2010). If the discovery can be avoided and no further impacts will occur, no further effort shall be required. If the resource cannot be avoided and may be subject to further impact, a qualified paleontologist shall evaluate the resource and determine whether it is "unique" under CEQA.
>
> Any discovered paleontological resources that are determined by the qualified paleontologist to be "unique" in accordance with CEQA shall be subjected to appropriate salvage measures in conformance with SVP standards (2010).
>
> **Significance after Mitigation:** Implementation of Mitigation Measure GEO-6 would ensure that paleontological resources would be identified before they are damaged or destroyed and are properly evaluated and treated. Because development of the proposed Project with implementation of Mitigation Measure GEO-6 would not adversely affect paleontological resources, this impact would be less than significant with mitigation incorporated.

Cumulative Impacts

Impact C-GEO-1: Implementation of the NHB Project, in combination with past, present and reasonably foreseeable future projects, would not result in significant cumulative impacts related to geology and soils. (*Less than Significant*)

This section presents an analysis of the cumulative effects of the Project in combination with other past, present, and reasonably foreseeable future projects that could cause significant cumulative impacts. Significant cumulative impacts related to geology, soils, and paleontological resources could occur if the incremental impacts of the Project combined with the incremental impacts of one or more cumulative projects.

The geographic area affected by the Project and its potential to contribute to cumulative impacts varies based on the environmental resource under consideration. The geographic scope of analysis for cumulative geology and soils impacts encompasses and is limited to the Project site and its immediately adjacent area. This is because impacts relative to geology and soils are generally site-specific and depend on the nature and extent of the geologic hazard, and existing and future soil and groundwater conditions. For example, the effect of erosion would tend to be limited to the localized area of a project and could only be cumulative if erosion occurred as the result of two or more adjacent projects that spatially overlapped.

The timeframe during which the Project could contribute to cumulative geology and soils effects includes the construction and operations phases. Similar to the geographic limitations discussed above, it should be noted that impacts relative to geology and soils are generally time-specific. Geology and soils effects could only be cumulative if two or more geologic hazards occurred at the same time, as well as overlapped at the same location.

A discussion of potential cumulative projects that would occur on or adjacent to the Project site is provided in Section 4.0.4. UCSF-proposed cumulative projects would include the BCH Oakland Infrastructure project, replacement of the existing fuel oil underground storage tank (UST) with an above ground fuel oil tank, and construction of the Administrative Support Building and related improvements. These cumulative projects would be implemented separately from NHB Project construction. Each of these cumulative projects would involve some level of excavation, re-grading, and new construction at their respective sites and would be required to implement measures to avoid and minimize geology and soils impacts. In addition, the City of Oakland will be making a number of planned improvements to MLK Jr. Way adjacent to the Project site as part of the MLK Jr. Way Roadway Improvement Plan, although these would be expected to be largely surface-level improvements.

As previously discussed, the Bay Area is considered to have a high probability of a substantive earthquake occurring over the next 30 years. Development of the Project along with the other past, present, and reasonably foreseeable cumulative projects would not directly or indirectly exacerbate those seismic risks. However, current and future project development at the Project site and elsewhere in the entire Bay Area region could expose additional people and structures to potentially adverse effects associated with earthquakes, including seismic ground shaking, seismic related ground failure, and seismically induced landslides. However, site-specific geotechnical investigations required by the local agencies that typically adopt CBSC seismic requirements would determine how future development projects could be designed to minimize exposure of people to these impacts. Therefore, the proposed Project, other current projects, and future development would be constructed to current standards that would provide greater protection than the older structures throughout the region. Other current and future projects within the Bay Area region would also be required to adhere to current building standards with seismic design criteria that incorporates the most current science and understanding of geotechnical and seismic hazards such that damage or injury would be minimized. Therefore, based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to seismic-induced ground shaking or ground failures, and the proposed Project's contribution to cumulative effects would not be cumulatively considerable.

Ground disturbing activities could expose soils in a manner that lead to increased erosion if not managed properly. Such erosion could cause unstable ground surfaces and result in eventual damage to roads, foundations and other improvements. Construction activities at the Project site, as well as other current and future cumulative projects greater than 1 acre in size, which would apply to the vast majority of the cumulative projects, would be required to comply with the NPDES Construction General Permit, which contains erosion control requirements that would minimize the potential for soil erosion. The NPDES program requires the preparation and implementation of SWPPPs for construction activities that include BMPs that ensure erosion control measures are included during construction. Similar to the Project, the design of cumulative projects would be required to comply with the regional MRP, which also requires the capture and control of stormwater runoff during operations. All cumulative projects, including the proposed Project, would be required to comply with these regulations, as would other nearby reasonably foreseeable development and other construction projects. Therefore, based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to erosion, and the project's contribution to cumulative effects would not be cumulatively considerable.

Similar to the proposed Project, cumulative projects that include excavation into older geologic units would also have the potential to encounter paleontological resources. As discussed above in Impact GEO-6, the construction of the proposed project has the potential to encounter paleontological resources. The implementation of Mitigation Measure GEO-6 would reduce the impact to less than significant with mitigation incorporated. In compliance with regulations to protect paleontological resources, cumulative projects that include excavation into older geologic units would also be required to implement mitigation to reduce impacts to paleontological resources to less than significant. Therefore, based on compliance with these requirements, the incremental impacts of the Project combined with impacts of other projects in the area would not cause a significant cumulative impact related to paleontological resources, and the Project's contribution to cumulative effects would not be cumulatively considerable.

Significance after Mitigation: None required.

4.5.4 References

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4.6 Greenhouse Gas Emissions

This section describes and evaluates potential for the construction and operation of the NHB Project at the UCSF Benioff Children's Hospital (BCH) Oakland campus site to result in significant impacts related to greenhouse gas (GHG) emissions and global climate change. The section includes a description of the existing regional and local conditions, and the regulatory framework governing GHG emissions; presents the significance criteria used to evaluate the significance of the impact of the Project's GHG emissions, and the results of the impact assessment, including any significant impacts and associated feasible mitigation measures. The proposed Project is also evaluated for consistency with plans and policies of the State of California, the University of California, and *Plan Bay Area* related to GHG emissions and climate change.

4.6.1 Environmental Setting

Climate Science

"Global warming" and "climate change" are common terms used to describe the increase in the average temperature of the earth's near-surface air and oceans since the mid-20th century and related changes in global climate. Natural processes and human actions have been identified as affecting the climate. The Intergovernmental Panel on Climate Change (IPCC) has concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950. However, increasing GHG concentrations resulting from human activity since the 19th century, such as fossil fuel combustion, deforestation, and other activities, are believed to be a major factor in causing global climate change. GHGs in the atmosphere naturally trap heat by impeding the exit of solar radiation that is received by the Earth and is reflected back into space—a phenomenon referred to as the "greenhouse effect." Some GHGs occur naturally and are necessary for keeping the Earth's atmosphere warm and its surface inhabitable. However, increases in the concentrations of these gases in the atmosphere during the last 100 years cause solar radiation to be trapped and decrease the amount of radiation that is reflected into space, intensifying the natural greenhouse effect, and resulting in the increase of global average temperature.

Carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, methane, and nitrous oxide occur naturally and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas methane results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. Nitrous oxide emissions are also largely attributable to agricultural practices and soil management. Other human-generated GHGs such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, methane and nitrous oxide are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2 respectively, which has a GWP of 1 (California Air Resources Board [CARB], 2023a).

In emissions inventories, GHG emissions are typically reported as metric tons (MT)[43] of CO_2 equivalent (CO_2e). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While methane and nitrous oxide have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from land development and human activity in general.

Effects of Global Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of and inability to accurately model Earth's climate system, the uncertainty surrounding climate change may never be eliminated completely. Nonetheless, the IPCC's Fifth Assessment Report (AR5) states that is highly likely that the dominant cause of the observed warming since the mid-20th century is the anthropogenic increase in GHG concentrations (IPCC, 2014). The National Academies of Science from 80 countries have issued statements endorsing the consensus position that humans are the dominant cause for global warming since the mid-20th century (Cook et al., 2016).

The Fourth California Climate Change Assessment (Fourth Assessment), published in 2018, found that the potential impacts in California due to global climate change include: loss in snow pack; sea-level rise; more extreme heat days per year; more high ozone days per year; more extreme forest fires; more severe droughts punctuated by extreme precipitation events; increased erosion of California's coastlines and sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (Office of Planning & Research [OPR], California Energy Commission [CEC], California Natural Resources Agency [CNRA], 2019). The Fourth Assessment's findings are consistent with climate change studies published by the CNRA since 2009, starting with the *California Climate Adaptation Strategy* (CNRA, 2009) as a response to the Governor's Executive Order S-13-2008. In 2014, the CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan* (CNRA, 2014). In 2016, the CNRA released *Safeguarding California: Implementation Action Plans* in accordance with Executive Order B-30-15, identifying a lead agency to lead adaptation efforts in each sector (CNRA, 2016). The 2018 update to *Safeguarding California Plan* identifies hundreds of ongoing actions and next steps state agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations (CNRA, 2018).

43 The term metric ton is commonly used in the U.S. to refer to the metric system unit, tonne, which is defined as a mass equal to 1,000 kilograms. A metric ton is approximately 1.1 short tons and approximately 2,204.6 pounds.

In accordance with the 2009 *California Climate Adaptation Strategy*, the CEC was directed to develop a website on climate change scenarios and impacts that would be beneficial for local decision makers. The website, known as Cal-Adapt, became operational in 2011. The information provided on the Cal-Adapt website represents a projection of potential future climate scenarios comprised of local average values for temperature, sea-level rise, snowpack and other data representative of a variety of models and scenarios, including potential social and economic factors. Below is a summary of some of the potential effects that could be experienced in California as a result of global warming and climate change.

Temperature Increase

The primary effect of adding GHGs to the atmosphere has been a rise in the average global temperature. The impact of human activities on global temperature is readily apparent in the observational record. Since 1895, the contiguous U.S. has observed an average temperature increase of 1.5°F per century (National Oceanic and Atmospheric Association [NOAA], 2019). The 5-year period from 2014–2018 was the warmest on record for the contiguous U.S.; of the top 10 hottest years on record in the U.S., seven have occurred since the year 2000, with the top six years all occurring since 2012 (Climate Central, 2022). The Fourth Assessment indicates that average temperatures in California could rise 5.6°F to 8.8°F by the end of the century, depending on the global trajectory of GHG emissions (OPR, CEC, CNRA, 2019).

With climate change, extreme heat conditions and heat waves are predicted to impact larger areas, last longer, and involve higher temperatures. Heat waves, defined as three or more days with temperatures above 90°F, are projected to occur more frequently by the end of the century. Extreme heat days and heat waves can negatively impact human health. Heat-related illness includes a spectrum of illnesses ranging from heat cramps to severe heat exhaustion and life-threatening heat stroke (Red Cross Red Crescent Climate Centre [RCCC], 2019).

Wildfires

The hotter and drier conditions expected with climate change will make forests more susceptible to extreme wildfires. A recent study found that, if GHG emissions continue to rise, the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and the average area burned statewide each year would increase by 77 percent, by the year 2100. In the areas that have the highest fire risk, the cost of wildfire insurance is anticipated to rise by 18 percent by 2055 and the fraction of property insured would decrease (Westerling, 2018).

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California and make it more difficult for the state to achieve air quality standards. Climate change may increase the concentrations of ground-level ozone, which can cause breathing problems, aggravate lung diseases such as asthma, emphysema, chronic bronchitis, and cause chronic obstructive pulmonary disease (COPD) but the magnitude of the effect, and therefore, its indirect effects, are uncertain. Emissions from wildfires can lead to excessive levels of particulate matter, ozone, and volatile organic compounds (NOAA, n.d.). Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state (RCCC, 2019).

Precipitation and Water Supply

There is a high degree of uncertainty with respect to the overall impact of global climate change on future water supplies in California. Studies indicate considerable variability in predicting precise impacts of climate change on California hydrology and water resources. Increasing uncertainty in the timing and intensity of precipitation will challenge the operational flexibility of California's water management systems. Warmer and wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff could occur at a time when some basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (CNRA, 2018).

Climate change could alter water quality in a variety of ways, including through higher winter flows that reduce pollutant concentrations (through dilution) or increase erosion of land surfaces and stream channels, leading to higher sediment, chemical, and nutrient loads in rivers. Water temperature increases and decreased water flows can result in increasing concentrations of pollutants and salinity. Increases in water temperature alone can lead to adverse changes in water quality, even in the absence of changes in precipitation.

Hydrology and Sea Level Rise

As discussed above, climate changes could potentially affect: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea-level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea-level rise can be a product of global warming through two main processes: expansion of seawater as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could jeopardize California's water supply. Sea level has risen eight to nine inches (21–24 centimeters) since 1880. In 2021, global sea level set a new record high of 97 mm (3.8 inches) above 1993 levels. The rate of sea level rise is accelerating; it has more than doubled from 0.06 inches (1.4 millimeters) per year throughout most of the twentieth century to 0.14 inches (3.6 millimeters) per year from 2006–2015. In many locations along the U.S. coastline, high-tide flooding is now 300 percent to more than 900 percent more frequent than it was 50 years ago. Models project that average sea level rise for the contiguous U.S. could be 2.2 meters (7.2 feet) by 2100 and 3.9 meters (13 feet) by 2150 (NOAA, 2022). Rising seas could impact transportation infrastructure, utilities, and regional industries.

Agriculture

California has a massive agricultural industry that represents over 13 percent of total US agricultural revenue (California Department of Food and Agriculture [CDFA], n.d.). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, a changing climate presents significant risks to agriculture due to changes in maximum and minimum temperatures, reduction of winter chill hours, extreme heat leading to additional costs for livestock cooling and losses in production, and declines in water quality, groundwater security, soil health, and pollinator species, and increased pest pressures (CNRA, 2018).

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. As stated in the *Safeguarding California Plan*, "species and ecosystems in California are valued both for their intrinsic worth and for the services they provide to society. Air purification, water filtration, flood attenuation, food provision, recreational opportunities such as fishing, hunting, wildlife viewing, and more are all services provided by ecosystems. These services can only be maintained if ecosystems are healthy and robust and continue to function properly under the impacts of climate change. A recent study examined the vulnerability of all vegetation communities statewide in California and found that 16 of 29 were highly or nearly highly vulnerable to climate change, including Western North American freshwater marsh, Rocky Mountain subalpine and high montane conifer forest, North American Pacific coastal salt marsh, and more." Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. With climate change, ecosystems and wildlife will be challenged by the spread of invasive species, barriers to species migration or movement in response to changing climatic conditions, direct impacts to species health, and mismatches in timing between seasonal life-cycle events such as species migration and food availability (CNRA, 2018).

Public Health

Global climate change is also anticipated to result in more extreme heat events. These extreme heat events increase the risk of death from dehydration, heart attack, stroke, and respiratory distress, especially with people who are ill, children, the elderly, and the poor, who may lack access to air conditioning and medical assistance. A warming planet is expected to bring more severe weather events, worsening wildfires and droughts, a decline in air quality, rising sea levels, increases in allergens and in vector-borne diseases, all of which present significant health and wellbeing risks for California populations (CNRA, 2018).

While the possible outcomes and the feedback mechanisms involved are not fully understood and much research remains to be done, the potential for substantial environmental, social, and economic consequences over the long term may be great. All of these impacts will have either direct or indirect negative effects for residents and businesses in the City.

Emissions Inventories

United States GHG Emissions

In 2021, the United States emitted about 6,340 MMTCO_2e, or 5,586 MMTCO_2e after accounting for sequestration from the land use sector. Emissions increased by 6 percent from 2020 to 2021 (after accounting for sequestration from the land use sector). The increase was driven largely by an increase in CO_2 emissions from fossil fuel combustion, which increased by 7 percent relative to 2020. This increase in fossil fuel consumption emissions was due primarily to economic activity rebounding after the height of the COVID-19 pandemic. GHG emissions in 2021 (after accounting for sequestration from the land use sector) were 17 percent below 2005 levels. Of the major sectors nationwide, transportation accounts for the highest volume of GHG emissions (approximately 28 percent), followed by electricity (25 percent), industry (23 percent), commercial and residential (13 percent), and agriculture (11 percent) (United States Environmental Protection Agency [USEPA], n.d.).

California GHG Emissions

CARB compiles GHG inventories for the State. Based on the 2020 GHG inventory data (the latest year for which data is available from CARB), emissions from GHG emitting activities statewide were 369.2 $MMTCO_2e$ (CARB, 2022a). Between 1990 and 2021, the population of California grew by approximately 10 million from 29.6 to 39.5 million (California Department of Finance [CDF], 2022). This represents an increase of approximately 34 percent from 1990 population levels. In addition, the California economy, measured as gross state product, grew from $773 billion in 1990 to $3.14 trillion in 2019, representing an increase of approximately 306 percent (more than three times the 1990 gross state product) in today's dollars (CDF, 2023).

Despite the population and economic growth, CARB's 2020 statewide inventory indicated that California's net GHG emissions in 2020 were 35.3 $MMTCO_2e$ lower than 2019 levels and 61.8 $MMTCO_2e$ below the 2020 GHG Limit of 431 $MMTCO_2e$ codified in California Health and Safety Code Division 25.5, also known as the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). **Table 4.6-1** identifies and quantifies statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2020. As shown in the table, the transportation sector is the largest contributor to statewide GHG emissions at approximately 38 percent in 2020.

TABLE 4.6-1
CALIFORNIA GHG EMISSIONS INVENTORY

Category	Total 1990 Emissions Using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2020 Emissions Using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2020 Emissions
Transportation	150.7	35%	135.8	37%
Electric Power	110.6	26%	59.5	16%
Commercial & Residential Fuel Use	44.1	10%	38.7	11%
Industrial	103.0	24%	73.3	20%
Recycling and Waste[a]	—	—	8.9	2%
High GWP/Non-Specified[b]	1.3	<1%	21.3	6%
Agriculture/Forestry	23.6	6%	31.6	9%
Forestry Sinks	-6.7	-2%	—[c]	—
Net Total (IPCC SAR)	**426.6**	**100%[e]**	**—**	**—**
Net Total (IPCC AR4)[d]	**431**	**100%[e]**	**369.2**	**100%[e]**

NOTES:

AR4 = Fourth Assessment Report; GWP = global warming potential; IPCC = Intergovernmental Panel on Climate Change; $MMTCO_2e$ = million metric tons of carbon dioxide equivalents; SAR = Second Assessment Report

a. Included in other categories for the 1990 emissions inventory.
b. High GWP gases are not specifically called out in the 1990 emissions inventory.
c. Revised methods under development (not reported for 2020).
d. CARB revised the state's 1990-level GHG emissions using GWPs from the IPCC AR4.
e. Total of individual percentages may not add up to 100% due to rounding

SOURCES: CARB, 2007; CARB, 2022a.

City of Oakland GHG Emissions

There are two methods of analyzing GHG emissions across a jurisdiction. The first method, called the local emissions approach, looks at emissions produced within city limits from activities such as using natural gas in homes or from driving a car in Oakland. The local emissions approach is the standard used by cities across the United States, which makes drawing comparisons between one city to another easier.

The City of Oakland published their 2019 Greenhouse Gas Emissions Inventory Infographic (2019 Inventory) in 2022. The 2019 Inventory presents local emissions within the City of Oakland limits. According to the 2019 Inventory, in 2019, local emissions generated within the City's limits equaled 2,627,604 MT CO_2e. In Oakland, the largest source of local GHG emissions was the transportation sector (approximately 64 percent), followed by the buildings and energy sector (approximately 26.8 percent). In addition, the material consumption and waste sector generated 5.3 percent, the Port of Oakland generated 2.8 percent, and local government operations generated the final 1 percent of the City's emissions (City of Oakland, 2022).

The second method, referred to as the lifecycle emissions approach, employs a perspective that includes GHGs emitted globally during the material extraction, manufacturing, and shipping needed to satisfy local demand for goods and services. The lifecycle emissions approach provides a more thorough portrayal of the emissions for which the Oakland community is responsible and holds the potential to induce deeper emissions reductions globally. Measurement of lifecycle emissions is a relatively new method and will continue to evolve as better data becomes available and more local governments refine and improve the approach. The City of Oakland published their 2017 Greenhouse Gas Emissions Inventory Report (Inventory Report) in June 2020. The 2017 Inventory Report includes a presentation of the City's lifecycle emissions, which accounts for GHGs emitted around the world due to the purchasing decisions of Oakland residents. According to the Inventory Report, in 2017, lifecycle emissions equaled 7,418,907 MT CO_2e. The largest source of lifecycle GHG emissions was the material consumption and waste sector (approximately 38.4 percent), followed by the transportation and mobile sources sector (approximately 31.8 percent). The buildings and energy use sector, Port of Oakland, and local government operations represented approximately 19.8 percent, 9.2 percent, and 0.8 percent of the City's lifecycle emissions, respectively (City of Oakland, 2020a).

4.6.2 Regulatory Framework

Federal

U.S. Environmental Protection Agency "Endangerment" and "Cause or Contribute" Findings

In 2009, the U.S. Supreme Court held that the USEPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency* et al., twelve states and cities, including California, together with several environmental organizations sued to require the USEPA to regulate GHGs as pollutants under the Clean Air Act (CAA) (127 S. Ct. 1438 (2007)). The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and the USEPA had the authority to regulate GHGs.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA:

- **Endangerment Finding:** The current and projected concentrations of the six key GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings did not, by themselves, impose any requirements on industry or other entities. However, these actions were a prerequisite for implementing GHG emissions standards for vehicles.

Vehicle Emissions Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the act, the USEPA and National Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. By 2025, vehicles are required to achieve both 54.5 miles per gallon (mpg) (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions from a model year 2010 vehicle (USEPA & NHTSA, 2010). Notably, the State of California harmonized its vehicle efficiency standards through 2025 with the federal standards (see Advanced Clean Car program below).

In January 2017, the USEPA issued its Mid-Term Evaluation of the GHG emissions standards, finding that it would be practical and feasible for automakers to meet the model year 2022-2025 standards through a number of existing technologies. In August 2018, the USEPA and the NHTSA proposed maintaining the 2020 corporate average fuel economy (CAFE) and CO_2 standards for model years 2021 through 2026. The estimated CAFE and CO_2 standards for model year 2020 are 43.7 miles per gallon (mpg) and 204 grams of CO_2 per mile for passenger cars and 31.3 mpg and 284 grams of CO_2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. In September 2019, the USEPA finalized the Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program and announced its decision to withdraw the Clean Air Act preemption waiver granted to the State of California in 2013 (USEPA & NHTSA, 2019). In March 2022, the USEPA reinstated California’s waiver restoring the State’s authority to set and enforce more stringent standards than the federal government, including California’s GHG emission standards and zero emission vehicle mandate (USEPA, 2022).

State

California has promulgated a series of executive orders, laws, and regulations aimed at reducing both the level of GHGs in the atmosphere and emissions of GHGs within the State. The major components of California’s climate protection initiative are reviewed below. CARB is the agency with regulatory authority over air quality issues in California. CARB adopts regulations designed to reduce criteria pollutants, toxic air contaminants, and GHG emissions; and establishes vehicle emission standards. As discussed earlier, CARB is responsible for preparing, adopting, and updating California's GHG inventory. Additional responsibilities of CARB with respect to specific State mandates are discussed below.

CEQA Guidelines

The *CEQA Guidelines* are embodied in the California Code of Regulations (CCR), Title 14, beginning with Section 15000. The current *CEQA Guidelines* Section 15064.4 states that "a lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project." Section 15064.4 further states:

> *A lead agency should consider the following factors, when determining the significance of impacts from greenhouse gas emissions on the environment:*
>
> *(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.*
>
> *(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
>
> *(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see e.g., section 15183.5(b)).*

The *CEQA Guidelines* also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of GHG emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (*CEQA Guidelines* Section 15064(h)(3)).

The *CEQA Guidelines* do not require or recommend a specific analytical method or provide quantitative criteria for determining the significance of GHG emissions, nor do they set a numerical threshold of significance for GHG emissions. Section 15064.7(c) clarifies that "when adopting or using 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."

When GHG emissions are found to be significant, *CEQA Guidelines* Section 15126.4(c) includes the following direction on measures to mitigate the impact of the GHG emissions:

> *Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of greenhouse gas emissions may include, among others:*

(1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision.

(2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures.

(3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions.

(4) Measures that sequester greenhouse gases.

(5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions, mitigation may include the identification of specific measures that may be implemented on a project-by project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

State of California Executive Orders

Executive Order S-1-07 and Update to the Low Carbon Fuel Standard

Executive Order (EO) S-1-07, signed by Governor Schwarzenegger in 2007, established a low carbon fuel standard (LCFS) with a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. In September 2018, CARB extended the LCFS program to 2030, making significant changes to the design and implementation of the program, including a doubling of the carbon intensity reduction to 20 percent by 2030.

Executive Order B-16-12

In March 2012, Governor Brown issued an executive order establishing a goal of 1.5 million zero-emission vehicles (ZEVs) on California roads by 2025. In addition to the ZEV goal, EO B-16-12 stipulated that by 2015 all major cities in California would have adequate infrastructure and be "zero-emission vehicle ready"; that by 2020 the State would have established adequate infrastructure to support one million ZEVs; that by 2050, virtually all personal transportation in the State will be based on ZEVs; and that GHG emissions from the transportation sector will be reduced by 80 percent below 1990 levels.

Executive Order B-30-15

Governor Brown signed EO B-30-15 on April 29, 2015, which:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030;
- Ordered all State agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets; and
- Directed CARB to update the Climate Change Scoping Plan (Scoping Plan) to express the 2030 target in terms of $MMTCO_2e$.

Executive Order B-48-18

On January 26, 2018, Governor Brown issued an executive order establishing a goal of 5 million ZEVs on California roads by 2030.

Executive Order B-55-18

On September 10, 2018, Governor Brown signed EO B-55-18, committing California to total, economy-wide carbon neutrality by 2045. EO B-55-18 directs CARB to work with relevant State agencies to develop a framework to implement an accounting process to track progress toward this goal. AB 1395 would codify this carbon neutral target.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed EO N-79-20, which sets new statewide goals for phasing out gasoline-powered cars and trucks in California. EO N-79-20 requires that 100 percent of in-state sales of new passenger cars and trucks are to be zero-emission by 2035; 100 percent of in-state sales of medium- and heavy-duty trucks and busses are to be zero-emission by 2045 where feasible; and 100 percent of off-road vehicles and equipment sales are to be zero-emission by 2035 where feasible.

State of California Policy and Legislation

Assembly Bill 117 and Senate Bill 790

In 2002, the State of California passed AB 117, enabling public agencies and joint power authorities to form a Community Choice Aggregation (CCA). SB 790 strengthened it by creating a “code of conduct” that the incumbent utilities must adhere to in their activities relative to CCAs. CCAs allow a city, county, or group of cities and counties to pool electricity demand and purchase/generate power on behalf of customers within their jurisdictions in order to provide local choice. CCAs work with PG&E to deliver power to its service area. The CCA is responsible for the electric generation (procure or develop power) while PG&E is responsible for electric delivery, power line maintenance, and monthly billing.

Senate Bills 1078 and 107

SB 1078 (Chapter 516, Statutes of 2002) required retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

Assembly Bill 32 and Senate Bill 32

The California Global Warming Solutions Act of 2006 (AB 32) required that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction was to be accomplished by enforcing a statewide cap on GHG emissions that would be phased in starting in 2012. This act defines GHGs as CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. The California Global Warming Solutions Act assigned CARB the primary responsibility for reducing GHG emissions, by adopting rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

As required by the California Global Warming Solutions Act, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020, originally set at 427 $MMTCO_2e$, using the GWP values from the IPCC Second Assessment Report. CARB established the GHG emissions reduction target based on GWP values from the IPCC Fourth Assessment Report (AR4) and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit is 431 $MMTCO_2e$.

In 2016, SB 32 and its companion bill AB 197 amended Health and Safety Code Division 25.5, establishing a new climate pollution reduction target of 40 percent below 1990 levels by 2030, and included provisions to ensure that the benefits of State climate policies reach Environmental Justice (EJ) Communities.[44]

Assembly Bill 1279 (California Climate Crisis Act)

In August 2022, the California Legislature passed a package of significant climate legislation that includes a codification of the State's goal to reach net-zero by 2045. With the passage of AB 1279, California has locked in a pathway for it to reach net-zero by no later than 2045. This enables the legislature, communities and businesses to start long-term planning, with certainty, for a safer future today. Critically, this goal requires California to cut GHG emissions by 85 percent compared to 1990 levels, ensuring the State uses all available solutions to sharply cut pollution from industrial facilities, vehicles, power plants and more. The Governor signed AB 1279 into law on September 16, 2022.

Climate Change Scoping Plan

A specific requirement of AB 32 was for CARB to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020. CARB developed and approved the initial scoping plan in 2008, outlining the regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs that would be needed to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives (CARB, 2008).

CARB approved the *First Update to the Climate Change Scoping Plan* (2014 Scoping Plan) in May 2014 and built upon the 2008 Scoping Plan with new strategies and recommendations (CARB, 2014). Then, in response to the 2030 GHG reduction target, CARB adopted California's 2017 Climate Change Scoping Plan which outlines the proposed framework of actions for achieving the 2030 GHG target of 40 percent reduction in GHG emissions relative to 1990 levels (CARB, 2017). The 2017 Scoping Plan recommends statewide targets of no more than 6 $MTCO_2e$ per capita by 2030 and no more than 2 $MTCO_2e$ per capita by 2050.

44 A neighborhood or community, composed predominantly of persons of color or a substantial proportion of persons below the poverty line, that is subjected to a disproportionate burden of environmental hazards and/or experiences a significantly reduced quality of life relative to surrounding or comparative communities.

To demonstrate how a local jurisdiction can achieve its long-term GHG goals at the community plan level, CARB recommends developing a geographically specific GHG reduction plan (i.e., climate action plan) consistent with the requirements of CEQA Section 15183.5(b). A so-called "CEQA-qualified" GHG reduction plan, once adopted, can provide local governments with a streamlining tool for project-level environmental review of GHG emissions, provided there are adequate performance metrics for determining project consistency with the plan. Absent conformity with such a plan, CARB recommends "that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions."

In May 2022, CARB adopted the 2022 update to the Scoping Plan which assesses progress toward the statutory 2030 GHG reduction target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB, 2022b).

The 2022 Scoping Plan expands on prior Scoping Plans and responds to more recent legislation by outlining a technologically feasible, cost-effective, and equity-focused path to achieve the State's climate target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045 and achieving carbon neutrality[45] by 2045 or earlier.

The major element of the 2022 Scoping Plan is the decarbonization of every sector of the economy. This requires rapidly moving to zero-emission transportation for cars, buses, trains, and trucks; phasing out the use of fossil gas for heating; clamping down on chemicals and refrigerants; providing communities with sustainable options such as walking, biking, and public transit to reduce reliance on cars; continuing to build out solar arrays, wind turbine capacity, and other resources to provide clean, renewable energy to displace fossil-fuel fired electrical generation; scaling up new options such as renewable hydrogen for hard-to-electrify end uses and biomethane where needed. "Successfully achieving the outcomes called for in the Scoping Plan would reduce demand for liquid petroleum by 94 percent and total fossil fuel by 86 percent by 2045 relative to 2022" (CARB, 2022b).

The 2022 Scoping Plan approaches decarbonization from two perspectives: (1) managing a phasedown of existing energy sources and technology and (2) ramping up, developing, and deploying alternative clean energy sources and technology over time (CARB, 2022b).

The 2022 Scoping Plan also discusses the role of local governments in meeting the State's GHG reductions goals because local governments have jurisdiction and land use authority related to community-scale planning and permitting processes, local codes and actions, outreach and education programs, and municipal operations. The 2022 Scoping Plan encourages local

45 *Carbon neutrality* means "net zero" emissions of GHGs. In other words, it means that GHG emissions generated by sources such as transportation, power plants, and industrial processes must be less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and through mechanical sequestration. AB 1279 uses the terminology net zero and the 2022 Scoping Plan uses the terminology carbon neutrality or carbon neutral. These terms mean the same thing and are used interchangeably.

governments to take ambitious, coordinated climate action at the community scale; action that is consistent with and supportive of the State's climate goals. These could include:

- Developing local CAPS and strategies consistent with the State's GHG emission reduction goals.
- Incorporating State-level GHG priorities into their processes for approving land use and individual plans and individual projects.
- Implementing CEQA mitigation, as needed, to reduce GHG emissions associated with new land use development projects, and
- Leveraging opportunities for regional collaboration.

Senate Bill 743

In 2013, Governor Brown signed SB 743, which added Public Resources Code Section 21099 to CEQA. SB 743 changed the way that transportation impacts are analyzed in Transit Priority Areas (TPAs)[46] under CEQA, better aligning local environmental review with statewide objectives to reduce GHG emissions, encourage infill mixed-use development in designated priority development areas (PDAs),[47] reduce regional sprawl development, and reduce VMT in California.

As required under SB 743, OPR developed potential metrics to measure transportation impacts that may include, but are not limited to, VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. The new VMT metric is intended to replace the use of automobile delay and level of service as the metric to analyze transportation impacts under CEQA.

In its 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR recommends different thresholds of significance for projects depending on land use types (OPR, 2018). For example, residential and office space projects must demonstrate a VMT level that is 15 percent less than that of existing development to determine whether the mobile-source GHG emissions associated with the project are consistent with statewide GHG reduction targets. With respect to retail land uses, any net increase in VMT may be sufficient to indicate a significant transportation impact.

Senate Bill 350

SB 350, the Clean Energy and Pollution Reduction Act of 2015 (Chapter 547, Statutes of 2015), was approved by Governor Brown on October 7, 2015. SB 350 changed the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased from 33 percent to 50 percent by December 31, 2030. The act requires the State Energy Resources Conservation and

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[46] A Transit Priority Area is defined in California Public Resource Code, Section 21099 as an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program or applicable regional transportation plan.

[47] Priority Development Areas are locally designated areas within existing communities that have been identified and approved by local cities or counties for future growth. These areas are typically accessible to transit, jobs, shopping, and other services. Over 70 local governments have voluntarily designated some 170 PDAs, which are proposed to absorb about 80 percent of new housing and over 60 percent of new jobs on less than five percent of the Bay Area's land. The result is a locally supported, compact and efficient growth pattern that meets CARB's GHG reduction targets and provides adequate housing for the Bay Area's growing population.

Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in existing electricity and natural gas final end uses of retail customers by January 1, 2030.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, establishing that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also creates new standards for the RPS goals that were established by SB 350 in 2015. Specifically, the law increases the percentage of energy that both investor-owned utilities and publicly-owned utilities must obtain from renewable sources from 50 percent to 60 percent by 2030. Incrementally, these energy providers must also have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable, because many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Advanced Clean Cars Program

In January 2012, pursuant to Recommended Measures T-1 and T-4 of the 2008 Scoping Plan, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model years 2017 through 2025. In response to a midterm review of the standards in March 2017, CARB directed staff to begin working on post-2025 model year vehicle regulations (Advanced Clean Cars II) to research additional measures to reduce air pollution from light-duty and medium-duty vehicles. Additionally, as described earlier, in September 2020, Governor Newsom signed EO N-79-20 that established a goal that 100 percent of California sales of new passenger car and trucks be zero-emission by 2035 and directed CARB to develop and propose regulations toward this goal. The primary mechanism for achieving these targets for passenger cars and light trucks is the Advanced Clean Cars II Program.

In 2022, CARB approved the Advanced Clean Cars II Program (CARB, 2023b), for model years 2026 through 2035, which requires that all new passenger cars, trucks and SUVs sold in California be zero emissions by 2035. The regulation amends the Zero-emission Vehicle (ZEV) Regulation to require an increasing number of ZEVs, and relies on advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and plug-in hybrid electric-vehicles, to meet air quality and climate change emissions standards, in support of EO N-79-20. This Program also amended the Low-emission Vehicle Regulations to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions. By increasing the number of ZEVs on the road and continuing to clean up conventional internal combustion vehicles, the regulations will reduce exposure to vehicle pollution in communities throughout California, including EJ communities that are disproportionately exposed to vehicular pollution.

Mobile Source Strategy

In May 2016, CARB released the updated 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 next 15 years. The strategy promotes a transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of VMT. The Mobile Source Strategy calls for 1.5 million ZEVs (including plug-in hybrid electric, battery-electric, and hydrogen fuel cell vehicles) by 2025 and 4.2 million ZEVs by 2030. The strategy also calls for more-stringent GHG requirements for light-duty vehicles beyond 2025 as well as GHG reductions from medium-duty and heavy-duty vehicles and increased deployment of zero emission trucks primarily for class 3 through 7 “last mile” delivery trucks in California. Statewide, the Mobile Source Strategy would result in a 45 percent reduction in GHG emissions from mobile sources and a 50 percent reduction in the consumption of petroleum-based fuels (CARB, 2016).

Senate Bill 1383 (Short-Lived Climate Pollutants)

SB 1383, enacted in 2016, requires statewide reductions in short-lived climate pollutants across various industry sectors. The climate pollutants covered under SB 1383 include methane, fluorinated gases, and black carbon—all GHGs with a much higher warming impact than CO_2 and with the potential to have detrimental effects on human health. SB 1383 requires CARB to adopt a strategy to reduce methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The methane emissions reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025.

Assembly Bill 341

AB 341, which became law in 2011, established a new statewide goal of 75 percent recycling through source reduction, recycling, and composting by 2020. The new law changed the way that the State measures progress toward the 75 percent recycling goal, focusing on source reduction, recycling, and composting. AB 341 also requires all businesses and public entities that generate four cubic yards or more of waste per week and multifamily residential dwellings with five units or more to have a recycling program in place (California Legislative Information, 2011). The purpose of the law is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and expand the opportunity for additional recycling services and recycling manufacturing facilities in California.

Assembly Bill 1826

AB 1826, known as the Commercial Organic Waste Recycling Law, became effective on January 1, 2016, and requires businesses and multi-family complexes (with five units or more) that generate specified amounts of organic waste (compost) to arrange for organics collection services. The law phases in the requirements on businesses with full implementation realized in 2019:

- **First Tier:** Commenced in April 2016, the first tier of affected businesses included those that generate eight or more cubic yards of organic materials per week.
- **Second Tier:** In January 2017, the affected businesses were expanded to include those that generate four or more cubic yards of organic materials per week.
- **Third Tier:** In January 2019, the affected businesses were expanded further to include those that generate four or more cubic yards of commercial solid waste per week.

State of California Building Codes

California Building and Energy Efficiency Standards (Title 24)

The California Energy Commission (CEC) first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although the standards were not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and non-residential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods.

On August 11, 2021, the CEC adopted the 2022 Energy Code which was approved by the California Building Standards Commission (CBSC) for inclusion into the California Building Standards Code. This update to the building code provides crucial steps in the State's progress toward 100 percent carbon neutrality by midcentury (CEC, 2022). The 2022 Energy Code builds on California's technology innovations, encouraging energy efficient approaches to encourage building decarbonization, emphasizing in particular on heat pumps for space heating and water heating. This set of Energy Codes also strengthens ventilation standards to improve indoor air quality and extends the benefits of photovoltaic and battery storage systems and other demand flexible technology to work in combinations with heat pumps to enable California buildings to be responsive to climate change. Buildings whose permit applications are applied for on or after January 1, 2023, must comply with the 2022 Energy Code. The Energy Code includes measures that will reduce energy use in single family, multifamily, and nonresidential buildings. These measures will:

6. Affect newly constructed buildings by adding new prescriptive and performance standards for electric heat pumps for space conditioning and water heating, as appropriate for the various climate zones in California;
7. Require photovoltaic (PV) and battery storage systems for newly constructed multifamily and selected nonresidential buildings;
8. Update efficiency measures for lighting, building envelope, HVAC; and
9. Make improvements to reduce the energy loads of certain equipment covered by (i.e., subject to the requirements of) the Energy Code that perform a commercial process that is not related to the occupant needs in the building (such as refrigeration equipment in refrigerated warehouses, or air conditioning for computer equipment in data processing centers).

California Green Buildings Standards Code

The California Green Building Standards Code, Part 11, Title 24, California Code of Regulations, known as CALGreen, is the first-in-the-nation mandatory green building standards code. In 2007, CBSC developed green building standards in an effort to meet the goals of California's landmark initiative AB 32. The CALGreen Code is intended to encourage more sustainable and environmentally friendly building practices, require low-pollution-emitting substances that cause less harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment. CALGreen covers a number of areas, with regulations encompassing energy efficiency, water conservation, sustainable building materials, site design, and indoor air quality.

Since 2011, the CALGreen Code has been mandatory for all new residential and non-residential buildings constructed in the State. Such mandatory measures include energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is reviewed and updated on a three-year cycle.

The 2019 CALGreen Code that took effect on January 1, 2020, included new mandatory measures, including EV charging requirements for residential and non-residential buildings. The 2022 CALGreen update simplifies the code and its application in several ways. It offers new voluntary prerequisites for builders to choose from, such as battery storage system controls and heat pump space, and water heating, to encourage building electrification. While the 2019 CALGreen Code only requires provision of EV Capable spaces with no requirement for chargers to be installed at multifamily dwellings, the 2022 CALGreen code mandates chargers (California Building Standards Commission [CBSC], 2022).

Regional

Bay Area Air Quality Management District

The Bay Area Air Quality Management District (BAAQMD) is the regional government agency that regulates stationary sources of air pollution in the nine San Francisco Bay Area counties. BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

Clean Air Plan

BAAQMD and other air districts prepare clean air plans in accordance with the federal and State Clean Air Acts. On April 19, 2017, BAAQMD Board of Directors adopted the 2017 *Clean Air Plan: Spare the Air, Cool the Climate*, an update to the 2010 Clean Air Plan (BAAQMD, 2017a). The Clean Air Plan is a comprehensive plan that focuses on the closely related goals of protecting public health and protecting the climate. Consistent with the State's GHG reduction targets, the plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

BAAQMD Climate Protection Program

In 2005, BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the San Francisco Bay Area Air Basin. The climate protection program includes measures that promote energy efficiency, reduce VMT, and develop alternative sources of energy, all of which assist in reducing GHG emissions and reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines also include recommended assessment methods for air toxics, odors, and GHG emissions. The 2017 update to the BAAQMD CEQA Air Quality Guidelines (BAAQMD, 2017b) include significance thresholds for GHG emissions based on the emission reduction goals for 2020 articulated by the California Legislature in AB 32. In April 2022, in response to SB 32 and 2017 Scoping Plan Update targets for 2030 and EO B-15 target for carbon neutrality no later than 2045, BAAQMD adopted updated CEQA significance thresholds for GHGs (BAAQMD, 2022) and included them in the 2022 update to the BAAQMD CEQA Air Quality Guidelines (BAAQMD, 2023).

For land use development projects, BAAQMD recommends using the approach endorsed by the California Supreme Court in *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal.4th 204), which evaluates a project based on its effect on California's efforts to meet the State's long-term climate goals. As the Supreme Court held in that case, a project that would be consistent with meeting those goals can be found to have a less-than-significant impact on climate change under CEQA. If a project would contribute its "fair share" of what will be required to achieve those long-term climate goals, then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change (62 Cal.4th 220–223). Applying this approach, BAAQMD recommends that new land use development projects incorporate BAAQMD-identified design elements to do their "fair share" of implementing the goal of carbon neutrality by 2045 (discussed more under *Significance Thresholds* below).

Alternately, a local government may prepare a qualified GHG reduction strategy that is consistent with SB 32 goals. If a project is consistent with an adopted qualified GHG reduction strategy and general plan that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA (BAAQMD, 2023).

Metropolitan Transportation Commission/Association of Bay Area Governments

Sustainable Communities Strategy—Plan Bay Area

MTC is the federally recognized Metropolitan Planning Organization for the nine-county Bay Area which has adopted Plan Bay Area which includes the region's Sustainable Communities Strategy, as required under SB 375, and the 2040 Regional Transportation Plan. A central GHG reduction strategy of Plan Bay Area is the concentration of future growth in PDAs and TPAs. To be eligible for PDA designation, an area must be within an existing community, near existing or planned fixed transit or served by comparable bus service and planned for more housing. A TPA is an area within 0.5 miles of an existing or planned major transit stop such as a rail transit station, a ferry terminal served by transit, or the intersection of two or more major bus routes (Metropolitan Transportation Commission [MTC] and Association of Bay Area Governments [ABAG], 2013).

On July 26, 2017, MTC adopted *Plan Bay Area 2040*, a focused update that builds upon the growth pattern and strategies developed in the original Plan Bay Area but with updated planning assumptions that incorporate key economic, demographic, and financial trends since the original plan was adopted (MTC & ABAG, 2017).

On October 21, 2021, the MTC and the Executive Board of the ABAG jointly adopted *Plan Bay Area 2050* and its related supplemental reports. Plan Bay Area 2050 connects the elements of housing, the economy, transportation and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific actions for MTC, ABAG and partner organizations to take over the next five years to make headway on each of the 35 strategies (MTC & ABAG, 2021). It will be several years before the regional transportation model (and therefore county and local transportation models) are updated to reflect *Plan Bay Area 2050*; the models currently incorporate data from *Plan Bay Area 2040*.

University of California

Policies and Plans of the University of California

In 2007, the Chancellor of UCSF signed the American College and University Presidents' Climate Commitment (ACUPCC) to complete a GHG emissions inventory, set target dates and interim milestones for becoming climate-neutral,[48] take steps to reduce GHG emissions, and prepare public progress reports.[49] As an intermediate target, UC established the goals of reducing GHG emissions to 2000 levels by 2014; 1990 levels by 2020; and achieving climate neutrality as soon as possible after reaching the 2014 and 2020 reduction targets. More recently, UCSF committed to achieving net zero Scope 1 and Scope 2 emissions by the year 2025.[50] These goals pertain to Scope 1 and Scope 2 emissions of the six Kyoto GHGs originating from sources specified in the ACUPCC,[51] as well as Scope 3 emissions from business airline travel and commuting by UCSF staff and students. The policy specifies that these goals will be pursued while maintaining the primary research and education mission of the University.

In 2007, the UC President adopted the UC *Policy on Sustainable Practices*, which committed UC to implementing actions intended to minimize the University's impact on the environment and reduce the University's dependence on non-renewable energy. The policy was most recently revised in July 2023 (University of California, 2023), and establishes goals in 13 areas of sustainable practices: green building design, clean energy, climate action, transportation, sustainable operations, zero waste, procurement, foodservice, water, health care, performance assessment, health and well-being, and diversity, equity, inclusion and justice. The *Policy on Sustainable Practices* will continue to be updated over time.

The most recent version of the UC Policy on Sustainable Practices contains the following policy goals (University of California, 2023).

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48 Climate neutrality for UCSF is defined as the University having a net-zero impact on the Earth's climate; it will be achieved by minimizing GHG emissions as much as possible and using other measures to mitigate the remaining GHG emissions (*UCSF Climate Action Plan*, 2009).

49 American College & University, 2007. Text of the American College & University Presidents Climate Commitment.

50 This is the current commitment made under the ACUPCC and the goal that is referenced in UCSF's Annual Progress Report to the UC Regents.

51 The six GHGs identified in the Kyoto Protocol/ACUPCC are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.

A. Green Building Design

New Buildings

- At a minimum, all new building projects, other than acute care facilities, will be designed, constructed, and commissioned to outperform the California Building Code (CBC) energy-efficiency standards by at least 20% or meet the whole-building energy performance compliance targets listed in Table 1 of Section V.A.1. Additionally, whenever possible within the constraints of program needs and standard budget parameters, the University will strive to design, construct, and commission buildings that outperform CBC energy efficiency standards by at least 30% or meet the whole-building energy performance stretch targets.

- Acute care/hospital facilities and medical office buildings will be designed, constructed, and commissioned to outperform ASHRAE 90.1 - 2010 by at least 30% or meet the whole-building energy performance targets.

- New building or major renovation projects must not use onsite fossil fuel combustion (e.g., natural gas) for space and water heating (except those projects connected to an existing campus central thermal infrastructure). Projects unable to meet this requirement will document the rationale for this decision.

- All new buildings will at a minimum achieve a USGBC LEED "Gold". Additionally, whenever possible within the constraints of program needs and standard budget parameters, all new buildings will strive to achieve certification at a USGBC LEED "Platinum" rating. This provision applies to all building projects submitting Preliminary Drawings after January 1, 2024. Projects submitted prior to that date have the option to follow the old standard of achieving LEED Silver and striving for Gold.

- The University of California will design, construct, and commission new parking structures to achieve, at a minimum, Parksmart "Silver" certification and strive to achieve "Gold" whenever possible within the constraints of program needs and standard budget parameters. This provision applies to all building projects submitting Preliminary Drawings after January 1, 2024.

- All new building projects will achieve at least five points within the available credits in LEED-BD+C's Water Efficiency and Sustainable Sites: Rainwater Management categories and prioritize earning waste reduction and recycling credits.

Building Renovations

- Major Renovations of buildings are defined as projects that require 100% replacement of mechanical, electrical, and plumbing systems and replacement of over 50% of all non-shell areas (interior walls, doors, floor coverings, and ceiling systems) will at a minimum comply with III.A.1.d. or III.A.1.e. Such projects will outperform CBC Title 24, Part 6, currently in effect, by 20%. This does not apply to acute care facilities.

- Acute care facilities and medical office buildings undertaking major renovations, as defined above, will outperform ASHRAE 90.1- 2010 by 30%.

- Renovation projects with a cost of $5 million or greater (when the California Construction Cost Index (CCCI) is 5000 or greater) that do not constitute a Major Renovation as defined in item III.A.2.a. will, at a minimum, achieve a LEED-ID+C Certified rating. When the CCCI rises, the minimum project threshold will rise proportionally. These projects will also register with the utilities' energy efficiency program, if eligible. This does not apply to acute care facilities.

B. Clean Energy

- *Energy Efficiency*: Each location will implement energy efficiency actions in buildings and infrastructure systems to reduce the location's energy use intensity by an average of at least 2% annually.
- *On-campus Renewable Electricity*: Campuses and health locations will install additional on-site renewable electricity supplies and energy storage systems whenever cost-effective and/or supportive of the location's Climate Action Plan or other goals.
- *Off-campus Clean Electricity*: By 2025, each campus and health location will obtain 100% clean electricity. The UC Clean Power Program first met this standard in 2018 and will continue to provide 100% clean electricity to participating locations.
- *Transitional Biomethane*: By 2025, at least 20% of the natural gas historically combusted on-site at each campus and health location will be biomethane. These biomethane volumes will double by 2030 and then decrease over time as UC's supply contracts expire. UC's use of UCOP-supplied biomethane as a transition fuel to replace fossil gas will conclude before 2040.

C. Climate Action

Total Emissions

- Locations will achieve at least a 90% reduction in total emissions (Scopes 1, 2, and 3) by no later than calendar year 2045 relative to a 2019 baseline year.
- After 2045, any residual emissions beyond the 90% reduction will be negated by carbon removal.

Scope 1 Emissions

- Informed by the decarbonization studies currently under development, before 2025, each UC location will set and submit to the UC Office of the President Scope 1 GHG reduction targets for calendar years 2030, 2035 and 2040. All percent-reduction targets will be set relative to a 2019 baseline year.
- Given the urgency of the climate crisis, locations will set the most aggressive targets feasible. Both collectively and individually, all locations will work to secure funding to meet targets.
- While near-term targets are being developed for years 2030 and beyond, each location will incrementally reduce GHG emissions from the on-site combustion of fossil fuels relative to emissions in 2019. These reductions will be reported to the UC Office of the President annually.
- In lieu of purchasing voluntary offsets and to further accelerate on-site actions, beginning in 2025 through 2030, each campus and the UC Office of the President will allocate funds equal to \$25/MTCO2e for all remaining Scope 1 and Scope 2 emissions. These funds will be used to achieve direct emissions reductions as described in the Procedures Section V.C.5 or to support climate justice or community benefit programs. The price per ton will increase by 5% each year beginning in 2026.
- Beginning in 2025, each campus and the UC Office of the President (UCOP) will use UCOP-procured biomethane as a transition fuel to partially replace fossil gas. UC's use

of UCOP-supplied biomethane will conclude before 2040. UC locations will report annual Scope 1 emissions to UCOP and the impact that biomethane use has on those emissions.

Scope 2 Emissions

- Campuses and the UC Office of the President will purchase 100% clean electricity beginning in 2025.

Scope 3 Emissions

- Locations will set Scope 3 emission reduction targets with respect to a 2019 baseline year, to include emission sources from business travel, commuting, and disposal and treatment of solid waste. At a minimum, Scope 3 emissions reduction targets will align with the State of California's goals and policies to achieve climate neutrality by 2045 or sooner.

Climate Action Plans

- Each UC location will prepare an updated climate action plan (CAP) to establish and achieve the above GHG emission reduction goals.
- The climate action plans will be adopted by campus leadership and submitted to the UC Office of the President prior to 2026, with implementation to begin immediately.
- Climate action plans will be updated as needed to incorporate new scientific insights and technological advances; reflect applicable laws, policies, and established global commitments; consider State and regional electricity supply issues; and address social and cultural shifts around climate action.
- Climate action plans will evaluate a broad range of climate solutions and will prioritize selected actions based on cost-effectiveness and climate justice considerations in addition to other location priorities.

Carbon Offsets

- The University will prioritize direct reductions of its covered scope 1, 2, and 3 emissions. Counting carbon offsets toward a location's GHG reduction targets will be limited to:

  i. California Carbon Offsets purchased to meet regulatory requirements of the California Air Resource Board.

  ii. Direct carbon removals used to negate residual emissions (not to exceed 10% per section III.C.1.).

  Voluntary offsets purchased to meet obligations under the California Environmental Quality Act, the LEED green building certifications, or other purposes will not count toward a location's GHG reduction targets.

- The University will only use high-quality offset credits to meet goals beyond its requirements under California's cap-and-trade program and will draw on the University's academic capacity to vet the quality of all voluntary offset credits it uses.
- To align its voluntary offset program with its research, education, and public service mission, the University will choose offset projects that demonstrate or advance scalable climate solutions aligned with a path towards deep decarbonization; prioritize projects

that advance University research and support student education; prioritize projects with health and social justice benefits, and benefits to the UC community and communities surrounding the campuses; and prioritize projects with the potential for climate benefits well beyond the credited reductions, recognizing the urgency of near-term reductions. The University will analyze the ecological, health, social, and human rights impacts of its offset decisions to avoid negative outcomes for low-income communities, communities of color, and other marginalized populations and will prioritize projects that benefit these communities.

D. Sustainable Transportation

- Each location will reduce GHG emissions from its fleet and report annually on its progress. Locations will implement strategies to reduce emissions from University-owned or operated fleet vehicles to align with UC's climate action goals (as outlined in section III.C.). To support this goal, each location will ensure that:
    - After July 1, 2023, zero-emission vehicles, plug-in hybrid, or dedicated clean transportation fueled vehicles will account for at least 50% of all vehicle acquisitions (including both leased and purchased vehicles).
    - All sedans and minivan acquisitions will be zero-emission or plug-in hybrid vehicles, except for public safety vehicles with special performance requirements.
    - In applications where zero-emission vehicles are not available, regardless of vehicle size class, the use of clean transportation fuels and other low-emission fuels will be prioritized.
    - Vehicle acquisitions plans should meet the State's goal (outlined in Executive Order N-79-20) that all new passenger cars and light-duty trucks (under 8,500 lbs.) acquired after January 1, 2035, and all medium-and heavy-duty vehicles acquired or operated after January 1, 2045, will be zero-emission.
- The University recognizes that single-occupant vehicle (SOV) commuting is a primary contributor to commute-related GHG emissions and localized transportation impacts.
    - By 2025, each location will strive to reduce its percentage of employees and students commuting by SOV by 10% relative to its 2015 SOV commute rates.
    - By 2050, each location will strive to have no more than 40% of its employees and no more than 30% of all employees and students commuting to the location by SOV.
- Consistent with the State of California goal of increasing alternative fuel – specifically electric – vehicle usage, the University will promote purchases and support investment in alternative fuel infrastructure at each location.
    - By 2025, each location will strive to have at least 4.5% of commuter vehicles be zero-emissions vehicles (ZEV).
    - By 2050, each location will strive to have at least 30% of commuter vehicles be ZEV.
- Each location will develop a business-case analysis for any proposed parking structures serving University affiliates or visitors to campus to document how a capital investment in parking aligns with each campus' Climate Action Plans and/or sustainable transportation policies.

E. Sustainable Building and Laboratory Operations for Campuses

- Each campus will seek to certify as many buildings as possible through the LEED-O+M rating system within budgetary constraints and eligibility limitations.
- All campuses will maintain an ongoing Green Lab Assessment Program supported by a department on campus to assess the operational sustainability of research groups and the laboratories and other research spaces.
  - At least one staff or faculty member from the campus must have the role of managing the Green Lab Assessment Program.
  - Any green lab assessment programs and related efforts will adhere to all relevant UC, state and national policies and laws. Safety will never be compromised to accommodate sustainability goals.
  - All campuses will maintain a UC Green Laboratories Action Plan.

F. Zero Waste

- The University will achieve zero waste through prioritizing waste reduction in the following order: reduce, reuse, and then recycle and compost (or other forms of organic recycling) as described in section V.F.6. Minimum compliance for zero waste, at all locations other than health locations, is as follows:
  - Reduce per capita municipal solid waste generation by 25% per capita from FY2015/16 levels by 2025 and 50% per capita from FY2015/16 levels by 2030.
- Divert 90% of municipal solid waste from the landfill.
- The University supports the integration of waste, climate and other sustainability goals, including the reduction of embodied carbon in the supply chain through the promotion of a circular economy and the management of organic waste to promote atmospheric carbon reduction. In support of this goal, waste reporting will include tracking estimated scope 3 greenhouse gas emissions.
- The University prohibits the sale, procurement, or distribution of packaging foam, such as food containers and packaging material, other than that utilized for laboratory supply or medical packaging and products. The University seeks to reduce, reuse, and find alternatives for packaging foam used for laboratory and medical packaging products.
  - No packaging foam or expanded polystyrene (EPS) will be used in foodservice facilities for takeaway containers.
  - For implementation guidelines related to the procurement of goods for University of California campuses, reference the University of California Sustainable Procurement Guidelines.
- The University is committed to the reduction and elimination of single-use items in line with the University's and the State of California's Zero Waste goals and in recognition of the severe environmental impact single-use products have globally. In recognition of this commitment, locations will reduce single-use products by taking the following actions:
  - The distribution of plastic bags is prohibited in all retail and foodservice establishments in campus facilities or located on University owned land.

- Replace disposable single-use plastic foodware accessory items in all foodservice facilities with reusables or locally compostable alternatives and provide only upon request no later than July 1, 2024.
- Provide reusable foodware items for food consumed onsite at dine-in facilities and to-go facilities no later than July 1, 2024.
- Replace single-use plastic foodware items with reusable or locally compostable alternatives at to-go facilities no later than July 1, 2024.
- Phase out the procurement, sale and distribution of single-use plastic beverage bottles. Non-plastic alternatives will be locally recyclable or compostable.
  - Foodservice facilities will provide alternatives no later than January 1, 2024.
  - Locations are encouraged to prioritize the installation of water refill stations to support the transition from single-use plastics to reusables. iii. Locations will consider eliminating single-use plastic beverage bottles when contracting with suppliers, or upon contract renewal and/or extension if current contract terms prohibit (e.g., vending machines, departmental purchases, etc.).
- When selecting prepackaged, sealed food that is mass produced off premises and resold at University locations (e.g., grab-and-go items, such as chips, candy, prepackaged sandwiches, etc.), preference should be given in contract award and negotiations to suppliers that utilize locally compostable or locally recyclable packaging options.

This Policy section also applies to third-party foodservice facilities that lease space or provide contracted services at locations. Locations will include these Policy provisions in lease language as new leases and contracts are negotiated or existing leases are renewed and work to incorporate these practices, as much as possible, within the timeframe of current leases. When procuring catering services, where possible, select providers that can provide alternatives to single-use plastics.

G. Sustainable Procurement

- The University values the health and wellbeing of its students, staff, faculty and other academic appointees, visitors, and suppliers. The University seeks to provide healthy and accessible conditions for the communities it serves, and this will be considered as a fundamental factor when making procurement decisions. Where functional alternatives to harmful products or impacts exist, they are to be strongly preferred.
- The University prioritizes waste reduction in the following order: reduce, reuse, and then recycle. Accordingly, sustainable procurement will look to reduce unnecessary purchasing first, then prioritize the purchase of surplus or multiple-use products, before looking at recyclable or compostable products.
- The University's sustainable purchasing requirements are:
  - Compliance with Required Level Green Spend criteria within three fiscal years of the addition of those products and/or product categories to the Guidelines.
  - 25% Preferred Level Green Spend as a total percentage of spend per product category; target to be reached within three fiscal years after a category is added to the Guidelines.

  - 25% Economically and Socially Responsible Spend as a total percentage of addressable spend; target to be reached within five fiscal years of adoption of this section in the Guidelines.

- The University's sustainable purchasing reporting requirements are:
  - Reporting on percent Preferred Level Green Spend beginning at the close of the first full Fiscal Year after a category is added to the Guidelines.
  - Reporting on percent Economically and Socially Responsible Spend.

- Each University's Procurement department will integrate sustainability into its processes and practices, including competitive solicitations, to satisfy the sustainable purchasing goals outlined above for products, as well as for the procurement of services. The University will do so by:
  - Allocating a minimum of 15% of the points utilized in solicitation evaluations to sustainability criteria. Criteria may include, but are not limited to, sustainable product attributes, supplier diversity, supplier practices, contributions to health and wellbeing, and materials safety. Exceptions to this Policy may only be granted by the appropriate Policy Exception Authority. Decisions to grant an exception will be made in the context of a location's need to support teaching, research and public service when there is a demonstrable case that the inclusion of a minimum of 15% of the points utilized in solicitation evaluation for sustainability criteria will conflict with the project teams' ability to execute a competitive solicitation.
  - Supporting outreach, education, and providing equal access to small, diverse, and disadvantaged suppliers for all applicable University procurement opportunities in accordance with BUS-43 policy.
  - Comparing the Total Cost of Ownership when evaluating costs for goods and services in the selection of suppliers, whenever feasible.
  - Targeting sustainable products and services for volume-discounted pricing to make less competitive or emerging sustainable products and services cost competitive with conventional products and services.
  - Leveraging its purchasing power and market presence to develop sustainable product and service options where not already available.
  - Requiring packaging for all products procured by the University be designed, produced, and distributed to the end-user in a sustainable manner.
  - Contracting with suppliers of products (e.g., electronics, furniture, lab consumables) that have established (preferably non-manufacturer specific) end-of-life reuse, recycling, and/or takeback programs at no extra cost to the University, and in compliance with applicable federal, state, and University regulations regarding waste disposal.
  - Requiring sustainability-related purchasing claims to be supported with UC-recognized certifications and/or detailed information on proven benefits, durability, recycled content, and recyclability properties, in accordance with the Federal Trade Commission's (FTC) Green Guides for the use of environmental marketing claims.
  - Working with its suppliers to achieve greater transparency and sustainable outcomes throughout the supply chain. This may include maximizing the procurement of

products that optimize the use of resources from extraction through manufacturing and distribution (e.g., EPA's SmartWay Program).

- All procurement staff will consult the UC Sustainable Procurement Guidelines document for minimum mandatory sustainability requirements to be included in solicitations for a given product or service category.

H. Sustainable Foodservices

Campus and Health Location Foodservice Operations

- *Food Procurement*: Each campus foodservice operation will strive to procure 25% sustainable food products by the year 2030 as defined by AASHE STARS, and each health location foodservice operation will strive to procure 30% sustainable food products by the year 2030 as defined by Practice Greenhealth, while maintaining accessibility and affordability for all students and health location's foodservice patrons.

- *Education*: Each campus and health location will provide patrons and foodservice staff with access to educational and training materials that will help support their food choices.

- *Menu Development*: Each campus and health location will strive to reduce greenhouse gas emissions of their food purchases through globally-inspired, culturally-acceptable plant-forward menus.

  - Each campus and health location will procure 25% plant-based food by 2030 and strive to procure 30% by 2030.
  - Progress will be tracked annually by reporting the percentage of plant-based food.

Foodservice Operations in Leased Locations

- Foodservice operations leased in campuses and health locations owned by the University of California and contractors providing foodservices in campus and health locations will strive to meet the policies in III.H.1.a-c.

- Campuses and health locations will include Section H of this Policy in lease language as new leases and contracts are negotiated or existing leases are renewed. However, campus and health locations will also work with tenants to advance sustainable foodservice practices as much as possible within the timeframe of current leases.

I. Sustainable Water Systems

- Locations will reduce growth-adjusted potable water consumption 20% by 2020, and 36% by 2025, when compared to a three-year average baseline of FY2005/06, FY2006/07, and FY2007/08. Locations that achieve this target early are encouraged to set more stringent goals to further reduce potable water consumption.

  - Each campus will strive to reduce potable water used for irrigation by converting to recycled water, implementing efficient irrigation systems, planting drought-tolerant landscaping (including California native plants where feasible and appropriate), and/or removing turf.
  - Campuses and Academic Health Centers will complete Water Recycling and Stormwater Evaluations.

- Each location will develop and maintain a Water Action Plan that identifies longterm strategies for achieving sustainable water systems.

- Each campus will identify once-through cooling systems, constant flow sterilizers, constant-flow autoclaves and other water-to-waste cooling systems. Each campus will develop and implement plans for eliminating or replacing these systems with recirculating systems or other means of cooling that do not drain water to waste after one use.
- New equipment requiring liquid cooling will be connected to an existing recirculated building cooling water system, new local chiller vented to building exhaust or outdoors, or to the campus chilled water system through an intervening heat exchange system, if available.
  - Once-through or single-pass cooling systems will not be allowed for soft-plumbed systems using flexible tubing and quick-connect fittings for short-term research settings.
  - If no alternative to single-pass cooling exists, water flow must be metered, automated and controlled to reduce water waste.
- Required water efficiency measures applicable to building projects are outlined in Section A of this Policy on Green Building Design, New Building.
- Guidelines for the sustainable procurement of water fixtures, as applicable, are listed in the UC Sustainable Procurement Guidelines.
- Provide easy access to drinking water at no charge in accordance with California Water Code Section 106.3 (enacted through AB 685 in 2012).

J. Sustainability at UC Health

- Health locations will achieve Practice Greenhealth's award "Greenhealth Partner for Change."
- Health locations will achieve a target of 25lbs of total waste as defined by Practice Greenhealth per Adjusted Patient Day by 2025 and strive for 20lbs of total waste per Adjusted Patient Day by 2030. In meeting these goals, Health locations will follow the provisions outlined in section F of this Policy on Zero Waste, including limiting combustion and reducing the use of foam and single-use products.
  - Practice Greenhealth defines total waste as municipal solid waste as well as all forms of regulated waste. This includes but is not limited to regulated medical waste, biohazardous waste, pharmaceutical waste, and universal waste. It does not include construction and demolition waste.
- In line with campus targets, health locations will reduce growth-adjusted potable water consumption 20% by 2020 and 36% by 2025, when compared to a three-year average baseline of FY 2005/06, FY 2006/07, and FY 2007/08.
- Acute care/hospital facilities and medical office buildings in health locations will be designed, constructed and commissioned, or renovated as outlined in Section A of this Policy on Green Building Design.
- Sustainable Procurement
  - Medical device reprocessing: As applicable, health locations will consider product reprocessing as a sustainability criteria and a reprocessed item should be considered

over a comparable product that cannot be reprocessed. To assist with this goal, health locations will:

- Strive for new contracts to specify that at least 20% of disposables should be purchased reprocessed as approved by the FDA when available and operationally feasible.
- Implement a medical device reprocessing program with an FDA-approved third party reprocessor by 2025.
- Evaluate at least 3 products/devices and associated contracts for reprocessing collection by 2025.
- Evaluate at least 3 products/devices and associated contracts for reprocessing buy-back by 2025.

- Appliances and IT Hardware: In line with campus targets outlined in III.G.3 of this policy on Sustainable Procurement, appliances and IT hardware should meet the Required Level Green Spend. 25% of appliances and IT hardware should meet the Preferred Level Green Spend.
- Office Supplies: In line with campus targets outlined in III.G.3 of this policy on Sustainable Procurement, office supplies should meet the Required Level Green Spend. 25% of office supplies should meet the Preferred Level Green Spend.

K. General Sustainability Performance Assessment

- All undergraduate campuses must maintain a certified AASHE STARS report.
- All campuses must achieve a Gold STARS rating and strive for Platinum.

L. Health and Well-Being

- Health, equity, and the environment, including climate, are deeply interconnected, thus health, inequity, and environmental and climate change require intersectoral and collaborative solutions. Healthful food, healthy buildings, and active transportation are just some examples in which health, sustainability, and equity are synergistic. The Healthy Campus Network (HCN) leadership will use a Health in All Policies[52] framework and broad stakeholder engagement to better address health inequities; to support a culture of health for all faculty, staff, and students; to foster community collaborations across the UC system and California; and to meet the policy goals outlined below.
  - The HCN will review the strengths and gaps in the UC Sustainable Practices Policy and make recommendations for integration based on environmental and human health co-benefits; social, physical, and emotional well-being; and health equity.
  - Guidelines for healthy vending and healthy spending.
  - Chemicals of Concern: Each campus and health location will provide appropriate staff with access to educational materials and/or training on the UC Sustainable

[52] Rudolph, L., Caplan, J., Ben-Moshe, K., & Dillon, L. (2013). Health in All Policies: A Guide for State and Local Governments. Washington, DC and Oakland, CA: American Public Health Association and Public Health Institute.

Procurement Guidelines to help ensure greater adherence to the UC Policy on Sustainable Practices Procurement section.

UC Carbon Neutrality Initiative

In November 2013, UC President Janet Napolitano announced the UC Carbon Neutrality Initiative (CNI), which commits the UC to achieving climate neutrality from Scope 1 and 2 sources by 2025 and progressing toward climate neutrality from specific Scope 3 sources by 2050 or sooner. Scope 1 emission sources include direct emissions from sources owned or controlled by the UC, such as emissions from stationary combustion, process emissions, and fugitive emissions; while Scope 2 sources include indirect emissions from purchased electricity and purchased cogeneration for heating or cooling. Scope 3 sources include emissions from all other sources that occur as a result of university operations but occur from sources not owned or controlled by the university.

UC Strategic Energy Plan

The UC Strategic Energy Plan (SEP; University of California, 2008) was prepared in 2008 for all UC campuses, to fulfill a goal of the UC *Policy on Sustainable Practices* to implement energy efficiency projects in existing buildings. The UCSF portion of the SEP analyzes energy use and GHG trends and identifies potential energy efficiency retrofit projects for all buildings over 50,000 square feet at UCSF (primarily lighting, HVAC, commissioning and central plant measures). Energy savings, GHG emissions savings, and financial returns are estimated for hundreds of projects, which are grouped into Tier 1 (high priority) and Tier 2 (longer term planning) projects based on their energy savings and financial payback. The SEP project list is updated every year by each campus to evaluate the feasibility of additional energy-saving measures.

University of California, San Francisco

UCSF has a robust sustainability program covering sustainability activities across the entire campus and medical center. Through its Office of Sustainability, UCSF has created work groups addressing sustainability in the following areas, most of which have direct implications for GHG emissions: Carbon Neutrality, Zero Waste, Water Conservation, Sustainable Food, Toxics Reduction, Green Procurement, Green Buildings, and Sustainable Operations.

UCSF's Sustainability Governance consists of the Academic Senate Sustainability Committee and the University’s Advisory Committee on Sustainability (UACS). The Academic Senate Sustainability Committee identifies faculty recommendations on improving sustainability at UCSF. The charge of the UACS is to:

1. Annually examine UCSF’s effect on the environment from a comprehensive perspective;
2. Evaluate existing UCSF policies, procedures, and programs that affect the environment;
3. Serve as a coordinating body for groups or individuals concerned with sustainability issues;
4. Advise selected work groups in the development and implementation of UCSF’s sustainability initiatives and goals; and
5. Support reduction of GHG emissions to 1990 levels by 2020.

UCSF Office of Sustainability publishes a Sustainability Dashboard on its web site that includes performance metrics for multiple issue areas, including GHG emissions. UCSF also publishes an annual sustainability report on its web site. The Sustainability Annual Report summarizes the entire UCSF Campus's key accomplishments utilizing 10 key categories of the *Policy on Sustainable Practices*, for a given Fiscal Year, with the most recent report documenting FY2021.[53]

The Energy & Water team implements a strategic vision for the UCSF campus, focused on advancing to zero carbon emissions, and minimizing utility consumption. The UCSF community relies on the team as a core resource to develop and deliver conservation projects, as well as optimizing all projects for efficiency. UCSF is working to meet the UC system-wide goal of carbon neutrality by 2025, through a strategy integrating resource conservation, system performance, reliability, occupant health and comfort, and supporting the academic mission. The long-term strategy is focused on increasing district energy connections, with centralized mechanical equipment that include elements such as a general transition from steam to hot water, heat recovery chillers, thermal or other energy storage, and heat pumps for domestic hot water. UCSF prioritizes water conservation and integrates these efforts with energy and utility projects.

UCSF is committed to achieving carbon neutrality and beyond. The UCSF Energy & Water team supports the Carbon Neutrality Initiative, by implementing projects that reduce overall energy consumption and increase efficiency, and by purchasing more renewable energy. The UC *Policy on Sustainable Practices* requires each campus and health location to obtain 100 percent clean electricity by 2025. UCSF has made great strides toward this goal by transferring the largest electric accounts from PG&E to UC's Clean Power Program and San Francisco city's clean power program, CleanPowerSF. So far UCSF has moved over 98 percent of purchased electricity (Scope 2) to zero-carbon emissions. After taking all possible emissions reduction actions, UCSF will purchase third-party certified carbon offsets to mitigate the remaining emissions.

In order to go beyond the Carbon Neutrality Initiative, and further reduce carbon emissions on campus, UCSF is developing campus-wide strategies, including switching from fossil fuel burning equipment to equipment using carbon-free electricity, heat recovery projects to eliminate heating and cooling inefficiency, and converting from steam distribution to hot water, which will significantly reduce carbon emissions and energy consumption overall. New buildings at UCSF use electricity instead of fossil fuels for heating and cooling.

UCSF is committed to achieving 90 percent decarbonization by 2045. Scope 1 emissions are addressed by reducing use of natural gas for building energy use, reducing use of high emission anesthesia gases, transitioning to low emission refrigerants, and switching to electric or hybrid fleet vehicles. Scope 2 emissions are addressed by purchasing 100 percent clean electricity. Scope 3 emissions generated from commute and business travel are being addressed by making it easier to take alternative transportation and reduce air travel.

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[53] The UCSF Annual Sustainability Report 2022 is available at https://sustainabilityreport.ucop.edu/2022/locations/uc-san-francisco/.

UCSF Climate Action Plan and GHG Reduction Strategy

As part of implementing the *Policy on Sustainable Practices*, UCSF developed a Climate Action Plan in 2009, a long-term strategy for voluntarily meeting the State of California's goal for reducing GHG emissions to 1990 levels by 2020, pursuant to AB 32. In addition, as part of the 2014 LRDP, UCSF developed a GHG Reduction Strategy (GHGRS) to provide streamlined analysis under CEQA for future development projects. Both these documents were updated in 2017 to create a combined UCSF Climate Action Plan – GHGRS to reflect changes that have occurred since 2014 in both the goals outlined in the UC *Policy on Sustainable Practices* and the addition of new campus projects unforeseen at the time of 2014 LRDP adoption.

The UCSF BCH Oakland campus site is not currently included in the UCSF 2014 LRDP and the most recent update to the GHGRS (and consequently, no

t currently subject to the LRDP policies). However, UCSF proposes to amend the 2014 LRDP to include the BCH Oakland campus site, and prior to 2026 will prepare a GHGRS for the BCH Oakland campus site pursuant to the UC *Policy on Sustainable Practices*. LRDP general policies or overarching goals will become applicable, such as those identified in LRDP Chapter 3 and its appendices.

UCSF BCH Oakland Transportation Demand Management

The 2015 Campus Master Plan includes a TDM program that requires UCSF BCH Oakland to reduce the daytime employee mode share by 10 percent to 73 percent after the completion of the Phase 1 of the Master Plan, and by 20 percent to 65 percent after the completion of the Phase 2 of the Master Plan.

UCSF BCH Oakland currently implements a TDM program which includes strategies that emphasize commuting options other than driving alone, such as public transit, shuttle service, biking, walking, and carpooling. The key measures of the UCSF BCH Oakland TDM program being implemented include:

- Free shuttle service between the Hospital and the MacArthur BART Station.
- Pre-tax commuter incentives which allow employees to pay for transit expenses before taxes.
- Bicycle parking and amenities such as a repair station and showers.
- Market-priced on-site parking for employees.
- Preferred on-site carpool parking in the Main Garage.
- Regular employee outreach and education to ensure that employees are aware of all their commuting options.
- Remote work for eligible employees.

It should be noted that UCSF BCH Oakland also pays the City of Oakland to implement a residential parking permit (RPP) program in the neighborhood residential streets where on-street parking for non-residents is typically restricted to two-hours during weekday business hours to discourage employees and patients/visitors from parking in the neighborhood residential streets.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible. City plans and regulations that are germane to the GHG impacts analysis are summarized below.

City of Oakland General Plan

Land Use and Transportation Element (LUTE)

The LUTE (which includes the Pedestrian Master Plan and Bicycle Master Plan) of the Oakland General Plan contains the following policies that address issues related to reducing transportation-related sources of GHG emissions and their effects on climate change (City of Oakland, 1998): Many of these policies are implementable at the City level, but the Project, either by design or due to its location, would be consistent with these policies.

> ***Policy T.2.1: Encouraging Transit-Oriented Development:*** Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.

> ***Policy T.2.2: Guiding Transit-Oriented Development.*** Transit-oriented developments should be pedestrian oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.

> ***Policy T.3.5: Including Bikeways and Pedestrian Walks.*** The City should include bikeways and pedestrian ways in the planning of new, reconstructed, or realigned streets, wherever possible.

> ***Policy T.3.6: Incorporating Design Feature for Alternative Travel.*** The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

> ***Policy T4.1: Incorporating Design Features for Alternative Travel.*** The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

> ***Policy T.4.2: Creating Transportation Incentives.*** Through cooperation with other agencies, the City should create incentives to encourage travelers to use alternative transportation options.

> ***Policy N.3.2: Encouraging Infill Development.*** In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City.

> ***Policy D3.2: Incorporating Parking Facilities.*** New parking facilities for cars and bicycles should be incorporated into the design of any project in a manner that encourages and promotes safe pedestrian activity.

Open Space, Conservation and Recreation Element (OSCAR)

The OSCAR Element of the Oakland General Plan includes policies that address GHG emissions reduction and adaptation to global climate change. Listed below are OSCAR policies that encourage the provision of open space, which increases vegetation area (trees, grass, landscaping, etc.) to effect cooler climate, reduce excessive solar gain, and absorb CO_2; OSCAR policies that encourage stormwater management, which relates to the maintenance of floodplains and infrastructure to accommodate potential increased storms and flooding; and OSCAR policies that encourage energy efficiency and use of alternative energy sources, which directly address reducing GHG emissions (City of Oakland, 1996).

> ***Policy CO-12.1: Land Use Patterns Which Promote Air Quality.*** Promote land use patterns and densities which help improve regional air quality conditions by: (a) minimizing dependence on single passenger autos; (b) promoting projects which minimize quick auto starts and stops, such as live-work development, mixed use development, and office development with ground floor retail space; (c) separating land uses which are sensitive to pollution from the sources of air pollution; and (d) supporting telecommuting, flexible work hours, and behavioral changes which reduce the percentage of people in Oakland who must drive to work on a daily basis.
>
> ***Policy CO-12.4: Design of Development to Minimize Air Quality Impacts.*** Require that development projects be designed in a manner which reduces potential adverse air quality impacts. This may include: (a) the use of vegetation and landscaping to absorb carbon monoxide and to buffer sensitive receptors; (b) the use of low-polluting energy sources and energy conservation measures; and (c) designs which encourage transit use and facilitate bicycle and pedestrian travel.
>
> ***Policy CO.13.2: Energy Efficiency.*** Support public information campaigns, energy audits, the use of energy-saving appliances and vehicles, and other efforts which help Oakland residents, businesses, and City operations become more energy efficient.
>
> ***Policy CO.13.3: Construction Methods and Materials.*** Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.
>
> ***Policy CO13.4: Alternative Energy Sources.*** Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

City of Oakland GHG Reduction Targets and 2030 Equitable Climate Action Plan

In October 2018, the Oakland City Council passed Resolution 87183 adopting an interim citywide GHG emissions reduction target of 56 percent below 2005 levels by the year 2030 to keep the City on track to meet its 2050 target. In July 2020, via Resolution 88267, Oakland City Council adopted the ECAP, a comprehensive plan to achieve the 2030 GHG reduction target and increase Oakland’s resilience to the impacts of the climate crisis - both through a deep equity lens (City of Oakland, 2020b). Alongside the 2030 ECAP, the City Council also adopted a goal to achieve community-wide carbon neutrality no later than 2045 (City of Oakland, 2020c). Achieving carbon neutrality will require complete decarbonization (ensuring that all mechanical systems run on clean electricity) of Oakland’s building and transportation sectors.

Oakland Green Building Ordinance

The City of Oakland adopted mandatory green building standards for private development projects on October 19, 2010, requiring all buildings or projects to comply with all requirements of the current California Building Energy Efficiency Standards and subsequent updates to those standards, as well as meet a variety of checklist requirements. These standards indirectly reduce GHGs through design features lowering building energy use. Most recently, the City updated the green building requirements for development projects with implementation of the 2022 Building Energy Efficiency Standards (Title 24, Part 6) code revisions, effective January 1, 2023 (City of Oakland, 2020d).

City of Oakland Municipal Code for Plug-in Electric Vehicle Charging Stations

In December 2016, the City of Oakland passed Ordinance 13408, which was designed to accelerate the installation of plug-in electric vehicle (PEV) charging stations to meet demand. At residential buildings, builders in Oakland are required to provide at least 2 full-circuit chargers in all parking lots less than 20 spaces, and in 10 percent of parking spaces in lots over 20 spaces (City of Oakland, 2017). In addition, inaccessible conduits for future expansion of PEV spaces must be installed at the remaining 90 percent of the total parking at multi-family residential buildings. The new requirements are designed to accelerate the installation of vehicle chargers to address demand.

City of Oakland Ordinance Requiring All-Electric Construction in Newly Constructed Buildings

On December 1, 2020, the City of Oakland adopted Ordinance 13632 prohibiting newly constructed buildings (both residential and commercial) from connecting to natural gas or propane (City of Oakland, 2020e). Newly constructed buildings must use a permanent supply of electricity as the source of energy for all space heating, water heating (including pools and spas), cooking appliances, and clothes drying appliances.

4.6.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the Project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Approach to Analysis

GHG Emissions

On February 16, 2022, BAAQMD published the Draft Justification Report for their new GHG thresholds (BAAQMD, 2022). These thresholds were finalized and adopted as part of BAAQMD's most recent update to its CEQA Air Quality Guidelines. These thresholds are designed to address the SB 32 GHG reduction target as well as the EO- B-55-18 carbon neutrality goal by 2045.

BAAQMD GHG thresholds for the analysis of a project's impact are as follows:

A. Projects must include, at a minimum, the following project design elements:

   1. Buildings

      a. The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development)

      b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State *CEQA Guidelines*.

   2. Transportation

      a. Achieve compliance with EV requirements in the most recently adopted version of CALGreen Tier 2

      b. Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent)

         OR

         Meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

         i. *Residential projects*: 15 percent below the existing VMT per capita
         ii. *Office projects*: 15 percent below the existing VMT per employee
         iii. *Retail projects*: no net increase in existing VMT

   OR

B. Be consistent with a local GHG Reduction Strategy that meets the criteria under the *CEQA Guidelines* section 15183.5(b).

BAAQMD has developed these thresholds of significance based on typical residential and commercial land use projects and they are applicable to projects such as the NHB Project. With regard to these thresholds, BAAQMD states the following:

> If a project is designed and built to incorporate these design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. If the project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

Thus, if a project is designed and built to incorporate the required design elements, the project would a have less-than-significant impact on climate change.

In summary, for purposes of this analysis, a significant GHG impact would be identified if the Project does not incorporate the following design elements set forth by BAAQMD:

1. No natural gas infrastructure is included in the Project;
2. The Project avoids wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State *CEQA Guidelines*;
3. The Project complies with EV requirements in the 2022 CALGreen Tier 2; and
4. The Project is consistent with the SB 743 target of at least 15 percent reduction in VMT per capita below regional average.

Consistency with Plans, Policies, and Regulations for GHG Reduction

GHG impacts are evaluated by assessing whether the Project would conflict with applicable GHG reduction strategies and local actions approved or adopted by CARB, ABAG, and UC. The 2022 Scoping Plan for Carbon Neutrality, ABAG's *Plan Bay Area 2040*, and plans and policies adopted by UC and UCSF all apply to the Project and all are intended to reduce GHG emissions to meet the Statewide targets set forth in AB 32, as amended by SB 32. Thus, the significance of the Project's GHG emissions is evaluated consistent with *CEQA Guidelines* Section 15064.4(b)(2) by considering whether the Project would conflict with these applicable plans, policies, regulations adopted for the purpose of reducing GHG emissions.

The analysis below applies to both the proposed Project and the Project Variant. There are no substantial differences between the proposed Project and the Project Variant in terms of the amount of building space to be constructed and the operations of the new hospital building and parking garage. Therefore, the construction and operational GHG impacts of the Project Variant are not analyzed separately and would be the same as those of the proposed Project.

Impact Analysis

Impact GHG-1: Construction and operation of the NHB Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. *(Less than Significant)*

Both direct and indirect GHG emissions would result from Project construction and operational activities.

Direct GHG emissions would be generated during construction and would include emissions from the combustion of fuel (e.g., gasoline and diesel) in construction equipment and vehicles. GHG emissions from construction were estimated using methodology consistent with the estimation of criteria air pollutant emissions in Section 4.1, *Air Quality*. Both OFFROAD2017 and EMFAC2021 models used for the estimation of off-road construction equipment and on-road vehicular emissions, respectively, provide GHG emissions factors in addition to criteria air pollutants. **Table 4.6-2** summarizes the GHG emissions by construction year for the Project.

TABLE 4.6-2
NHB PROJECT CONSTRUCTION GHG EMISSIONS

Construction Year	GHG Emissions (metric tons of CO_2e per year)
2024	440.8
2025	1,511.3
2026	988.6
2027	958.9
2028	1,059.5
2029	1,052.4
2030	263.6
2031	155.3
2032	141.8
2033	11.2
Project Total	6,583

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR.

Table 4.6-3 presents the net change in annual operational GHG emissions for the Project for the first operational year of 2031 when compared to existing conditions. Upon completion of construction, direct GHG emissions would be generated from area sources (such as landscaping equipment, maintenance-related architectural coatings, and use of consumer products), operation and testing of the proposed emergency generators and on-road motor vehicle trips generated by the Project that would include both passenger vehicle trips from patients, employees and visitors as well as heavy-duty delivery truck trips. There would be no increase in direct GHG emissions from energy use in buildings for space and water heating because all new construction is proposed as all-electric with no natural gas infrastructure. The demolition of existing structures currently using natural gas would reduce direct GHG emissions when compared to existing conditions.

TABLE 4.6-3
NET CHANGE IN ANNUAL OPERATIONAL GHG EMISSIONS: YEAR 2031 WITH NHB PROJECT

Operational Emission Source	CO_2e Emissions (metric tons year)
Mobile Sources[a]	1,384
Building Energy Use - Electricity[b]	451
Building Energy Use - Natural Gas[c]	-1,547
Area Sources	6
Emergency Generators[d]	467
EV Charging [e]	3
Water and Wastewater	55
Solid Waste	756
PROJECT TOTAL	1,575

TABLE 4.6-3
NET CHANGE IN ANNUAL OPERATIONAL GHG EMISSIONS: YEAR 2031 WITH NHB PROJECT

Operational Emission Source	CO_2e Emissions (metric tons year)

NOTE:

a. Emissions estimated based on net change in VMT with the Project over existing conditions. Existing and Project VMT estimated using trip generation numbers provided by the traffic consultant and default trip lengths in CalEEMod.
b. GHG emissions from electricity use would be eliminated when BCH Oakland transitions to zero-carbon electricity.
c. GHG emissions eliminated from natural gas combustion in existing buildings proposed for demolition under the Project.
d. GHG emissions from the three new generators proposed by the Project assuming 50 hours of non-emergency use for testing and maintenance and 100 hours of non-emergency use.
e. Electricity use for EV charging for 40 EVSE with an average charge of 4.4 kWh per charger per day.

SOURCE: Table compiled by ESA in 2023 based on Appendix AIR.

Indirect operational GHG emissions would be generated from the increase in electricity use associated with building energy use along with water and wastewater treatment and conveyance and disposal of solid waste generated. In keeping with the UC *Policy on Sustainable Practices* to switch to 100 percent clean electricity by 2025, UCSF BCH Oakland intends to purchase zero carbon electricity, either from the UC Regents through the Direct Access Program, or from an alternative provider such as East Bay Community Energy (EBCE). The UC Regents program is referred to as the UC Clean Power Program and assists UC campuses and medical centers in achieving carbon neutrality in indirect emissions through the purchase of carbon-free electricity. As of 2019, the UC Clean Power Program became 100 percent carbon free. UCSF BCH Oakland's purchase of zero carbon electricity would eliminate CO_2 emissions from electricity use from both existing and Project buildings. However, as it is unclear when this transition would take place, the emissions estimates associated with electricity use presented in Table 4.6-3 conservatively assume that the existing electricity provider, PG&E would continue to provide electricity to the campus in 2031. The estimates also assume 2021 GHG intensity rates for PG&E electricity for 2031. In reality, compliance with SB 100 would require PG&E to progressively move towards more renewable and lower carbon energy sources with the ultimate goal of reaching zero carbon electricity by 2045. Therefore, GHG intensity rates for PG&E electricity in 2031 would be lower than those used to estimate the emissions presented in Table 4.6-3.

The emissions inventory in Table 4.6-3 is provided for informational purposes only and is not used in the evaluation of significance of impacts as the BAAQMD does not provide mass emissions thresholds for GHG. As discussed above under *Approach to Analysis*, the evaluation of impacts with respect to the CEQA Appendix G criteria is conducted using BAAQMD's project-level GHG thresholds.

For the evaluation of a project's GHG impacts, BAAQMD's recommended GHG thresholds address the two main direct sources of GHG emissions in land use development projects: building energy use and motor vehicle trips. Each of the BAAQMD thresholds and the Project's consistency are discussed below.

Compliance with No Natural Gas Infrastructure Requirement

As detailed in the Project Description, consistent with Green Building Standards for new buildings in the UC *Policy on Sustainable Practices*, the new hospital building would have no natural gas infrastructure and all new facilities would be entirely powered by electricity to meet the building energy use needs. Therefore, the Project would comply with BAAQMD's first GHG threshold related to building design.

Avoid Wasteful, Inefficient, or Unnecessary Electrical Usage

The Project is being designed and developed to minimize its environmental impact and to support the health of its occupants and the well-being of the local community with a focus on reducing air pollutant and GHG emissions and water use, and conserving energy.

As discussed earlier, consistent with the Green Building Standards for new buildings in the UC *Policy on Sustainable Practices*, the Project is designed to have no new natural gas infrastructure and all new facilities would be powered by electricity. This would result in an increase in electricity use; however, as these standards for new buildings have been adopted to facilitate the Project's and the region's compliance with the State's GHG reduction goals, the increase in electricity use would not be considered wasteful, inefficient or unnecessary. As an acute care facility, the new hospital building is required to outperform the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2010 baseline energy code by at least 30 percent and would target to outperform the code by at least 40 percent. In addition, the Project would comply with the applicable UC *Policy on Sustainable Practices* and would pursue a minimum level of LEED Gold Certification for the new hospital building and in general would meet and exceed CALGreen mandatory standards and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development."

The Project includes a parking structure with EV charging infrastructure provided in compliance with 2022 CALGreen Tier 2 requirements (see below for details). Electric vehicles play an important role in California's efforts to reach its climate and air quality goals. These vehicles, which produce zero tailpipe emissions, also play a critical role in reaching the state's goal of getting 1.5 million zero-emission vehicles on California roads by 2025. Therefore, although the provision of EV charging infrastructure at the site would increase electricity use, this increase would be consistent with the State's GHG reduction goals and would not be considered wasteful or inefficient. Further, UCSF BCH Oakland intends to purchase net zero carbon electricity, either from the UC Clean Power Program, or from an alternative provider such as EBCE, a CCA. Until that transition happens, the Project would be served by Pacific Gas & Electricity (PG&E) and Calpine Power that are subject to increasingly stringent requirements of SB 100 to include carbon-free energy from renewable sources in their power mix. Although the source of power does not affect the amount of electricity used, the purpose of this requirement is to reduce electricity-related GHG emissions, which utility providers such as PG&E and EBCE would lessen or avoid independent of the amount of electricity consumed by complying with SB 100 requirements. Therefore, the Project would avoid wasteful, inefficient, or unnecessary electrical usage and would comply with BAAQMD's second GHG threshold related to energy use. The Project's impact with respect to wasteful, inefficient, or unnecessary use of energy is also discussed under Impact ENE-1 in Section 4.4, *Energy*.

Compliance with CALGreen Tier 2 EV Charging Requirements

The Project includes a parking structure with up to 270 vehicle parking stalls, including stalls with electric vehicle charging stations. Electric Vehicle charging infrastructure provided will comply with 2022 CALGreen Tier 2 requirements (which are voluntary) and assuming that 270 parking stalls are provided, the Project would include 122 EV capable spaces,[54] of which 40 spaces would include Electric Vehicle Supply Equipment (EVSE).[55] Therefore, the Project would comply with BAAQMD's third GHG threshold related to EV charging infrastructure.

Consistency with SB 743 VMT Reduction Target of 15 percent below the regional average

As detailed earlier, with the adoption of SB 743, the State of California changed the method of traffic analysis required through CEQA for publicly- and privately-initiated projects. SB 743 requires project reviews under CEQA to evaluate the transportation impacts of new developments in terms of VMT, rather than on-road congestion and automobile delay. Based on the County's travel demand forecasting model, the analysis in Section 4.11, *Transportation*, estimates the VMT per capita generated by the Project to be 11.6 miles per capita. The regional average is estimated to be 18.1 miles per capita. The VMT generated per capita for the Project is 36 percent below the regional average VMT per capita. Therefore, the Project outperforms the 15 percent below regional average requirement stipulated in BAAQMD's fourth GHG threshold related to VMT.

As the Project complies with all four BAAQMD thresholds for evaluating the significance of the Project's GHG emissions, the Project would result in a *less than significant* impact related to GHG emissions.

Mitigation: None required.

Impact GHG-2: Construction and operation of the NHB Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. (*Less than Significant*)

CARB 2022 Scoping Plan and AB 1279

Appendix D of the 2022 Scoping Plan identifies the most effective GHG reduction actions at the local level to help ensure that local climate efforts align with the State's climate goals. It identifies three priority areas that address the state's largest sources of emissions that local governments have authority or influence over. These include:

1. Transportation electrification
2. VMT reduction

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[54] An EV capable space is a vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

[55] EVSE includes the 208/240 Volt 40-ampere branch circuit, the electric vehicle charging connectors, attachment plugs, and all other fittings, devices, power outlets, or apparatus installed specifically for the purpose of transferring energy between the premises and the electric vehicle. There are multiple types of 240 Volt receptacles, depending on the rated amperage; the 40-ampere rated receptacle required by the CALGreen Code is a NEMA 14-50R.

3. Building decarbonization

By prioritizing climate action in these three priority areas, local governments and entities such as UCSF can address the largest sources of GHGs within their jurisdiction. The Project would, either as part of the design, or by its location in an area well served by transit services, reduce GHG emissions in all three priority areas. The Project would provide EV charging infrastructure consistent with voluntary CALGreen Tier 2 standards to encourage use of electric vehicles. Proximity to transit services would result in Project-related VMT per employee that is more than 15 percent below the regional average. All new construction proposed as part of the Project would be all-electric with no new natural gas infrastructure thereby eliminating direct GHG emissions from the Project and reducing direct GHG emissions from the campus. Further, consistent with the UC *Policy on Sustainable Practices*, UCSF BCH Oakland would purchase net zero carbon electricity, either from the UC Clean Power Program, or from an alternative provider and eliminate GHG emissions from electricity use from the Project and existing uses. Therefore, the Project would be consistent with the core strategies of the 2022 Scoping Plan.

Plan Bay Area 2040

The Project would also be consistent with *Plan Bay Area 2040*, which includes the Regional Transportation Plan, and was adopted as the Bay Area's Sustainable Communities Strategy pursuant to California Senate Bill 375. *Plan Bay Area 2040*'s core strategy is to encourage growth in existing communities along the existing transportation network, focusing new development in PDAs and TPAs within urbanized centers where there is more public transit and other mobility options available to reduce driving by cars and light trucks. In addition to significant transit and roadway performance investments to encourage focused growth, *Plan Bay Area 2040* directs funding to neighborhood active transportation and complete streets projects, climate initiatives, lifeline transportation and access initiatives, pedestrian and bicycle safety programs, and PDA planning. The Project is consistent with *Plan Bay Area 2040* by virtue of being located within a TPA, which is defined as an area within one-half mile of an existing or planned major transit stop (Public Resources Code Section 21099(a)(7)), where "major transit stop" is defined as a site containing any of the following: an existing rail or bus rapid transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (Public Resources Code Section 21064.3). The UCSF Oakland BCH campus site is within one-half mile of the MacArthur BART Station and provides free shuttle service to and from the station.

Additionally, UCSF BCH Oakland's existing TDM strategies would continue to be implemented with the Project and updated as needed. The TDM strategies serve to encourage more employees, visitors, and patients to shift from driving to other modes of travel through programs that encourage telecommuting and telehealth; encourage non-automobile modes of travel to the campus, such as discounted transit tickets and preferential carpool parking; and disincentivize travel by automobile by effectively managing parking permits and parking fees.

Therefore, the Project would be consistent with the core strategies of both CARB's 2022 Scoping Plan and *Plan Bay Area 2040* and thus would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. This impact would be less than significant.

UCSF LRDP and GHGRS

UCSF's 2014 LRDP included a GHGRS to ensure that the LRDP was implemented in alignment with the UC *Policy on Sustainable Practices*, and to fulfill the GHG reduction requirements of AB 32. After the adoption of the 2014 LRDP by the Regents, the University of California Office of the President further identified a UC policy goal to reach climate neutrality from Scopes 1 and 2 sources by 2025, which was reflected in an update to the GHGRS in 2017. The 2017 GHGRS was further updated in July 2020 and approved by UCSF in January 2021 that incorporated construction and operations emissions from development not included in the 2014 LRDP at the Parnassus Heights campus site. In addition, the updated GHGRS addressed UCSF's achievement of goals set forth in the adopted Carbon Neutrality Initiative (CNI), which has goals more stringent than the statewide target of achieving 80 percent below 1990 emission levels by 2050. In compliance with the UC *Policy on Sustainable Practices*, as well as the CNI, UCSF currently prepares annual inventories of GHG emissions for Scope 1, 2, and 3 emissions to monitor GHG reduction progress.

The UCSF BCH Oakland campus site is not included in the UCSF 2014 LRDP at the present time, and consequently, it is not subject to the LRDP's campus-wide or site-specific planning objectives. However, as the UCSF BCH Oakland campus site is controlled by the University, UCSF proposes to amend the 2014 LRDP to include the UCSF BCH Oakland campus site. Approval of an amendment of the 2014 LRDP will be requested from the UC Regents at the same time that the Project is presented to the Regents for approval. An update to the GHGRS or a separate GHGRS for the BCH Oakland campus will also be prepared prior to 2026 pursuant to the UC *Policy on Sustainable Practices*. Therefore, a consistency analysis with the GHGRS is not warranted until such time that the GHGRS is amended to include the UCSF BCH Oakland campus site.

Mitigation: None required.

Cumulative Impacts

Climate change is the cumulative effect of all natural and anthropogenic sources of GHGs accumulated on a global scale. The GHG emissions from an individual project, even a very large development project, would not individually generate sufficient GHG emissions to measurably influence global climate change, and thus the assessment of the Project's GHG emissions impacts presented above is inherently an analysis of its cumulative impact.

Both BAAQMD and the California Air Pollution Control Officers Association (CAPCOA) consider GHG impacts to be exclusively cumulative impacts, in that no single project could, by itself, result in a substantial change in climate (BAAQMD, 2023; CAPCOA, 2008). Therefore, the evaluation of the Project's GHG impacts presented above under Impacts GHG-1 and GHG-2 analyzes whether the Project would make a considerable contribution to cumulative climate change effects. As detailed above, the Project would result in less-than-significant impacts with respect to generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment and consistency with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions. As such, the Project's contribution to the cumulative GHG impact would not be cumulatively considerable. Cumulative GHG impacts would be less than significant.

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4.7 Hazards and Hazardous Materials

This section describes and evaluates the potential for construction and operation of the UCSF BCH Project to result in significant impacts related to hazards and hazardous materials. The section contains: a description of the existing land uses of the Project site and surrounding areas as they pertain to existing hazardous materials use; a discussion of handling (including transport and disposal) and storage of hazardous materials, and emergency response planning at the campus site; a summary of the federal, State, and local laws and regulations governing these activities; an analysis of the potential impacts related to hazards and hazardous materials, and emergency response planning associated with the implementation of the Project, as well as identification of potentially feasible measures that could mitigate significant impacts if needed.

The analysis of hazardous materials included in this section was developed based on current publicly available information from databases maintained by the State Water Resources Control Board (SWRCB), California Department of Toxic Substances Control (DTSC), and California Department of Forestry and Fire Protection (Calfire), as well as a Phase I Environmental Site Assessment (ESA) previously prepared for the Project site (The Source Group, 2008). Although the Phase I ESA was prepared in 2008, the conditions at and surrounding the Project site have not substantially changed and thus the Phase I ESA retains its informational value.

4.7.1 Environmental Setting

The study area for evaluation of hazards and hazardous materials impacts includes the campus site and surrounding areas. The evaluation uses an environmental database search that extends approximately 0.25 miles from the campus site. Sites beyond the 0.25-mile radius area would have a lesser chance of affecting subsurface materials beneath the campus site because most releases of hazardous materials tend to be localized.

In addition, a radius of up to 0.25 miles from the Project site is considered relative to proximity to schools and the radius of up to 2 miles is similarly considered relative to proximity to airports, both in accordance with the *CEQA Guidelines*.

Definitions and Background

Hazardous Materials

A hazardous material is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (California Health and Safety Code Chapter 6.95, Section 25501(o)). The term “hazardous materials” refers to both hazardous substances and hazardous wastes. Under federal and State laws, any material, including wastes, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases).

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been spent, discarded, discharged, spilled, contaminated, or are being stored until they can be disposed of properly (Title 22 California Code of Regulations [CCR] Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific criteria established in Sections 66261.20 through 66261.24 of the CCR Title 22. Hazardous substances are regulated by multiple agencies, as described in Section 4.7.2, *Regulatory Framework* below, and cleanup requirements of hazardous material releases are determined on a case-by-case basis according to the agency (e.g., DTSC or SWRCB) with lead jurisdiction over a contaminated site.

Potential Receptors/Exposure

The sensitivity of potential receptors in the areas of known or potential hazardous materials contamination is dependent on several factors, the primary factor being the potential pathway for human exposure. Exposure pathways include external exposure, inhalation, and ingestion of contaminated soil, air, water, or food. The magnitude, frequency, and duration of human exposure can cause a variety of health effects, from short-term acute symptoms to long-term chronic effects. Potential health effects from exposure can be evaluated in a health risk assessment. The principal elements of health risk assessments typically include:

- Evaluation of the fate and transport processes for hazardous materials at a given site;
- Identification of potential exposure pathways;
- Identification of potential exposure scenarios;
- Calculation of representative chemical concentrations; and
- Estimation of potential chemical uptake.

Sensitive Receptors

On the UCSF BCH Oakland campus site, existing sensitive receptors include the hospital facilities and clinical uses. UCSF BCH Oakland also maintains the Family House (16 residential units) at 5222 Dover Street, which provides short-term stay for UCSF BCH Oakland patient families. Off-campus receptors (residences) are located to the north, west and south of the campus site boundaries. There is one public high school and two private childcare centers located within one-quarter mile of the Project site (Oakland International High School, at 4521 Webster Street, approximately 0.24 miles southeast of the Project site; LaVonda's Crayon Box, at 825 52nd Street 0.1 mile west of the Project site, and Mechita Daycare at 4812 Shattuck Avenue, about 0.14 miles to the east, respectively). Several other schools and childcare facilities are located within one-half mile of the Project site.

Hazardous Building Materials Associated with Demolition and Renovation

The UCSF BCH Oakland campus site contains buildings of varying ages, ranging from the late 1920s to recent construction. As a result, the age of some of the existing buildings and structures increases the likelihood for building materials to contain hazardous components (e.g., lead-based paint [LBP], asbestos-containing materials [ACMs], mercury, and polychlorinated biphenyls [PCBs]).

Lead and Lead-Based Paint (LBP)

Among its numerous uses and sources, lead can be found in paint, water pipes, solder in plumbing systems, and in soils around buildings and structures painted with LBP. Old peeling paint can contaminate near surface soil, and exposure to residual lead can have adverse health effects, especially in children. LBP was phased out in the United States beginning with the passage of the Lead-Based Paint Poisoning Prevention Act in 1971. Prior to the US Environmental Protection Agency (USEPA) ban in 1978, LBP was commonly used on interior and exterior surfaces of buildings. Structures built prior to 1978 may have LBP and some paints manufactured after 1978 for industrial uses legally contain more than 0.06 percent lead. Therefore, LBP may be present in some of the structures to be demolished or renovated. Pathways of exposure to lead include inhalation, ingestion, dermal absorption, or absorption from retained/embedded leaded foreign body. Exposure to lead can result in severe health effects; children are particularly susceptible to potential lead-related health problems because it is easily absorbed into developing systems and organs.

Asbestos

Asbestos, a naturally occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were terminated due to liability concerns in the late 1970s (USEPA, 2019). From 1973 through 1990, several laws were passed banning the manufacture and use of ACMs. Some materials are still allowed to contain asbestos. The demolition of structures with ACMs can result in airborne fibers. Inhalation of the tiny asbestos fibers can lead to lung disease. Structures that predate 1981 and structural materials installed before 1981 are presumed to potentially contain asbestos. Some of the structures to be demolished or renovated as part of the Project predate 1981 and could contain ACMs. Because it was widely used prior to the discovery of its health effects, asbestos can be found in a variety of building materials and components such as insulation, walls and ceilings, floor tiles, and pipe insulation. Friable (easily crumbled) materials are particularly hazardous because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Non-friable asbestos is generally bound to other materials such that it does not become airborne under normal conditions. Non-friable asbestos and encapsulated friable asbestos do not pose substantial health risks. Asbestos exposure is a human respiratory hazard. Asbestos-related health problems include lung cancer and asbestosis.

Mercury

Spent fluorescent light tubes commonly contain mercury vapors, the exposure to which can have both long-term (e.g., anxiety, loss of appetite, fatigue, changes in vision or hearing) and/or short-term (e.g., sore throat, shortness of breath, chest pain, headache, vision problems) health effects. In February 2004, regulations took effect in California that classified all fluorescent lamps and tubes as hazardous waste. When these lamps or tubes are broken, mercury is released to the environment and can become airborne. When inhaled, mercury vapors can be absorbed through the lungs and into the bloodstream. Released mercury that is not vaporized can also be washed by rainwater and into waterways. Mercury switches, which contain small amounts of mercury, may also be present in some of the buildings to be demolished or renovated as part of the Project.

Polychlorinated Biphenyls (PCBs)

PCBs are organic oils that were formerly used primarily as insulators in many types of electrical equipment such as transformers and capacitors. After PCBs were determined to be carcinogenic in the mid-to-late 1970s, the USEPA banned PCB use in most new equipment and began a program to phase out certain existing PCB-containing equipment (USEPA, 2019). Fluorescent lighting ballasts manufactured after January 1, 1978, do not contain PCBs and are required to have a label clearly stating that PCBs are not present in the unit. PCBs are highly persistent in the environment, and exposure to PCBs has been demonstrated to cause cancer, as well as a variety of other adverse health effects. Occupational exposure to PCBs occurs mainly through inhalation and dermal contact routes. PCBs may be present in some of the buildings to be demolished or renovated as part of the Project.

Soil and Groundwater Contamination

Medical offices, research facilities and hospitals as well as many commercial and light industrial businesses use materials and generate wastes that are considered hazardous by federal and State standards. Such businesses and practices are required to contain, manage, and transport their hazardous materials in conformance with established federal and State regulations to ensure hazardous materials that can become a health hazard are not released to subsurface soils and groundwater or create exposure risks to the public.

Underground storage tanks (USTs), in particular, are a common contamination source in urban areas. Until the mid-1980s, most USTs were made of single-walled bare steel, which can corrode over time and result in leakage. Faulty installation or maintenance procedures can also lead to UST leakage, as well as to potential releases associated with spills. Recently revised UST regulations have substantially reduced the incidents of leakage and consequential soil and groundwater contamination from new UST systems.

Campus Site Use and Disposal of Hazardous Materials

UCSF BCH Oakland offers a full-service laboratory, diagnostic imaging services, pharmacy, medical/surgical and 24-hour emergency services. The Hematology/Oncology department maintains an inpatient unit as well as day-use transfusion and chemotherapy unit in UCSF BCH Oakland's Outpatient Center. UCSF BCH Oakland is a small quantity generator (SQG) for hazardous waste (UCSF BCH Oakland, 2023a).

Current campus site operations include the storage, use, and disposal of variable quantities of hazardous materials. Hazardous materials used at the campus site include general waste (universal waste), biohazardous materials, pharmaceutical waste, chemical materials and radioactive materials. **Table 4.7-1** presents a list of representative hazardous materials stored and used at the campus site.

TABLE 4.7-1
REPRESENTATIVE HAZARDOUS MATERIALS USED AT UCSF BCH OAKLAND CAMPUS SITE

Substance	Examples	Uses	Hazards
Solvents	Alcohols, ether, ethers, toluenes, and hexanes	Lab chemicals, paint removers, degreasers, and pesticides	Flammable, some explosive; toxic; damage to skin and respiratory tract; systematic damage to liver, kidneys, and nervous system.
Oxidizers	Hydrogen peroxide, perchloric acid, nitric acid, silver nitrate, potassium dicholorate, and ammonium persulfate	Hazardous medications, lab chemicals	Stimulates combustion of organic materials
Compressed Gases	Carbon dioxide, nitrogen, acetylene, oxygen, compressed air, refrigerants and miscellaneous small quantities and mixtures.	Hazardous medical gases, labs, facility systems, welding, and other campus shops	Flammable, some explosive (with potential for propellant effect, and some toxic)
Corrosives	Hydrochloric, nitric, sulfuric, and acetic acid, sodium hydroxide, and ammonium hydroxide	Hazardous medications, lab chemicals, cleaning agents, paint and paint thinners, Freon refrigerants, pesticides, and herbicides	Damage to skin and respiratory tract; some react to produce fire, explosion, or toxic fumes
Reactives	Alkyl metals (sodium potassium), and hydrides	Lab chemicals	Explosive (with or without detonation); toxic fumes; and explodes with exposure to water
Toxics	Chemotherapy drugs and bulk wastes, RCRA hazardous drugs and wastes, heavy metals, chlorinated hydrocarbons, arsenic, and cyanide compounds	Hazardous medications, lab chemicals, pesticides, photographic chemicals, and paints or dyes	Capable of causing acute or chronic systemic damage or death, cancer, infertility, and birth defects
Biohazards	Waste containing blood, bodily fluids, used sharps, pharmaceutical waste, trace chemotherapy drug waste, and other potentially infectious materials, bacteria and viruses	Regulated medical waste from the hospital and clinics and research laboratories	Capable of producing diseases
Radioactivity	Radionuclides (radioisotopes)	Labs and medical center	Capable of causing acute or chronic systematic damage, cancer, infertility, and birth defects
Fuels	Gasoline, diesel, and waste oil	Campus maintenance (grounds and building) and vehicles	Flammable, some explosive; toxic; damage to skin and respiratory tract; and produces fire/explosions

SOURCE: UCSF, 2023

Table 4.7-2 summarizes the quantities of different hazardous wastes generated at the UCSF BCH Oakland campus site that were disposed of in 2022. Batteries are a type of hazardous waste called universal waste, which is hazardous waste that has less stringent requirements for management and disposal.

TABLE 4.7-2
HAZARDOUS WASTES FROM UCSF BCH OAKLAND CAMPUS SITE DISPOSED OF IN 2022

Waste Stream	Volume (Pounds)
Batteries (Universal Waste)	5,439
Hazardous Chemicals	11,678 (including waste oil)
Radioactive Waste	None
Medical Waste Treatment	47,256
Pathological/Trace Chemotherapy Waste	5,161
Pharmaceutical Waste (including Sharps Waste)	60,020
	129,554

SOURCE: UCSF, 2023

Biohazardous materials are materials that harbor a biological agent capable of causing diseases in humans, animals, or plants. Biohazardous materials include National Institutes of Health (NIH)/Centers for Disease Control and Prevention (CDC) Risk 2 and Risk 3 Group contaminated material; materials contaminated within Risk Group 1 recombinant deoxyribonucleic acid (DNA), blood, body fluids containing blood, human and animal tissues, and animal carcasses. Medical waste is a general term that includes both biohazardous and sharps waste (e.g., needles, syringes, broken glass, etc.) (California Health and Safety Code, Section 117690).

Medical waste includes pathological waste (e.g., tissues, surgical specimens and body parts), and chemotherapy waste; waste such as gloves, towels, empty bags; and intravenous tubing that contains or is contaminated with chemotherapeutic agents. Trace chemotherapeutic waste is a by-product of oncology patient care and consists of materials that previously contained or had contact with chemotherapeutic agents. Pharmaceutical waste can include, but is not limited to, partially used or expired prescription or over-the-counter medications, and materials such as intravenous bags and tubing, narcotic patches, carpujets, and tubexes.

Chemical waste can include, but is not limited to, hazardous pharmaceutical waste, chemical waste generated from clinical and pathology laboratories, expired cleaning solutions and disinfectants, and waste oil from facilities operations.

Radioactive waste is defined as any material that has come in contact with radioactivity and may be contaminated. Radioactive atoms are called “radionuclides” or “radioisotopes.” Radiopharmaceuticals (radioisotopes or drugs containing radioisotopes) are used in medicine and research, and limited types and quantities of radioisotopes are also used in research laboratories. Radioactive waste can include, but is not limited to, dry waste, liquid waste, vials, animal carcasses, and biohazardous waste.

The main hospital houses patient care rooms, laboratories, a generator room, a steam plant, electrical rooms, offices, and a cafeteria/ kitchen. Each floor contains janitorial storage closets housing general cleaning supplies. A loading dock and dumpster area are located outside of the main hospital building on the southwest corner (The Source Group, 2008).

The existing hospital maintains a biohazard waste storage area near the loading dock. Biohazardous wastes generated at the hospital are heated in an outdoor autoclave prior to disposal. Autoclaved needles are stored in a separate 55-gallon labeled trash bin and other autoclaved wastes are stored in the general refuse dumpster prior to off-site disposal. A number of common hazardous materials are stored in storage vans and a paint shed near the loading dock. These include paint and other materials used for construction and maintenance, and lubricants and other chemicals used for maintenance of onsite electrical generators. According to the Phase 1 ESA, numerous storage sheds were observed beneath the helistop used for storing construction materials. Items stored included metal debris, small quantities of paint, and other miscellaneous construction materials. In addition, two 55-gallon drums were observed beneath the helistop structure in the construction materials storage area. The contents of the drums are unknown but both drums were labeled as hazardous (The Source Group, 2008).

The Project site contains one 8,000-gallon diesel fuel UST located south of the loading dock that serves the backup generators in emergency situations when normal electrical services are interrupted. This storage tank does not meet current code requirements and must be decommissioned by December 31, 2025. Separate from the NHB Project, in September 2023, UCSF approved the construction of a replacement 12,000-gallon above ground storage tank in the southeastern portion of the Project site. This will occur in early 2024 for completion by early 2025, and will remove this UST before the compliance deadline.

The Phase I ESA reported that based on interviews with BCH Oakland facilities staff indicated that a UST was formerly located near the southern edge of the B/C Wing, and north of the existing large magnolia tree. The contents and size of the UST were unknown and to the best of staff knowledge, the UST has been removed (The Source Group, 2008).

Hazardous Materials Site Records

The Cortese List, compiled pursuant to Government Code Section 65962.5 and referenced in Public Resources Code Section 21092.6, includes listings of hazardous materials release sites from the DTSC EnviroStor database, leaking underground storage tank sites from the SWRCB GeoTracker database, solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit, active cleanup and desist orders and cleanup and abatement orders from the San Francisco RWQCB, and hazardous waste facilities subject to corrective action by DTSC.

Campus Site

The portion of the UCSF BCH Oakland campus site north of 52nd Street has been the subject of prior subsurface hazardous materials investigation. In June 2017, UCSF BCH Oakland entered into a Voluntary Remedial Action Agreement (VRAA) with the overseeing regulatory agency - Alameda Department of Environmental Health (ACDEH), and a Cleanup Program Case was opened at that time, in conjunction with redevelopment of that site that included construction of the OPC 2 building. The SWRCB GeoTracker website indicates the case was opened due to the presence of petroleum hydrocarbons in the motor oil range (TPHmo), diesel range (TPHd), and gasoline range (TPHg) in soil samples and the presence of tetrachloroethene (PCE) and associated breakdown products, specifically trichloroethene (TCE), reported as present in groundwater at that site. Subsurface investigations have been conducted at the site since 2015 and included installation and monitoring of eight groundwater wells to identify the source of the contamination. Historical site uses do not include the use of PCE, and PCE has not been detected in site soils. The data indicates the PCE impacts observed in groundwater do not originate from the site, and the source of contamination is located up gradient and off site, from a location east of the property. Site investigation results demonstrate that UCSF BCH Oakland is not considered the responsible party of the observed PCE in groundwater. Accordingly, the ACDEH has designated the site as eligible for closure, and the case is going through the process of being closed for UCSF (SWRCB, 2023).

The last groundwater monitoring event for the campus site was conducted on April 19, 2021, and sampled the eight groundwater monitoring wells located across 52nd Street north of the NHB Project site (Ninyo & Moore 2021). The results indicated that PCE, TCE, chloroform, and toluene were detected in groundwater at that time. The monitoring report compared the results to RWQCB Environmental Screening Levels (ESLs). ESLs are risk-based guidelines used to evaluate the potential health and environmental risks associated with chemicals found in soil, groundwater, and soil gas. The monitoring report results are summarized below.

- PCE was detected in seven wells at concentrations ranging from 3.6 to 330 micrograms per liter (µg/L). These concentrations exceeded the Tier 1 ESL of 0.64 µg/L, which is based on vapor intrusion human health risk levels.
- TCE was detected in three wells at concentrations ranging from 0.51 to 2.6 µg/L. Two of the detections exceeded the Tier 1 ESL of 1.2 µg/L, which is based on vapor intrusion human health risk levels.
- Chloroform was detected in one well at a concentration of 1.0 µg/L. This concentration exceeds the Tier 1 ESL, which is based on vapor intrusion human health risk levels.
- Toluene was detected in one well at a concentration of 0.57 µg/L. This concentration does not exceed any ESLs.
- No other VOCs were detected in groundwater during this 2021 sampling event.

As part of the case closure process, the campus site groundwater monitoring wells north of 52nd Street were destroyed under permit on January 17th and 18th, 2023, as directed by ACDEH (Ninyo & Moore, 2023). It is important to note that ACDEH is closing the case only relative to UCSF BCH Oakland because the ACDEH has concluded that UCSF BCH Oakland is not the responsible party for the residual contamination detected in the groundwater monitoring wells. This does not mean that there are no residual chemicals in groundwater beneath the campus site. Given that the 2021 sampling event is relatively recent and that PCE and TCE are recalcitrant chemicals (i.e., they degrade very slowly), PCE and TCE are expected to be present in groundwater beneath the campus site, including the Project site.

On the portion of the campus site west of MLK Jr. Way that contains the existing Annex Employee Parking Lot, a release of gasoline affecting groundwater was discovered in 1990 during the removal of three USTs (The Source Group, 2008). The case closure request report (West Environmental Services, 2015) provided the case closure evaluation and justification summarized as follows:

- The sources of contamination (i.e., the USTs and contaminated soil) have been removed.
- In five soil samples collected from adjacent to the former USTs, there was only one sample with 7.5 milligrams per kilogram (mg/kg) of diesel and 2.4 mg/kg of gasoline. These concentrations are within the RWQCB low-threat closure criteria. All results for the other samples were below detection limits.
- No floating petroleum product (i.e., fuel or motor oil) was observed floating on the water surface in the groundwater monitoring wells.
- No petroleum hydrocarbons (i.e., fuel or motor oil) were detected in the groundwater monitoring well adjacent to the former USTs. Gasoline was detected in three groundwater monitoring wells located downgradient of the former USTs at concentrations ranging from 134 to 353 ug/L. This range of concentrations is within the RWQCB low-threat closure criteria.

Based on the soil and groundwater investigation at that site, distance, and relative groundwater flow direction, the overseeing regulatory agency, the ACDEH, concluded that the residual level of chemicals at this site do not pose a risk to people or the environment. This case was closed as of October 2018 with no further action required (SWRCB, 2018).

Surrounding Area

The Phase I ESA identified several nearby sites of concern as listed below. The GeoTracker dataset was checked as part of this EIR; several addresses and site numbers cited in the Phase I ESA were in error and have been corrected to match the GeoTracker database as noted below.

- Former PG&E Station D located about 650 feet east of the campus site, on the corner of 51st Street and Shattuck Avenue
- Former Jin H. Kang and current Arco Station #6148 (incorrectly listed as #01468) located about 550 feet east of the campus site at 5131 Shattuck Avenue
- Former Chevron Station located about 1,000 feet east of the campus site at 5101 Telegraph Avenue
- Berkeley Land Company (formerly One-Hour Martinizing) located about 1,150 feet east of the campus site at 5100 Telegraph Avenue

With the exception of the Berkeley Land Company, all of the above listed sites are former leaking fuel and/or motor oil sites. The regulatory cases for these fuel and motor oil releases have been closed indicating that the overseeing regulatory agency concluded that the sites do not pose a risk to people or the environment. The Arco Station was granted regulatory case closure in June 2011 (SWRCB, 2011). The directions of groundwater flow ranged from southwest to west for the various sites, all of which would be toward the campus site.

The Berkeley Land Company (formerly One-Hour Martinizing) is a former dry-cleaning site that had a release of PCE, a dry-cleaning solvent, along with gasoline from a leaking UST. The regulatory case for this dry-cleaning solvent and gasoline release has been closed indicating that the overseeing regulatory agency concluded that this site does not pose a risk to people or the environment (RWQCB, 2019).

Naturally Occurring Asbestos

Alameda County is among the identified counties where ultramafic bedrock materials are present and have the potential for the release of naturally occurring asbestos fibers. According to statewide mapping, the campus site appears to be located outside of any mapped ultramafic bedrock units in Oakland (CDMG, 2000) or where reported asbestos occurrences have been mapped (USGS, 2011).

According to a previous geotechnical report prepared for the Project site, the bedrock underlying the Project site has the potential of containing asbestos fibers; however, bedrock is anticipated to be at a depth of about 300 feet below grade, and exploration conducted in support of the geotechnical report did not expose alluvium derived from ultramafic material. Consequently, the potential for naturally occurring asbestos hazards at the Project site is low (Fugro West, 2009).

Airports

There are no public use airports within 2 miles of the Project site. Oakland International Airport and San Francisco International Airport are approximately 7 and 15 miles from the campus site, respectively.

Wildland Fire

A wildland fire is any non-structure fire that occurs in vegetation or natural fuels. According to CAL FIRE's Fire Hazard Severity Zone Map of Alameda County, the Project site and surrounding area are not located within or near a State Responsibility Area or lands classified as a very high fire severity zone, and the campus site is considered not susceptible to wildfires (Calfire, 2008).

4.7.2 Regulatory Framework

Federal

The primary federal agencies with responsibility for hazards and hazardous materials management include the USEPA, US Department of Labor Occupational Safety and Health Administration (Fed/OSHA), and the US Department of Transportation (DOT). Federal laws, regulations, and responsible agencies are summarized in **Table 4.7-3**.

State agencies often have either parallel or more stringent rules than federal agencies. In most cases, state law mirrors or overlaps federal law and enforcement of these laws is the responsibility of the state or of a local agency to which enforcement powers are delegated. For these reasons, the requirements of federal law and its enforcement are discussed under either the State or local agency subsections below.

TABLE 4.7-3
FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS MANAGEMENT

Classification	Federal Law or Responsible Federal Agency	Description
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from "cradle to grave."
	Hazardous and Solid Waste Act	Amended RCRA in 1984, affirming and extending the "cradle to grave" system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
	Toxic Substances Control Act (TSCA)	Code of Federal Regulations Title 40 Chapter 1, Subchapter R – Toxic Substances Control Act – Part 761 Polychlorinated Biphenyls (PCBs) – covers the identification and sampling requirements for PCBs for disposal purposes.
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) U.S. Department of Health and Human Services	Imposes requirements to ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment if such materials are accidentally released.
Hazardous Materials Transportation	US Department of Transportation (DOT)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. The DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	US Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	Fed/OSHA sets standards for safe workplaces and work practices, including the reporting of accidents and occupational injuries (29 CFR).
Structural and Building Components (Lead-based paint, polychlorinated biphenyls, and asbestos)	Toxic Substances Control Act	Regulates the use and management of polychlorinated biphenyls in electrical equipment and sets forth detailed safeguards to be followed during the disposal of such items.
	USEPA	The USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

State

California Environmental Protection Agency and Unified Program

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993).

The California Environmental Protection Agency (Cal/EPA) oversees the implementation of the Unified Program. The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspection and enforcement activities of six environmental and emergency response programs. The state agencies responsible for these programs set the standards for their respective programs while local governments implement the standards. The Unified Program is implemented at the local level by 86 government agencies certified by the Secretary of Cal/EPA. These Certified Unified Program Agencies (CUPAs) have typically been established as a function of a local environment health or fire agency. Some CUPAs also have contractual agreements with one or more other local agencies called "participating agencies (PAs)," which implement one or more program elements, under the oversight of the CUPA. The state agency partners involved in the Unified Program have the responsibility of setting program element standards, working with Cal/EPA on ensuring program consistency and providing technical assistance to the CUPAs and PAs. The following state agencies are involved with the Unified Program:

- **California Environmental Protection Agency (Cal/EPA).** The Secretary of the Cal/EPA is directly responsible for coordinating the administration of the Unified Program. The Secretary certifies Unified Program Agencies. The Secretary has certified 86 CUPAs to date. These 86 CUPAs carry out the responsibilities previously handled by approximately 1,300 state and local agencies.
- **Department of Toxic Substances Control (DTSC).** The DTSC provides technical assistance and evaluation for the hazardous waste generator program, including onsite treatment (tiered permitting).
- **Governor's Office of Emergency Services (OES).** The OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program, the California Accidental Release Response Plan (CalARP) Programs and carrying out FEMA requirements to prepare the State Multi-Hazard Mitigation Plan also known as the State Hazard Mitigation Program.
- **Office of the State Fire Marshal (OSFM).** The OSFM is responsible for ensuring the implementation of the Aboveground Petroleum Storage Act (APSA). It is also responsible for oversight of the Hazardous Material Management Plans (HMMPs) and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.
- **State Water Resources Control Board (SWRCB).** The SWRCB provides technical assistance and evaluation for the underground storage tank program.

Hazardous Waste Control Act

The hazardous waste management program enforced by the DTSC was created by the Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in CCR Title 22, Social Security, Division 4.5, Environmental Health Standards for the Management of Hazardous Waste. This act implements the RCRA "cradle-to-grave" waste management system in California, but is more stringent in its regulation of non-RCRA wastes, spent lubricating oil, small-quantity generators, transportation and permitting requirements, as well as in its penalties for violations. The act also exceeds federal requirements by mandating the recycling of certain wastes, requiring certain generators to document a hazardous waste source reduction plan, requiring permitting for federally exempt treatment of hazardous wastes by generators, and implementing stricter regulation of hazardous waste facilities.

California Department of Industrial Relations, Division of Occupational Safety and Health

The California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are more stringent than federal OSHA regulations and are presented in CCR Title 8. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders); specific practices are described for construction and hazardous waste operations and emergency response. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices. CCR Title 8 also includes standards for the identification, abatement, and handling of asbestos containing materials (8 CCR 1529 and 5208) and lead-based paint (8 CCR 1532.1).

California Highway Patrol and Department of Transportation

The California Highway Patrol (CHP) and California Department of Transportation (Caltrans) are the enforcement agencies responsible for applicable federal (DOT) and State hazardous materials transportation regulations. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations. California Vehicle Code, Division 13, Chapter 5, Article 1 Sections 31303 - 31309 regulate the transport of hazardous materials. The provisions of this section apply to the highway transportation of hazardous materials and hazardous waste and include restrictions on labeling/placards, transportation routes, and other measures to ensure safe transport of regulated materials.

State Water Resources Control Board (SWRCB)

The SWRCB has primary responsibility to protect water quality and supply through the respective Regional Water Quality Control Boards (RWQCBs). As described in Section 4.8, *Hydrology and Water Quality*, RWQCBs are authorized by the Porter-Cologne Water Quality Control Act of 1969 to protect the waters of the state. The RWQCBs provide oversight for sites where the quality of groundwater or surface waters is threatened. Extraction and disposal of contaminated groundwater due to investigation/remediation activities or due to dewatering during construction require a permit from the RWQCBs if the water were discharged to storm drains, surface water, or land.

California Code of Regulations Title 23, Chapter 15, requires that non-hazardous liquid (greater than 42 gallons) or solid (greater than 10 cubic yards) waste must be reported to the RWQCB. Domestic wastewater and refuse releases are required to be reported under different non-Chapter 15 regulations.

California Fire Code

The 2022 California Fire Code is published by the California Building Standards Commission and incorporates by adoption the 2021 International Fire Code of the International Code Council. The California Fire Code is contained as Part 2 of the California Building Standards Code and includes minimum requirements consistent with nationally recognized good practices to safeguard public health, safety and general welfare from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to provide safety and assistance to fire fighters and emergency responders during emergency operations. The California Building Standards Code is updated triennially and the 2022 version became effective on January 1, 2023.

Medical Waste Management Act

Within the regulatory framework of the Medical Waste Management Act, the Medical Waste Management Program of the California Department of Health Services (CDHS) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste offsite treatment facilities and transfer stations throughout the state. The CDHS also oversees all medical waste transporters. UCSF BCH Oakland works with the ACDEH to ensure the Medical Waste Management Program is enforced.

Radioactive Materials

Pursuant to the federal Atomic Energy Act, which requires states to assume responsibility for the use, transportation, and disposal of low-level radioactive material and for the protection of the public from radiation hazards, the Radiologic Health Branch (RHB) of the CDHS administers the state's Radiation Control Law, which governs the storage, use, transportation, and disposal of sources of ionizing radiation (radioactive material and radiation-producing equipment). Radioactive material regulations require registration of sources of ionizing radiation, licensing of radioactive material, and protection against radiation exposure. The RHB also regulates the transportation of radioactive materials and disposal of radioactive waste. Users of radioactive materials must maintain detailed records regarding the receipt, storage, transfer, and disposal of such materials. State regulations concerning radioactive substances are included in 17 CCR. The regulations specify appropriate use and disposal methods for radioactive substances, as well as worker safety precautions and worker health monitoring programs.

California Department of Health Care Access and Information

The California Department of Health Care Access and Information [HCAI, formerly Office of Statewide Health Planning and Development (OSHPD)] is a department of the California Health and Human Services Agency. HCAI serves as the regulatory building agency for all hospitals and nursing homes in California. Its primary goal in this regard is to ensure that patients in these facilities are safe in the event of an earthquake or other disaster, and to ensure that the facilities remain functional after such an event in order to meet the needs of the community affected by the disaster.

Aboveground and Underground Storage Tanks

The SWRCB administers the Aboveground Storage Tank (AST) Program. Facilities that store petroleum in a single tank greater than 1,320 gallons or facilities that store petroleum in ASTs or containers with a cumulative storage capacity of greater than 1,320 gallons are subject to SWRCB regulations. The AST Program requires that the owners or operators file a storage statement, pay a facility fee, and prepare and implement a federal Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC Plan must discuss the procedures, methods, and equipment in place at the facility to prevent discharges of petroleum from reaching navigable waters.

State laws governing underground storage tanks (UST) specify requirements for permitting, construction, installation, leak detection monitoring, repairs, release monitoring, corrective actions, cleanup, and closure. The State laws are codified in the Health and Safety Code Division 20, Chapter 6.7 (supplemented by California Code of Regulations (CCR) Title 23, Chapters 16 and 17). The ACDEH is the designated local agency to permit and inspect USTs and ASTs and implement applicable regulations. As noted above, the Project site contains one 8,000-gallon diesel fuel UST. This UST does not meet current code requirements and will be decommissioned under ACDEH oversight and replaced with a 12,000-gallon above ground storage tank prior to the start of construction of the Project. The new above ground storage tank will be installed and operated under ACDEH oversight.

UCSF BCH Oakland

Hazardous Materials & Waste Management Plan

The UCSF BCH Oakland *Hazardous Materials & Waste Management Plan* contains policies and procedures designed to ensure compliance with applicable codes, laws, and regulations. The Plan provides a framework for managing risks related to hazardous materials and waste, regulated medical waste, chemotherapeutic agents, pharmaceuticals, and radioactive materials.

The Plan identifies responsibilities for various key Hospital staff that are involved with the management of storage, use and disposal of hazardous materials. The *Safety Officer* is responsible for regulatory compliance related to hazardous materials and waste, including ensuring facility chemical inventories are current and Safety Data Sheets (SDS) are available; ensuring required permits and licenses are current; tracking and maintaining hazardous waste manifests; ensuring appropriate Hazardous Waste Storage Area Inspections are conducted; and developing and updating, as appropriate, programs and procedures related to hazardous materials and waste.

The *Emergency Management Coordinator* is responsible for developing emergency response plans for releases/spills of hazardous materials/waste and decontamination procedures, including memorandums of understanding (MOUs) with applicable licensed response vendors. The *Supply Chain Manager* is responsible for ensuring that the Hospital procures chemicals and supplies meeting the requirements of the Plan by ensuring labels on incoming chemical containers are intact, and chemical containers are not damaged when they arrive. The *Pharmacy Manager* is responsible for ensuring proper disposal of pharmaceutical and chemotherapeutic waste.

The *Radiation Safety Officer* is responsible for managing high-level radioactive material, sources, or waste and ensuring these materials are securely stored at all times; ensuring low-level radioactive waste is either held for decay to below background, or disposed of properly; maintaining the license and records of radiation waste disposal; ensuring staff exposure is monitored with appropriate action taken for staff that may become overexposed; ensuring diagnostic imaging staff receive appropriate training where applicable; and the Laser Safety program.

Department Managers are responsible for the management of department-specific programs to safely manage and control hazardous materials and waste, including department-specific maintenance of chemical inventory; ensuring proper handling, labeling, and storing of hazardous materials; employee training (e.g., hazard communication, protection equipment, and spill response); ensuring appropriate safety equipment is available for staff; and ensuring proper disposal of hazardous chemical waste, regulated medical waste, and sharps; and pharmaceutical and chemotherapeutic waste.

Under the Plan, the Hospital maintains several safety committees, and implements a number of programs to ensure the safe use, storage and disposal of hazardous materials, including but not limited to, the following:

- Managing hazardous materials and waste in compliance with required permits, licenses, manifests, and SDS required by laws and regulations, including Hazardous Materials Permits, Hazardous Waste Permit, Medical Waste Permit, Underground Storage Tank Permit, Radiation License from Nuclear Regulatory Commission, and Air Quality Permit for emergency generators, as applicable;
- The Hospital's Environment of Care (EOC) Committee analyzes risk assessments, evaluates reports, and approves actions to address identified issues to implement procedures and controls, including *Hazard Vulnerability Analysis* (HVA), *Hazard Assessments*, inspections of the Hazardous Waste Storage Area; review of incident/injury reports; regulatory inspections, and communications with end users of hazardous materials and waste;
- Maintain a written, current inventory of hazardous materials and waste that it uses, stores, or generates through its Hazard Communication Plan (see additional detail under *Hazard Communication Plan,* below;
- Maintain written procedures to follow in response to hazardous material and waste spills or exposures, through its *Emergency Operation Plan*, including its *Hazardous Materials/Waste Spill Response Plan*; the use of precautions and personal protective equipment; hospital suppression and alarm systems; and biological and chemical hoods in the pharmacy and laboratory;
- Minimize risk with handling, storing, transporting, using, and disposing hazardous materials through Hazard Communication training; and managing hazardous waste in accordance with the *Hazardous Materials & Waste Management Program*, the *Universal Waste Management Program*, and the *Regulated Medical Waste Management Program*, in compliance with applicable regulatory standards;
- Minimize risks associated with selecting, handling, storing, transporting, using, and disposing radioactive materials by managing radioactive materials in accordance with the U.S. Nuclear Regulatory Commission's guidelines by licensed professionals within the Diagnostic Imaging; use of a Radiation Safety Committee to monitor the Hospital's *Radiation Safety Program*, approve lasers, radiology equipment and radiation for therapeutic purposes; and ensure there is adequate space for storage and equipment for safely handling radioactive material;
- Minimize risks associated with disposing hazardous medications though procedures contained in the *Medical Waste Management Plan*;
- Minimize risks associated with selection, handling, storage, transport, use, and disposing hazardous gases and vapors through compliance with its Compressed Gas Management

policies; following processes to ensure hazardous gases and vapors are disposed of properly; and monitoring level of hazardous gases and vapors to ensure they are in the safe range; and

- Education and training required by the EOC Committee; and additional training compliant with local, state, and federal regulations, including that required by OSHA and EPA (UCSF BCH Oakland, 2023a).

Hazard Communication Program

The purpose of the *Hazard Communication Program* is to ensure all employees, physicians, volunteers and contract personnel that handle, use or store hazardous substances in the workplace are knowledgeable of the hazards associated with the chemicals and the methods that may be used to minimize the risk of an accident or illness resulting from the use of these chemicals. This program includes the written program, labels, other forms of warning, SDS, and information and training.

The Hazard Communication Program contains details of UCSF BCH Oakland's hazardous materials inventory process; information regarding SDS, hazardous chemical container labels and other forms of warning, and the specific information and training curriculum that have been established for UCSF BCH Oakland employees.

The Hazard Communication Program is prepared in accordance with Title 8, Section 5194 of the California Code of Regulations (CCR) and Title 29, Section 1910.1200 of the CFR and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (UCSF BCH Oakland, 2022).

Injury Illness Prevention Plan

The purpose of the UCSF BCH Oakland *Injury Illness Prevention Plan* (IIPP) is to, among other objectives, reduce work-related injuries and illnesses; develop and implement safe and healthful work practices; prevent hazards; improve staff morale and productivity; and comply with Cal/OSHA regulations for Injury and Illness Prevention Program (CCR, Title 8, Section 3203. The IIPP applies to UCSF BCH Oakland, its Outpatient Center and outlying buildings, clinics' staff, licensed practitioners, volunteers, and students.

The IIPP includes a system for communicating with employees on matters relating to occupational safety and health, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. Compliance with this provision includes meetings, training programs, posting, written communications, labor/management safety and health committees, and other means that ensure communication with employees.

The IIPP describes several programs to ensure implementation of the Plan. *Hazards Assessments* require environmental tours to be conducted to ensure the facility has a systematic method of identification, evaluation, prevention and control of hazards. The use of environmental tours minimizes the potential for injuries and illnesses of the patients, staff and visitors by identifying and mitigating/resolving environmental deficiencies, hazards, and unsafe practices. *Risk Assessments* are conducted to identify potential hazards and to evaluate the impact of the ability of staff to perform activities in a safe manner. The EOC Committee analyzes risk assessments, evaluates the reports and approves actions to address identified issues and implement procedures and controls. *Hazard Mitigation, Correction and Abatement* ensures that hazards are corrected as soon as they are identified and documented. Corrective actions or plans, including suitable timetables for completion, are the responsibility of the Department Leader with oversight from the Safety Officer (UCSF BCH Oakland, 2023b).

UCSF 2014 LRDP

The UCSF 2014 LRDP includes *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group. Those related to hazardous materials are listed below:

Community Planning Principles

Environmental Planning and Safety

EP1. Community health is of paramount importance to UCSF. UCSF bioscience facilities and research laboratories are designed by UCSF and inspected by outside regulatory agencies for compliance with applicable city, state, and federal regulatory requirements for environmental health and safety; use and collection of hazardous chemicals and of radioactive and bio-hazardous materials; use of animals; and waste collection.

EP2. Plan and locate UCSF's facilities to avoid hazards to the campus community and surrounding neighborhoods.

4.7.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;

e) For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area or create a hazard to navigable airspace and/or operations at a public airport;

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Criteria Not Analyzed

As stated in the Initial Study, there would no impact related to the following topics for the reasons described below:

- ***Airport land use plan.*** There are no airports within 2 miles of the campus site boundary, and as a result no impact would occur.
- ***Emergency response or evacuation plan.*** All expansion and improvements with the proposed Project would adhere to building code requirements and relevant emergency access and egress measures. All designs would be subject to review and approval by State Fire Marshall. In addition, UCSF design criteria and safety measures would ensure that emergency response abilities remain fully functional. The proposed NHB Project would not interfere with UCSF BCH Oakland and/or regional emergency response plans or emergency evacuation plans. Therefore, potential impacts related to emergency response or evacuation would be less than significant.
- ***Wildland fire.*** As discussed in Section 4.7.1, *Environmental Setting*, the Project site and surrounding area are not located within or near a State Responsibility Area or lands classified as a very high fire severity zone, and the Project site is not susceptible to wildfires. Consequently, there would be no potential for the Project to expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur.

Approach to Analysis

The potential for the creation of significant impacts related to hazards and/or hazardous materials from the construction and operation of the proposed Project was determined by a review of the existing conditions, with particular attention paid to known or potential presence of hazardous materials and hazardous wastes as determined through a search of the environmental databases maintained by the DTSC and SWRCB and/or reported in hazardous materials investigations; and information regarding the types and quantities of hazardous materials used in UCSF BCH Oakland’s clinical and research activities. Also considered are the existing regulatory requirements regarding the transportation, use, storage, and disposal of hazardous materials and wastes.

In the impacts below, the proposed new hospital building and renovation of existing facilities under the Project are considered together due to similar environmental impacts that would be associated with transport, use and disposal of hazardous materials in these facilities. It should be noted that since the existing Patient Tower and Ford Diagnostic and Treatment (D&T) Center are existing operating uses, the majority of use, disposal and/or transport of hazardous materials effects associated with the continued operation of these hospital facilities following renovation are part of the existing baseline conditions, and consequently, not new impacts.

Impact Analysis

Impact HAZ-1: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. *(Less than Significant*)

New Hospital Building and Renovation of Patient Tower

Construction

The Project site is developed with a number of existing buildings and structures, several of which are proposed to be demolished or undergo renovation under the Project. New Project building construction would include the proposed new hospital building and parking structure, and renovations would be made in the Patient Tower. The potential for exposure of the public or the environment to hazardous materials during demolition and construction activities is addressed below.

Exposure to Hazardous Building Materials

Existing buildings and structures proposed to be demolished under the Project are of varying ages, including the A/B and B/C Wings (1928 and 1946, respectively), loading dock (1982), the Bruce Lyon Memorial Research Laboratory (1958) and Addition (1992), existing helistop structure (2000) and six trailers (1990 or newer); an additional existing trailer would be relocated off-site. The existing Patient Tower (1980) would be subject to renovation. As such, several of these buildings were built before newer regulatory requirements were enacted (1978 for lead-based paint and PCBs, 1981 for ACMs, and 2004 for mercury in fluorescent lighting) and, as a result, could contain hazardous building materials. Exposure to hazardous building materials, including ACMs, LBP, PCBs, mercury and other hazardous materials in structures would only occur during demolition or renovation activities, but could result in adverse health effects if not managed appropriately as required by existing laws and regulations. Once these structures have been removed or renovated, there would be no further exposure during operation of the renovated or new buildings under the proposed Project.

As described under Section 4.7.2, *Regulatory Framework*, above, existing federal, State, and local regulations require demolition or renovation activities that may disturb or require the removal of materials that consist of, contain, or are coated with ACM, LBP, PCBs, mercury, and other hazardous materials to be inspected and/or tested for the presence of hazardous materials. Further, all hazardous materials must be managed and disposed of in accordance with laws and regulations described in the *Regulatory Framework* and further described below.

The identification, removal, and disposal of ACM is regulated under 8 CCR 1529 and 5208. The identification, removal and disposal of LBP is regulated under 8 CCR 1532.1. For both ACM and LBP, all work must be conducted by a State-certified professional. If ACM and/or LBP is determined to exist onsite, a site-specific hazard control plan must be prepared and submitted to the appropriate agency detailing removal methods and specific instructions for providing protective clothing and equipment for abatement personnel (Bay Area Air Quality Management District for asbestos and Cal/OSHA for lead). If necessary, a State-certified LBP and an asbestos removal contractor would be retained to conduct the appropriate abatement measures as required by the plan. Wastes from abatement and demolition activities would be disposed of at a landfill(s) licensed to accept such waste. Once all abatement measures have been implemented, the contractor would conduct a clearance examination and provide written documentation to UCSF that testing and abatement have been completed in accordance with all federal and State laws and regulations.

In the case of PCBs, the identification, removal, and disposal is regulated by the USEPA under the Toxic Substances Control Act (TSCA) (Title 40 Chapter 1 Subchapter R Part 761) and California regulations (22 CCR 66263.44). Electrical transformers and older fluorescent light ballasts not previously tested and verified to not contain PCBs must be tested. If PCBs are detected above action levels, the materials must be disposed of at a licensed facility permitted to accept the materials. Upon completion of abatement measures, if applicable, the contractor would provide written documentation to UCSF that testing and abatement have been completed in accordance with all federal and State laws and regulations.

In the case of mercury in fluorescent light tubes and switches, the identification, removal, and disposal is regulated under 22 CCR 67426.1 – 67428.1 and 66261.50. Under these regulations, the light tubes must be removed without breakage and disposed of at a licensed facility permitted to accept the materials. Upon completion of abatement measures, if applicable, the contractor would provide written documentation to UCSF that testing and abatement have been completed in accordance with all federal, State, and local laws and regulations.

As discussed above, pursuant to federal and State regulations, appropriate surveying, identification and disposal of any identified hazardous building materials would be required prior to renovation and demolition. Therefore, exposure to ACM, LBP and/or other hazardous building materials that would create a potentially significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would not occur and the impact would be less than significant.

Naturally Occurring Asbestos

As discussed in Section 4.7.1, *Environmental Setting*, the bedrock underlying the Project site has the potential of containing asbestos fibers; however, bedrock is anticipated to be at a depth of about 300 feet below grade, and exploration conducted in support of the geotechnical report did not expose alluvium derived from ultramafic material. The proposed Project would not require excavation below 28 feet below grade (to accommodate the new hospital building). As a result, the potential for encountering naturally occurring asbestos hazards at the Project site is determined to be low, and the impact would be less than significant.

Use of Hazardous Materials during Construction

Construction of the proposed new hospital building and parking structure, and renovation of Patient Tower would require the use of limited quantities of hazardous materials such as fuels, oils, and lubricants for construction equipment; as well as paints, thinners, glues, solvents and cleaners, all of which are commonly used in the construction industry. These hazardous materials are typically packaged in consumer quantities and used in accordance with manufacturer recommendations and would be transported to and from the campus site. The improper handling and transport of hazardous materials could result in adverse health effects to workers or the public.

As discussed in the *Regulatory Framework*, transportation of hazardous materials is regulated by the DOT, CHP and Caltrans. Together, federal and State agencies determine driver-training requirements, load labeling procedures, and container specifications designed to minimize the exposure of hazardous materials.

See also Impact HAZ-2, below, for a discussion of construction best management practices (BMPs) that would be implemented as part of a Storm Water Pollution Prevention Plan (SWPPP), as required by the NPDES Construction General Permit which would also minimize the potential for an inadvertent release of hazardous materials during construction.

As discussed above, a comprehensive set of federal and State laws and regulations regulate the transportation, management, and disposal of hazardous materials and wastes so as to reduce the potential risks of human exposure. For these reasons, proposed Project construction and renovation activities would not result in a significant hazard due to exposure of the public or the environment to hazardous materials or wastes through the routine transport, use, or disposal of hazardous materials.

Operation

As discussed in Section 4.7.1, *Environmental Setting*, the use of hazardous materials presently occurs in a variety of campus operations and with the proposed Project, their use would be expanded as part of operation of the new hospital building and renovated Patient Tower. The *Environmental Setting* summarizes the quantities of different hazardous wastes that were generated at the UCSF BCH Oakland campus site and required disposal in 2022 (approximately 129,554 pounds). As summarized in **Table 4.7-4**, below, UCSF estimates that with the buildout of the Project, the amount of hazardous wastes that would be generated on the campus site annually and would require disposal would be approximately 165,383 pounds (an increase of about 28 percent, or approximately 35,829 pounds annually, over baseline conditions).

TABLE 4.7-4
PROJECTED HAZARDOUS WASTES FROM UCSF BCH OAKLAND CAMPUS SITE TO BE DISPOSED UNDER NHB PROJECT BUILDOUT

Waste Stream	Existing Volume (Pounds)	Estimated Future Volume (Pounds)
Batteries (Universal Waste)	5,439	6,772
Hazardous Chemicals	11,678 (including waste oil)	15,064 (including waste oil)
Radioactive Waste	None	None
Medical Waste Treatment	47,256	60,960
Pathological/Trace Chemotherapy Waste	5,161	5,161
Pharmaceutical Waste (including Sharps Waste)	60,554	77,426
	129,554	**165,383**

SOURCE: UCSF 2023a

Non-clinical uses associated with the hospital, such as office, retail, kitchen uses within the buildings, would typically include familiar hazardous materials such as toners, paints, and household cleaning products. In addition, activities such as building maintenance and landscaping commonly use fuels, oils, paints, lubricants, solvents, and pesticides. These common types of hazardous materials are typically stored and used in small quantities and used in accordance with manufacturer recommendations. As such, the routine transport, use, storage or disposal of these materials associated with the hospitals would not be reasonably expected to cause an adverse impact to the public and the environment.

The UCSF BCH Oakland new and renovated hospital facilities would also require transport, handling, storage and disposal of other varied and larger quantities of hazardous materials, including biohazardous materials and chemical materials.

Various chemicals that may be used may pose different levels of hazards in their use from acute to chronic illnesses if not managed appropriately. In general, the properties and health effects of chemical substances are unique to the individual materials, although they often can be grouped by chemical types. Operations would continue to comply with all hazardous material regulatory requirements and UCSF BCH Oakland protocols for the campus as detailed above in Section 4.7.2, *Regulatory Framework*. UCSF BCH Oakland's *Hazardous Materials and Waste Management Plan, Hazard Communication Program*, and *Injury and Illness Prevention Plan* (collectively, the Plans) establish requirements and responsibilities for the safe use of hazardous chemicals in UCSF BCH Oakland laboratories and clinical facilities. The Plans are based on federal, State, and local regulations, as well as UCSF BCH Oakland's commitment to providing a safe environment for the entire UCSF BCH Oakland community. The policy covers training requirements, hazard communication, standard operating procedures, safe storage, engineering controls, hazardous waste, security, shipping and transportation, lab close-outs, enforcement, and other aspects of safe and compliant chemical management. The Plans also address various responsibilities for ensuring a safe and compliant workplace, including reporting hazards, inspecting workplaces, and interfacing with regulatory agencies. Current chemical handling training programs used to educate staff would continue with development of the new and renovated hospital facilities. The Plans are implemented and enforced by the UCSF BCH Oakland Safety Officer, Emergency Management Coordinator, Radiation Safety Officer, and department managers.

To minimize exposure to chemicals in the air, staff would continue to receive required training, take prescribed procedural precautions in accordance with existing regulatory and UCSF BCH Oakland handling requirements, such as working under fume hoods and wearing appropriate personal protective equipment, when using chemicals likely to present inhalation exposure hazards. Fume hoods and other engineering controls would be required to meet Cal/OSHA requirements and fume hood ventilation rates would continue to be checked annually by the Safety Officer.

The operation of the hospital would also require transport, handling, storage and disposal of medical/biological waste. As discussed in the *Regulatory Framework*, and summarized above, UCSF BCH Oakland has established policies and procedures within the Plans and implements a comprehensive system for management of hazardous materials at its facilities, including medical/biological wastes, as overseen by the Safety Officer. UCSF BCH Oakland's Safety Officer is responsible for ensuring compliance with applicable laws and regulations governing the transport, use, storage and disposal of all hazardous materials. The hospitals would comply with existing health and safety practices as well as those federal and State regulations, which would minimize the potential for adverse health effects related to biohazardous waste. Generated wastes would be segregated, handled, labeled, stored and transported to minimize direct or indirect exposure of personnel in accordance with federal and State regulations. Therefore, the impact associated with the generation of biohazardous waste at the hospitals and clinical facilities would be less than significant.

Radioactive materials at UCSF BCH Oakland are managed in accordance with its Radiation Safety Program and the facility's Broad Scope Radioactive Materials License. The radiation safety program, which is required by CDHS RHB and documented in UCSF BCH Oakland's Radiation Safety Program, is designed to provide adequate protective measures against exposure for visitors, students, staff and the community at large. The maintenance processes for radioactive equipment would be extended to the new and renovated hospital facilities under the Project, and the Radiation Safety Program would be implemented and updated, as necessary, to reflect the types, quantities and locations of radioactive materials. Implementation of these measures as mandated by State and federal law would occur under the Project. Given that adequate safety controls, programs, plans and procedures are mandated and in place to limit exposure to radiation from radioisotopes and radiation producing machines, the potential for operation of the hospitals and clinical facilities to expose persons to significant health or safety risks from radioactive materials is low.

Compliance with hazardous storage and transportation regulations, and continuation of the programs and controls currently in place to manage hazardous materials, as mandated by State and federal laws, would minimize the hazards to workers, the public, and the environment. Therefore, operation of the new and renovated hospital facilities under the Project would result in a less than significant impact related to the routine transport, use, and disposal of hazardous materials and wastes.

Mitigation: None required.

Impact HAZ-2: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (*Less than Significant*)

Construction

As noted above in Impact HAZ-1, construction activities associated with the new hospital building and the parking structure and renovation of the Patient Tower would require the use of limited quantities of hazardous materials typically used in the construction process, including fuels, oils, and lubricants for construction equipment; paints and thinners; and solvents and cleaners. These materials would be transported to and from the campus site for use during construction activities. The improper handling and transport of hazardous materials could result in accidental release of hazardous materials, thereby exposing the public or the environment to hazardous materials.

Construction activities that would disturb more than one acre are required to comply with the NPDES Construction General Permit. This permit requires implementation of best management practices (BMPs) that would include measures to address the safe handling of hazardous materials, and in the unlikely event of an inadvertent release, also requires spill response measures to contain any release of hazardous materials. The use of construction BMPs implemented as part of a Storm Water Pollution Prevention Plan (discussed further in Section 4.8, *Hydrology and Water Quality*) as required by the NPDES Construction General Permit would minimize the potential adverse effects from accidental release of hazardous materials or wastes. These BMPs could include, but are not necessarily limited to, the following:

- Establishment of a dedicated area for fuel storage and refueling activities that includes secondary containment protection measures and spill control supplies;
- Requirements to follow manufacturer’s recommendations on use, storage and disposal of chemical products used in construction;
- Avoidance of overtopping construction equipment fuel gas tanks;
- Proper containment and removal of grease and oils during routine maintenance of construction equipment; and
- Proper disposal of discarded containers of fuels and other chemicals.

In general, aside from refueling needs for heavy equipment, the hazardous materials typically used on a construction site would be brought onto the site by the construction contractor, packaged in consumer quantities, and used in accordance with manufacturer recommendations. The overall quantities of these materials on the site at any one time would not result in large bulk amounts that, if spilled, could cause significant soil or groundwater contamination. If a spill of hazardous materials on the construction site were to occur, the spilled materials would be localized because of the relatively small quantities involved and would be cleaned up in a timely manner in accordance with identified BMPs. See Impact HAZ-4 for a discussion of potential impacts related to encountering previously released hazardous materials or wastes.

As described above, refueling activities of heavy equipment would be conducted in a dedicated and controlled area with secondary containment and protective barriers to minimize any potential hazards that might occur with an inadvertent release. Given the required protective measures (i.e., BMPs) and the quantities of hazardous materials typically needed for construction projects, such as those that would be constructed under the proposed new hospital building and renovation of Patient Tower, the impact to the public or the environment from an accidental release of hazardous materials during construction would be less than significant.

Operation

Operation of the proposed new hospital building and renovated Patient Tower under the Project would involve continued and increased use of hazardous materials, as described above in Impact HAZ-1. UCSF BCH Oakland would continue to implement existing campus health and safety practices and comply with federal and State regulations related to the use, transport, and disposal of hazardous materials, thus minimizing the potential for an accidental release and providing for prompt and effective cleanup in the unlikely event that an accidental release would occur. Furthermore, UCSF BCH Oakland maintains an Emergency Operations Plan for the campus site, which addresses the campus community's planned response to various levels of human-made or natural emergency situations, including the accidental release of hazardous materials. UCSF BCH Oakland's hazardous materials safety programs, plans and protocols for the campus site also address spill response procedures that include, but are not limited to, specific emergency response instructions, locations of personnel and equipment resources, specialty hazard instructions, and appropriate training. The existing Emergency Operations Plan and safety programs, plans and protocols would be revised to include the expanded operations that would occur at the new and renovated hospital facilities under the proposed Project. Thus, the proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials during project operations.

Therefore, because the Project will comply with existing regulatory requirements and/or UCSF BCH Oakland policies and programs, the potential for upset and accidental release conditions involving the release of hazardous materials would be reduced to less than significant levels.

Mitigation: None required.

Impact HAZ-3: Construction and operation of the NHB Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (*Less than Significant*)

Construction

As noted in Section 4.5.1, *Environmental Setting*, there is one public high school and two private childcare centers located within one-quarter mile of the Project site (Oakland International High School, at 4521 Webster Street, approximately 0.24 miles southeast of the Project site; LaVonda's Crayon Box, at 825 52nd Street 0.1 mile west of the Project site, and Mechita Daycare at 4812 Shattuck Avenue, about 0.14 miles to the east, respectively). Several other schools and childcare facilities are located within one-half mile of the Project site.

The potential for emissions of hazardous materials during construction to adversely affect any of the schools or day care centers would be relatively low for the same reasons described above in Impact HAZ-1. Construction activities at the Project site would be required to adhere to the NPDES Construction General Permit and implement appropriate BMPs that would control hazardous materials transport, handling, and disposal such that the potential for emissions to adversely affect existing or proposed schools or childcare centers in the Project vicinity would be minimized and the impact would be less than significant. See Impact HAZ-4 for a discussion of potential impacts related to encountering previously released hazardous materials or wastes.

Operation

During the operation of the Project, these facilities would continue to adhere to existing regulatory requirements and UCSF BCH Oakland policies. And, as discussed in Impact HAZ-1, while these new and renovated facilities would increase the total quantities of hazardous materials used at the campus site, there would not likely be a substantive change in hazardous emissions since all transportation, use, storage, and disposal of hazardous materials would be conducted in accordance with applicable federal, State, and UCSF requirements which are designed to minimize exposure. Therefore, the operation of these facilities under the Project would not expose existing or future schools and daycare centers near the campus site to hazardous emissions and the impact would be considered less than significant. Please also refer to Section 4.1, *Air Quality* for a health risk assessment associated with toxic air contaminant emissions from the implementation of the Project.

Mitigation: None required.

Impact HAZ-4: The UCSF BCH Oakland campus site is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Contamination at the NHB Project site could be encountered during construction and could have the potential to create a significant hazard to the public or the environment. (*Less than Significant with Mitigation*)

As described above under Section 4.7.1, *Environmental Setting*, the UCSF BCH Oakland campus site is listed on the Cortese List. Two cases were identified within the UCSF BCH Oakland campus site.

In the first case, petroleum hydrocarbons were detected in soil samples and PCE and TCE were detected in groundwater within the campus site north of 52nd Street. The ACDEH, as the lead oversight agency, concluded that UCSF BCH Oakland is not the source or the responsible party for the contamination detected in the groundwater. The UCSF BCH Oakland case is going through the process of being closed. It is important to note that the ACDEH is closing the case only relative to UCSF BCH Oakland because the ACDEH has concluded that UCSF BCH Oakland is not the responsible party for the residual contamination in groundwater beneath the campus site. This does not mean that there are no residual chemicals in groundwater and possibly soil beneath the campus site. Given that the 2021 sampling event from the groundwater wells on the campus site in the Project vicinity is relatively recent and that PCE and TCE are recalcitrant chemicals (i.e., they degrade very slowly), PCE and TCE may be present in groundwater beneath the Project site.

The second case involved a release of gasoline within the campus site west of MLK Jr. Way during the removal of USTs. The RWQCB, as lead oversight agency determined that any residual contaminants from this release do not pose a risk to people or the environment, and closed the case as of October 2018 with no further action required.

As discussed above, residual levels of PCE and TCE are present in groundwater at the campus site. Construction workers may encounter contaminated soil and groundwater during Project construction. Future occupants of the Project site could be exposed to PCE and TCE vapors migrating from groundwater up into breathing spaces of structures. Construction activities may also encounter previously unidentified contamination. If not identified and managed appropriately, construction workers, campus employees, and the public could be exposed to contaminants through direct contact (construction workers) or through soil vapor intrusion. To mitigate the impact from exposure to contamination, the proposed Project would be required to implement **Mitigation Measure HAZ-4a, Soil and Groundwater Management Plan (SGMP)** and **Mitigation Measure HAZ-4b, Vapor Mitigation**, described below.

Mitigation Measure HAZ-4a, Soil and Groundwater Management Plan (SGMP): Prior to development on the campus site, a SGMP shall be prepared by a qualified environmental consulting firm to reflect current regulatory requirements and risk management protocols that are in accordance with ACDEH oversight. The SGMP shall include measures to address protocols for identifying, handling, and characterizing suspect contaminated soils and/or groundwater, if encountered, as summarized below:

- Site description, including the hazardous materials that may be encountered.
- Roles and responsibilities of onsite workers, supervisors, and the regulatory agency (ACDEH). Onsite personnel shall attend mandatory pre-project training regarding the SGMP.
- Training for construction workers focused on the recognition of and response to encountering hazardous materials.
- Protocols for the materials (soil and/or dewatering effluent) testing, handling, removing, transporting, and disposing of all excavated materials and dewatering effluent in a safe, appropriate, and lawful manner.
- Specified personal protective equipment and decontamination procedures, if needed.
- A requirement specifying that any construction worker who identifies hazardous materials has the authority to stop work and notify the site supervisor.
- Procedures to follow if evidence of potential soil and/or groundwater contamination is encountered (such as soil staining, unusual odors, debris or buried storage containers). These procedures shall be followed in accordance with hazardous waste operations regulations and specifically include, but not be limited to, immediately stopping work in the vicinity of the unknown hazardous materials release; notifying the ACDEH; and retaining a qualified environmental firm to perform sampling and remediation.

Notification and sampling requirements for adequate characterization shall be in accordance with ACDEH requirements and any required removal or remediation work shall be completed to the overseeing agency’s standards prior to occupancy of the new structure.

Mitigation Measure HAZ-4b: Vapor Mitigation: To mitigate exceedances of indoor air standards, the Project shall incorporate at least one or more of the vapor mitigation methods listed below in areas determined to have soil gas concentrations above soil gas screening levels. The proposed work-specific vapor mitigation must be in accordance with vapor mitigation guidance provided by the Department of Toxic Substances Control (DTSC), which provides vapor guidance information at https://dtsc.ca.gov/vapor-intrusion.

- Excavate and remove contaminated materials (soil and, if needed, groundwater), to levels where subsequent testing verifies that soil gas levels are below screening levels.
- Install a physical vapor barrier beneath the structure foundation that prevents soil gas from seeping into breathing spaces inside the structure, or
- Install a passive or powered vapor mitigation system that draws soil gas out of the under-foundation base rock and directs that soil gas to a treatment system to prevent people from being exposed outdoors to the extracted soil gas.

Upon completion, UCSF BCH Oakland shall prepare a report documenting the testing results and installed vapor mitigation method and submit the report to the regulatory agency with jurisdiction (i.e., DTSC). A copy of the report shall be provided to the UCSF Mitigation Monitor to inform them of compliance with this requirement. The implemented mitigation measure shall result in indoor air concentrations that do not exceed the screening levels provided in the DTSC Human Health Risk Assessment (HHRA) Note Number 3.

Significance after Mitigation: With the implementation of Mitigation Measures HAZ-4a and HAZ-4b, the Project would not create a significant hazard to the public or the environment as a result of exposure to previously unknown contamination or hazardous release sites. Thus, this impact would be considered less than significant.

Cumulative Impacts

This section presents an analysis of the cumulative effects of the Project when considered with other past, present, and reasonably foreseeable projects. The geographic scope of potential cumulative hazards and hazardous materials impacts encompasses the Project site and immediate surrounding area. Hazardous materials and hazard impacts are generally localized to specific sites/incidents and do not combine with one another in a way to create a greater or more severe hazard, because of the relative infrequencies, the variances in timing, and the existing response measures that tend to contain the vast majority of incidents and releases to very localized areas. Impacts relative to hazardous materials usually depend on the nature and extent of the hazardous materials release, and existing and future soil and groundwater conditions. For example, hazardous materials incidents tend to be limited to a smaller more localized area surrounding the immediate location and extent of a release, and could cause a cumulative impact only if two or more hazardous materials releases overlapped spatially and contemporaneously in a way that could be considered cumulatively considerable.

Impact C-HAZ-1: Construction and operation of the NHB Project, in conjunction with other cumulative development within the City of Oakland, would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or from risk of upset and accident conditions involving hazardous materials. (*Less than Significant*)

As explained above, construction, demolition and renovation activities proposed under the Project would comply with all applicable regulations governing hazardous materials, and subject to those mitigation measures identified in this EIR (e.g., Soil and Groundwater Management Plan).

Similarly, other on-campus demolition and construction activities (i.e., Administrative Support Building project, UCSF BCH Oakland Infrastructure project, and replacement of fuel oil UST) and off-campus demolition and construction activities, would be carried out in accordance with all applicable regulations governing hazardous materials and subject to any specific hazardous materials mitigation measures identified for those projects. The Project's cumulative impact during construction would be less than significant.

As discussed above, all potential hazardous materials impacts associated with operation of the new hospital building, renovated Patient Tower and supporting improvements would be less than significant with compliance with applicable State and federal regulations, and the management of hazardous materials and the continued oversight, guidance and compliance monitoring that would be conducted by UCSF BCH Oakland's *Hazardous Materials and Waste Management Plan, Hazard Communication Program*, and *Injury and Illness Prevention Plan* (collectively, the Plans). Similarly, other existing or planned clinical and/or research facilities at the campus site would be subject to similar applicable regulations, UCSF BCH Oakland Plans, and oversight from the Safety Officer, Emergency Management Coordinator, Radiation Safety Officer, and department managers. Off-campus land uses throughout the City of Oakland include various light industrial and commercial land uses which are subject to similar regulations and internal standard operating procedures which control the use, storage, and disposal of hazardous materials such that routine exposure and release risks from upset and accident conditions are minimized. As a result of these existing regulatory requirements, the potential hazardous materials and hazard impacts of the project would not combine to become a significant cumulative impact.

Cumulative health and safety impacts could also occur if Project-related off-site hazards were to interact or combine with those of existing and/or planned off-campus hazards. Cumulative health and safety impacts could only occur through the following mechanisms: air emissions; transport of hazardous materials and waste to or from the campus site; inadvertent release of hazardous materials to the sanitary sewer, storm drain, or non-hazardous waste landfill; and potential accidents that require hazardous materials emergency response capabilities. Air emissions impacts are addressed in Section 4.1, *Air Quality*. The Project as well as other past, present, and future projects would be required to adhere to existing regulatory requirements for the appropriate handling, storage, and disposal of hazardous materials that are designed to minimize exposure and protect human health and the environment. These requirements include that businesses in the City that handle hazardous materials or wastes would be required to submit business information and hazardous materials inventory forms contained in a Hazardous Materials Management Plan and Hazardous Materials Business Plan. Cumulative increases in the transportation of hazardous materials and wastes would cause a less than significant impact because the probability of accidents is relatively low, and the use of legally required packaging minimizes the consequences of potential accidents. In addition, all cumulative projects in the area would be required to comply with the same laws and regulations as the Project. This includes federal and state regulatory requirements for transporting (Cal/EPA and Caltrans) hazardous materials or cargo (including fuel and other materials used in all motor vehicles) on public roads or disposing of hazardous materials (Cal/EPA, DTSC, ACDEH). The cumulative impacts related to hazards and hazardous materials would be less than significant.

Mitigation: None required.

4.7.4 References

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4.8 Hydrology and Water Quality

This section assesses the potential for construction and operation of the NHB Project, including the related improvements, to result in significant impacts related to hydrology and water quality. The section contains a description of the existing hydrology and water quality conditions of the campus site and the surrounding areas; describes the regulatory framework, including University plans and policies, and federal, State and local regulations, related to hydrology and water quality; identifies criteria used to determine impact significance; and provides an analysis of the changes in hydrology and water quality associated with the implementation of the Project, as well as sets forth feasible measures that could mitigate significant impacts.

4.8.1 Environmental Setting

Climate

The Bay Area has a Mediterranean climate, with moist, mild winters and hot, dry summers. However, the region's varied topography creates microclimates dependent upon elevation, proximity to the Bay or coast, and orientation. The mean annual precipitation in Oakland is approximately 24 inches per year with most of the rainfall occurring between November and March. The average annual temperature in Oakland is 57.3 degrees Fahrenheit, with the minimum average monthly temperature occurring in January (44 degrees Fahrenheit) and maximum average monthly temperature occurring during September (74 degrees Fahrenheit) (U.S. Climate Data, 2023).

Watershed Drainage Basins

The Project site is located within the Temescal Creek watershed. The 6.7-square-mile Temescal Creek Watershed spans the northernmost section of the Oakland hills. South of State Route (SR) 24, two of the watershed's four creeks drain the Montclair residential district and flow into Lake Temescal. North of SR 24, the other two creeks drain the Claremont hills residential area and Claremont Canyon Regional Preserve. Both of these join the main channel of Temescal Creek below Lake Temescal, from which point water flows primarily through culverts and ultimately discharges into the San Francisco Bay at the Emeryville Crescent State Marine Preserve (ACFCWCD, 2023).

Hydrology and Drainage

The majority of the Project site is relatively flat with a ground surface elevation varying between approximately 90 and 100 feet above NAVD, sloping gradually in a westerly direction.[56] Within the eastern portion of the Project site, the State Route (SR) 24 ramp embankment rises to an elevation of about 130 feet above NAVD (Fugro West, 2009; Sandis, 2022). The Project site is largely developed with buildings, structures, and paving, with the exception of small areas of landscaping in the vicinity of the buildings, and the vegetated SR 24 embankment located on the

[56] The North American Vertical Datum of 1988 (NAVD) is, for most practical purposes, equivalent to mean sea level; however, sea level can vary from place to place, season, and time of day.

east side of the property. Runoff on the impervious portions of the Project site is directed by sheetflow towards on-site storm drains or curbside drains in adjacent streets.

No open creek or stream channels cross the Project site. Temescal Creek is contained in an underground 10-foot by 12-foot box culvert that runs east to west through the southern end of the Project site. The creek does not daylight until it enters a concrete engineered channel at Horton Street. Temescal Creek is managed by the Alameda County Flood Control and Water Conservation District (ACFCWD).

The City of Oakland is responsible for the operation and maintenance of the local storm drainage system in the Project area. The City of Oakland's storm drainage system network is comprised of approximately 400 miles of storm drainpipes with inlets and manholes, along with pump stations, trash capture devices, weirs, and green infrastructure facilities; and over 100 miles of open creeks. These facilities are both publicly and privately owned. City-owned drainage systems are typically located within easements and rights-of-way. These piped storm drainage collection systems outfall into existing creeks, the Oakland Estuary, and/or the San Francisco Bay.

Currently, a number of City storm drains, ranging from 12 to 24-inches in diameter, extend into the Project site, and connect and discharge to the on-site ACFCWD culvert.

Flooding

Storm Induced Flooding

The Federal Emergency Management Agency (FEMA), through its Flood Insurance Rate Mapping (FIRM) program, designates areas where urban flooding could occur during 100-year and 500-year flood events. A 100-year flood event has a one-percent probability of occurring in a single year. 100-year floods can occur in consecutive years or periodically throughout a decade. A 500-year flood event has a 0.2 percent probability of occurring in a single year. The Project site is not located within a 100-year or 500-year flood zone (FEMA, 2009).

Inundation From Dams

Lake Temescal Dam is located approximately 2 miles east-northeast of the Project site. Owned by the East Bay Regional Park District (EBRPD), Lake Temescal Dam is an earthen dam with a storage capacity of 200 acre-feet. Lake Temescal Dam is under the regulatory jurisdiction of the California Department of Water Resources, Division of Safety of Dams (DOSD). The DSOD reviews and approves inundation maps for extremely high, high, and significant hazard dams. The DSOD designates Lake Temescal Dam as an extremely high hazard risk dam. The Project site is mapped as being within a dam breach inundation area in the event of a catastrophic failure of Lake Temescal Dam. The DSOD conducts annual inspections and requires corrective actions to be performed if a dam is found to be unsafe or developing problems (DSOD 2023a; 2023b).

Coastal Hazards

Tsunamis are a series of waves generated by vertical movement of the sea floor, normally associated with earthquakes or volcanic eruptions. Seiches are oscillations of enclosed or semi-enclosed bodies of water that result from seismic events, wind stress, volcanic eruptions, underwater landslides, and local basin reflections of tsunamis. The key requirement for the formation of a seiche is that a body of water be at least partially bounded, allowing for a standing wave to form. Locations along the Bay shoreline are exposed to elevated Bay water levels. Sea-level rise will increase the elevation of Bay water levels and hence increase the potential risk of flooding. During future floods, particularly those that include sea-level rise, many stretches of the Bay shoreline could be overtopped and experience inundation in developed areas landward of the shoreline. Given the location and elevation of the Project site, it is not subject to coastal hazards, including tsunamis, seiches, sea level rise, or extreme high tides.

Groundwater

The Project site overlies the Santa Clara Valley Groundwater Basin—East Bay Plain Subbasin (No. 2-009.04), which extends from Richmond to Hayward. The subbasin is composed primarily of alluvial deposits formed by tributaries to the San Francisco Bay. The water-bearing formations in this subbasin comprise three groups: the Santa Clara Formation of the Early Pleistocene age that consists of alluvial fan and flood plain deposits, the Alameda Formation of the Late Pleistocene age that consists of alluvial fan deposits bounded on the top and bottom by mud deposits, and the Temescal Formation of the Early Holocene age that consists of alluvial deposits. The cumulative thickness of these formations is approximately 1,000 feet (DWR, 2004).

Groundwater use in the East Bay Municipal Utility District (EBMUD) service area is limited by several factors, including the effects of saltwater intrusion and contamination in shallow aquifers on groundwater quality and the availability of higher quality imported surface water. Groundwater is currently not used by EBMUD for municipal supplies.

Prior geotechnical investigations prepared for the Project site reported that groundwater was encountered at a variable depth ranging from 7.5 to 20 feet below ground surface (bgs) (Fugro West, 2009). Groundwater depths can vary due to seasonal precipitation patterns and localized infiltration rates.

Water Quality

As described below under “Clean Water Act Section 303(d) and Total Maximum Daily Loads,” all states must present the United States Environmental Protection Agency (USEPA) with a list of impaired water bodies, defined as those water bodies that do not meet water quality standards.

The Central San Francisco Bay is listed as an impaired water body. The Regional Water Quality Control Board (RWQCB) has listed the Central San Francisco Bay as an impaired water body for the following pollutants: chlordane, dichloro-diphenyl-trichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, mercury, polychlorinated biphenyls (PCBs), selenium, invasive species, and trash (SWRCB, 2023).

4.8.2 Regulatory Framework

Federal

Clean Water Act

Water quality objectives for all waters of the United States are established under applicable provisions of Section 303 of the federal Clean Water Act (CWA). The CWA prohibits the discharge of pollutants to navigable waters from a point source unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Point sources are defined as any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, well, or vessel from which pollutants are discharged. Nonpoint sources come from many diffuse sources, including land runoff, precipitation, drainage, seepage, or hydrologic modification. Because implementation of these regulations has been delegated to the State, additional information regarding this permit is presented under the "State" subheading, below.

Clean Water Act Section 303(d) and Total Maximum Daily Loads

In accordance with Section 303(d) of the CWA, states must present the USEPA with a list of impaired water bodies, defined as those water bodies that do not meet water quality standards. The CWA requires the development of total maximum daily loads (TMDLs)[57] to improve the water quality of impaired water bodies. The TMDLs for the San Francisco Bay are presented in the San Francisco Bay Water Quality Control Plan (Basin Plan), which is discussed in more detail below under State regulations. Implementation of this program in the project area is conducted by the RWQCB.

National Pollutant Discharge Elimination System Permits

The NPDES permit system was established in the CWA to regulate municipal and industrial point discharges to surface waters of the U.S. Each NPDES permit for point discharges contains limits on allowable concentrations of pollutants contained in discharges. CWA Sections 401 and 402 contain general requirements regarding NPDES permits. CWA Section 307 describes the factors that the USEPA must consider in setting effluent limits for priority pollutants.

The regulations initially focused on municipal and industrial wastewater discharges in 1972, followed by stormwater discharge regulations, which became effective in November 1990. NPDES permits for wastewater and industrial discharges specify discharge prohibitions and effluent limitations and also include other provisions (such as monitoring and reporting programs) deemed necessary to protect water quality. In California, the State Water Resources Control Board (SWRCB) and the RWQCB implement and enforce the NPDES program. Stormwater sources are diffuse and originate over a wide area rather than from a definable point. The goal of NPDES stormwater regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of structural and non-structural best management practices (BMPs). BMPs can include the development and implementation of various practices, including educational measures (e.g., workshops informing public of what

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[57] A TMDL is a regulatory term in the U.S. Clean Water Act that describes a plan for restoring impaired waters. The TMDL identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards.

impacts results when household chemicals are dumped into storm drains), regulatory measures (e.g., local authority of drainage facility design), public policy measures, and structural measures (e.g., filter strips, grass swales, and detention ponds).

Executive Order 11988 and National Flood Insurance Program

Under Executive Order 11988, FEMA is responsible for management of floodplain areas, which are defined as the lowland and relatively flat areas adjoining inland and coastal waters subject to a one percent or greater chance of flooding in any given year. Also, FEMA administers the National Flood Insurance Program, which requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the one percent annual chance flood zone. FEMA prepares Flood Insurance Rate Maps (FIRMs) that are used to identify areas prone to flooding.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) provides for protection of the quality of all waters of the State of California for use and enjoyment by the people of California. The act also establishes provisions for a statewide program for the control of water quality, recognizing that waters of the State are increasingly influenced by inter-basin water development projects and other statewide considerations, and that factors such as precipitation, topography, population, recreation, agriculture, industry, and economic development vary regionally within the State. The statewide program for water quality control is therefore administered most effectively on a local level with statewide oversight. Within this framework, the act authorizes the SWRCB and RWQCBs to oversee the coordination and control of water quality within California.

San Francisco Bay Water Quality Control Plan (Basin Plan)

San Francisco Bay waters are under the jurisdiction of the San Francisco Bay RWQCB, which established regulatory standards and objectives for water quality in San Francisco Bay in its Water Quality Control Plan for the San Francisco Bay Basin, commonly referred to as the Basin Plan. The Basin Plan is reviewed on a triennial basis and the current plan includes amendments that have been adopted up through March 7, 2023. The Basin Plan identifies existing and potential beneficial uses for surface waters and provides numerical and narrative water quality objectives designed to protect those uses. Identified beneficial uses for the Central Basin of the San Francisco Bay are cold freshwater habitat, commercial and sport fishing, estuarine habitat, industrial service supply, marine habitat, fish migration, municipal and domestic supply, navigation, industrial process supply, preservation of rare and endangered species, water contact recreation, noncontact water recreation, shellfish harvesting, fish spawning, warm freshwater habitat, wildlife habitat (RWQCB, 2023).

Impaired Water Bodies and TMDLs

The USEPA has approved TMDLs for PCBs and mercury in San Francisco Bay, and they have been officially incorporated into the Basin Plan. The RWQCB adopted the San Francisco Bay

Watershed Permit (Order No. R2-2017-0041), which addresses mercury and PCBs in municipal and industrial wastewater discharges (RWQCB, 2017).

General Construction Activity Stormwater Permit

In accordance with NPDES regulations, to minimize the potential effects of construction runoff on receiving water quality, the State requires that any construction activity affecting one acre or more obtain coverage under a Construction General Permit (CGP). *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit),* Order WQ 2022-0057-DWQ, NPDES No. CAS000002, was adopted by the SWRCB was adopted on September 8, 2022, and became effective on September 1, 2023.

CGP applicants are required to prepare and implement a SWPPP which includes implementing BMPs to reduce construction effects on receiving water quality, including erosion and sediment control measures and measures to reduce or eliminate non-stormwater discharges. Examples of typical construction BMPs in SWPPPs include, but are not limited to: using temporary mulching, seeding, or other suitable stabilization measures to protect uncovered soils; storing materials and equipment so as to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; and installing sediment control devices such as gravel bags, inlet filters, fiber rolls, or silt fences to reduce or eliminate sediment and other pollutants from discharging to the City drainage system or receiving waters.

The CGP includes what are known as Construction and Development rule requirements which have non-numeric effluent limitations that apply to all permitted discharges from construction sites (40 CFR 450.21). The effluent limitations are structured to require construction operators to first prevent the discharge of sediment and other pollutants through the use of effective planning and erosion control measures; and second, to control discharges that do occur through the use of effective sediment control measures. Operators must implement a range of pollution control and prevention measures to limit or prevent discharges of pollutants, including those from dry weather discharges as well as wet weather (i.e., stormwater).

Municipal Regional Stormwater Permit

The City of Oakland and ACFCWD maintain waste discharge requirements and a Municipal Regional Stormwater NPDES Permit (MRP) for the discharge of stormwater runoff from their municipal separate storm sewer systems (MS4s). *California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Stormwater NPDES Permit*, Order No. R2-2022-0018, NPDES Permit No. CAS612008 was adopted on May 11, 2022.

The permit prohibits discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. The municipal operations regulations include a number of requirements to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure. Pursuant to Provision C.3 of the MRP, the requirements for new development and redevelopment include source control, site design, and stormwater treatment requirements such as minimizing disturbance of natural infiltration areas and the addition of impervious surfaces, controlling and directing runoff, and the use of infiltration and bioretention measures, among other measures. The MRP requires that Low Impact Development (LID) methods be the primary mechanisms for implementing such controls.

The Alameda Countywide Clean Water Program is a consortium that includes the clean water programs for the 14 cities of Alameda County, plus the Alameda County Flood Control District, Alameda County unincorporated areas, and the Zone 7 Water Agency. The Alameda County Clean Water Program's *C.3 Stormwater Technical Guidance* is meant to help developers, builders, and project sponsors include post-construction stormwater controls in their projects, in order to meet local municipal requirements and State requirements in the MRP.

Phase II General Stormwater Permit (SWRCB Order Nos. 2003-0005-DWQ and 2013-0001-DWQ)

In 2003, the SWRCB adopted the General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer System (MS4s), SWRCB Order No. 2003-0005-DWQ (Phase II General Stormwater Permit), which applies to small municipal separate stormwater systems, including systems owned and operated by the University of California. A revised permit applying to the MS4 at UCSF was approved in 2013 (Order No. 2013-0001-DWQ). The revised Phase II General Permit required UCSF to develop, implement and enforce a Storm Water Management Program designed to minimize the discharge of pollutants into receiving waters; identify appropriate stormwater treatment practices with measurable performance criteria; and ensure that the program includes provisions to address six minimum measures to promote pollutant load reduction. These measures are: public education, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention and good housekeeping.

The revised Phase II permit also required that plans for UCSF projects that create and/or replace (including projects with no net increase in impervious footprint) more than 5,000 square feet of impervious surface include the following:

- Site design measures such as porous pavement, setbacks, and impervious area disconnections to reduce project site runoff.
- LID standards to effectively reduce runoff and pollutants from the project site, including:
  - Source control measures such as permanent and/or operational source control measures at loading docks, fuel dispensing areas, pools, and other areas;
  - Numeric sizing criteria for stormwater retention and treatment; and
  - Stormwater treatment measures and baseline hydromodification management measures.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) requires the formation of local-controlled groundwater sustainable agencies in high- and medium-priority groundwater basins. These groundwater sustainability agencies (GSAs) are responsible for developing and implementing a Groundwater Sustainability Plan (GSP) to ensure the basin is operated within its sustainable yield without causing undesirable results. The latest basin prioritization project, SGMA 2019 Basin Prioritization, was completed in December 2019. DWR designates the East Bay Plain Subbasin as a medium priority basin (DWR, 2023).

The East Bay Plain Subbasin GSP was approved by DWR on July 27, 2023 (EBMUD, City of Hayward, 2023). GSPs include various actions to maintain and improve groundwater supplies. For land use development, this includes proposing or encouraging future development to capture and infiltrate stormwater into the subsurface to recharge groundwater, an action already required under the previously discussed MRP permit.

California Division of Safety of Dams

The DSOD, through Division 3 of the California Water Code, is entrusted with regulatory authority and oversight for dam safety. The DSOD provides oversight of the design, construction, and maintenance of over 1,200 jurisdictional sized dams in California. The DSOD ensures dam safety by:

- Reviewing and approving dam enlargements, repairs, alterations, and removals to ensure that the dam appurtenant structures are designed to meet minimum requirements.
- Performing independent analyses to understand the performance of the dam and appurtenant structures. These analyses can include structural, hydrologic, hydraulic, and geotechnical evaluations.
- Overseeing construction to ensure work is being done in accordance with the approved plans and specifications.
- Inspecting each dam on an annual basis to ensure it is safe, performing as intended, and is not developing issues. Roughly 1/3 of these inspections include in-depth instrumentation reviews of the dam surveillance network data.
- Periodically reviewing the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

The California Office of Emergency Services Dam Safety Program was enhanced though passage of SB 92 (2017). The bill required preparation of Emergency Action Plans (EAPs) (except for dams designated as low hazard). This legislation set forth additional provisions for EAPs including compliance requirements, exercises of the plan and coordination with local public safety agencies.

University of California

UCOP Policy on Sustainable Practices

UC Policy on Sustainable Practices establishes goals in several areas of sustainable practices, including, but not limited to, green building, climate protection, sustainable operations, and sustainable water systems. Under procedures for Sustainable Water Systems, the *Policy on Sustainable Practices* indicates that each campus will develop and maintain a Water Action Plan that identifies long term strategies for achieving sustainable water systems. Each Water Action Plan includes a section on Stormwater Management developed in conjunction with the location stormwater regulatory specialist that:

a. Addresses stormwater management from a watershed perspective in a location-wide, comprehensive way that recognizes stormwater as a resource and aims to protect and restore the integrity of the local watershed(s);

b. References the location's best management practices for preventing stormwater pollution from activities that have the potential to pollute the watershed (e.g., construction; trenching; storage of outdoor equipment, materials, and waste; landscaping maintenance; outdoor cleaning practices; vehicle parking);

c. Encourages stormwater quality elements such as appropriate source control, site design (low impact development), and stormwater treatment measures to be considered during the planning stages of projects in order to most efficiently incorporate measures to protect stormwater quality;

d. If feasible, cites relevant and current location stormwater-related plans and permits; and

e. Includes, to the extent feasible, full cost evaluation of stormwater management initiatives.

UCSF Storm Water Management Program

The UCSF Office of Environmental Health and Safety (EH&S) oversees environmental protection programs at its campus sites, including for stormwater management. EH&S has developed a number of best management practices and pollution prevention requirements for preventing or reducing the discharge of pollutants to stormwater, including from campus site building maintenance and remodeling activities, landscaped maintenance activities, outdoor loading/unloading of materials and outdoor storage of raw materials and containers, outdoor painting and sandblasting, vehicle washing and parking lots, and stormwater conveyance system maintenance (UCSF, 2023).

City of Oakland

Pursuant to the University of California's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. However, UCSF plans to design the Project improvements at the UCSF BCH Oakland campus site to be consistent with requirements of the City of Oakland stormwater management standards, which are described below.

Oakland Municipal Code Chapter 13.16

The City of Oakland's *Creek Protection, Stormwater Management, and Discharge Control Ordinance* (Chapter 13.16 of the Oakland Municipal Code) prohibits activities that would result in the discharge of pollutants to Oakland's waterways or in damage to creeks, creek functions, or habitat. The ordinance requires the use of standard BMPs to prevent pollution or erosion to creeks and/or storm drains. Additionally, a creek protection permit is required for any construction work on creek side properties. The Ordinance establishes comprehensive guidelines for the regulation of discharges to the City's storm drain system and the protection of surface water quality. Under the Ordinance, the City of Oakland Public Works Agency issues permits for storm drainage facilities that would be connected to existing City drainage facilities. The Ordinance includes enforcement provisions to provide more effective methods to deter and reduce the discharge of pollutants to the storm drain system, local creeks, and San Francisco Bay.

City of Oakland Storm Drainage Design Standards

The City of Oakland 2014 *Storm Drainage Design Standards* provides design criteria, standards, policies, and procedures for storm drainage improvements within the City of Oakland. The standards promulgate design practices, runoff determination methods, and hydraulic design requirements. All storm drainage facilities are required to be designed in accordance with these standards, accepted engineering principles, and State and federal water quality regulations.

City of Oakland 2021-2026 Hazard Mitigation Plan

The City of Oakland 2021 – 2026 Hazard Mitigation Plan is an update of the previous hazard mitigation plan the City adopted in 2016. The plan identified potential hazards that the City of Oakland is most vulnerable to, including flooding and dam failure, assesses risks to the City's residents, buildings and critical facilities, and develops a mitigation strategy to reduce the risk of exposure and allow a swift and organized recovery should a disaster occur. The Oakland Fire Department's Emergency Management Services Division oversees its implementation (City of Oakland, 2021).

4.8.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;

c) 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:

   i. Result in 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;

   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; or

   iv. Impede or redirect flow.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Approach to Analysis

Impacts on water quality were evaluated qualitatively by considering the type of pollutants the Project would generate during construction and operational phases and whether meeting the requirements of applicable regulations would reduce potential impacts to a less-than-significant level. Hydrologic and drainage impacts were also evaluated qualitatively for full buildout of the Project. The proposed Project would be regulated by the various laws, regulations, and policies summarized above in Section 4.8.2, *Regulatory Framework*. Compliance by the proposed Project with applicable federal and State laws, regulations, design standards, and plans is assumed in this analysis.

Impact Analysis

Impact HYD-1: Implementation of the NHB Project would have the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality. *(Less than Significant with Mitigation)*

Construction

Project construction would involve ground-disturbing earthwork, including removal of certain existing buildings, structures and paved areas, soil excavation and filling, trenching, and grading. These activities could increase the susceptibility of soils on the Project site to erosion by wind or water. During construction, heavy equipment such as bulldozers, graders, earth movers, heavy trucks, trenching equipment and other machinery is likely to be used. Over the course of construction of the Project, the use of construction equipment and other vehicles could result in spills of oil, grease, gasoline, brake fluid, antifreeze, or other vehicle-related fluids and pollutants. Improper handling, storage, or disposal of fuels and materials or improper cleaning of machinery could result in accidental spills or discharges that could degrade water quality. In addition, the use of equipment and ground disturbing activities could increase erosion, in turn potentially increasing sediment discharged into stormwater that could degrade water quality. As discussed in Section 4.8.2, *Regulatory Framework*, above, construction of the Project would be required to comply with existing regulations designed to reduce or eliminate construction-related water quality effects, including the NPDES CGP and the UCSF Storm Water Program for construction projects on UCSF-owned property.

Before any construction activities commence for the proposed project, an application for coverage under the NPDES CGP would be submitted to the San Francisco Bay RWQCB, a Stormwater Pollution Prevention Plan (SWPPP) would be developed, and a Notice of Intent (NOI) would be filed with the RWQCB. After the RWQCB confirms the applicability of the CGP, and approves the SWPPP, construction could commence. In accordance with the CGP, UCSF would be required to implement the SWPPP for proposed project to minimize water quality impacts during construction and demolition. The SWPPP would identify pollutant sources within the construction area and recommend site-specific BMPs for the control of sediments in runoff and storage and use of hazardous materials to prevent discharge of pollutants into stormwater. Likely BMPs include, but are not limited to:

- Erosion control practices
- Sediment control practices

- Practices to reduce the tracking of sediment onto public and private roads
- Practices to prevent or minimize wind erosion
- Practices to minimize contact with stormwater
- Construction material loading and unloading
- Waste management and disposal
- Stormwater run-on and run-off controls
- Non-stormwater discharges and management
- Maintenance, inspection, and repair of structural controls
- Spill prevention and control
- Post-construction stormwater management
- Trash provisions
- Passive treatment applications
- Construction site monitoring and reporting
- Water quality sampling and analysis

As a project that would create and/or replace more than 2,500 square feet of impervious surfaces, the Project would also be required to submit an Erosion Control Plan to UCSF Project Management and EH&S seven days prior to the start of work. Compliance with the NPDES CGP regulations and the UCSF Storm Water Program would prevent the substantial degradation of water quality during construction of the Project. These regulatory requirements are designed to ensure that construction projects result in water quality discharges that are not in violation of water quality objectives, and as such would be effective in ensuring that construction activities result in less than significant impacts related to water quality.

As explained in Impact HAZ-4 in Section 4.7, *Hazards and Hazardous Materials*, although there is no recorded history of subsurface contaminants on the Project site, there were two cases of subsurface contamination identified elsewhere within the campus site in proximity to the Project site[58]; furthermore, the possibility exists for construction activities to encounter previously unidentified contamination on the Project site. In addition, since the proposed Project includes the excavation of soil during construction (in places up to 28 feet below grade), and existing groundwater levels have previously been estimated at variable depths ranging from 7.5 to 20 feet below grade, it is expected that dewatering would be required during construction. Excavation and dewatering activities could expose construction workers and the environment to hazardous materials if not managed appropriately. To reduce the potential significant impact to construction workers and the environment during excavation and dewatering activities, Mitigation Measure HAZ-4, Construction Soil and Groundwater Management Plan, is identified to be implemented prior to construction. The implementation of this mitigation measure would reduce potential

[58] As discussed in Section 4.7, *Hazards and Hazardous Materials*, one of the cases is going through the process of being closed for UCSF, and the other case was closed as of October 2018.

water quality impacts associated with the discharge of contaminated groundwater extracted during site dewatering to a less than significant level.

Furthermore, as applicable, any off-site improvements that would be constructed outside the campus site boundary would be subject to construction site runoff requirements in accordance with the City of Oakland's *Creek Protection, Stormwater Management, and Discharge Control Ordinance.* As such, any off-site construction impacts to water quality would similarly be less than significant.

Operation

As discussed in Section 4.8.1, *Environmental Setting*, the Project site is largely developed with buildings, structures, and paving, with the exception of small areas of landscaping in the vicinity of the buildings, and the vegetated SR 24 embankment located on the east side of the property. Runoff on the impervious portions of the Project site, depending on location, is currently directed by sheet flow towards on-site storm drains or curbside drains in adjacent streets.

As under existing conditions, stormwater runoff from operation of the Project development would have the potential to contain pollutants common in urban runoff, including metals, oils, and grease, pesticides/herbicides, nutrients, pet waste and garbage/litter. While there would be no substantive change in the type of pollutants associated with the proposed development compared to existing conditions, pollutants in stormwater runoff from urban development would nevertheless have the potential to violate water quality standards if the types and amounts are not adequately controlled or reduced.

As under existing conditions, all stormwater collected on site and conveyed to City of Oakland and ACFCWD stormwater facilities would ultimately be routed and discharged to the San Francisco Bay. Stormwater runoff from the types of urban uses that would result from the Project is regulated under the Municipal Regional Stormwater NPDES Permit (MRP). As discussed in Section 4.8.2, *Regulatory Framework*, the City of Oakland and ACFCWD maintain waste discharge requirements and a MRP for the discharge of stormwater runoff from their municipal separate storm sewer systems (MS4s).

Consistent with post-development BMP requirements, including LID measures, contained within the MRP, development associated with the NHB Project would include operational stormwater features that minimize discharge of pollutants and eliminate prohibited non-stormwater discharges as part of the final drainage design. All stormwater treatment measures proposed on the Project site would be implemented in conformance with Provision C.3 measures of the MRP.

Under the Project, a number of stormwater infrastructure improvements would be implemented on the Project site to accommodate the Project development, and improve stormwater collection and treatment. Stormwater flows collected from the roofs of the new hospital building and interim loading dock building, as well as from the parking structure and hardscaped areas, would be conveyed to several proposed on-site bioretention areas for treatment, after which it would be routed via existing and new private and City storm drains to the ACFCWD culvert. Also, an existing on-site 24-inch City storm drain line would be rerouted around the east side of the footprint of the proposed parking structure.

Stormflows collected in the north and northwest portion of the Project site that are occupied by the existing buildings and proposed loading dock area would be conveyed to proposed Silva Cells[59] and hence to an on-site bioretention area for treatment, following which it would be conveyed to existing City storm drains in 52nd Street. The majority of the Project site east of the existing SR 24 embankment would be paved (as modified by the planned retaining wall relocation project) with the exception of a small area near 52nd Street that would remain vegetated, pervious and self-treating. In addition, proposed landscaping areas throughout the Project site would serve as additional pervious and self-treating areas.

Incorporation of these design features, including LID site design measures, would be effective in minimizing the offsite discharge of stormwater pollutants. As such, Project discharges would not violate water quality standards or waste discharge requirements, or otherwise degrade surface or groundwater quality, and the impact would be less than significant.

Mitigation: Implement Mitigation Measure HAZ-4.

Significance after Mitigation: Less than Significant.

Impact HYD-2: Implementation of the NHB Project would not 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*)

Construction

As explained above, excavation depths during construction are anticipated to extend to a maximum of up to 28 feet below grade. Given the depth of excavation, limited and temporary dewatering would be required during construction; in which case, the extracted water would be discharged to the City sanitary sewer system, after testing and on-site treatment as needed pursuant to the protocols established in the Construction Soil and Groundwater Management Plan required in Mitigation Measure HAZ-4 in Section 4.7, *Hazards and Hazardous Materials*. However, the amount of groundwater extracted during dewatering activities would not be large enough to affect the volume of the underlying groundwater basin.

As a result, Project construction would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that it may impede sustainable groundwater management of the basin. As dewatering during construction would be limited and temporary, and would be properly treated as necessary prior to discharge, the construction-related

[59] Silva Cells is a modular suspended pavement system that use soil volumes to provide on-site stormwater management through absorption, evapotranspiration, and interception.

impact to groundwater recharge and sustainable management of the basin would be less than significant.

Operation

The Project site is largely impervious at the present time and therefore does not provide substantial groundwater recharge. The Project would incrementally increase impervious areas of the Project site from approximately 200,000 square feet (existing pre-project) to 220,100 square feet (post-project), an increase of approximately 20,100 square feet.[60] However, the Project site would include approximately 30,010 square feet of bioretention, landscaped areas and permeable paving that would promote infiltration by draining to pervious surfaces, that would allow for groundwater recharge.

Given the proposed excavation to accommodate the new hospital building basement, the Project proposes measures to prevent groundwater infiltration into the basement. This includes designing the basement for hydrostatic uplift and waterproofing. Sump pumps in the pipe space would be installed only to capture any residual seep that may occur through the waterproofing system. With implementation of these design features, the Project would not require any substantive permanent groundwater dewatering during operation. Given the above factors, operation of the Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that it may impede sustainable groundwater management of the East Bay Plain Subbasin. The impact would be less than significant.

Mitigation: None required.

Impact HYD-3: Construction and operation of the NHB Project would not substantially alter the existing drainage patterns of the site or area, in a manner that has the potential to result in substantial erosion or siltation on- or off- site; would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; and would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flow. ***(Less than Significant)***

Construction

Erosion or Siltation

Ground disturbing activities associated with construction of the Project, including clearing, excavation and grading, would temporarily expose underlying soils and has the potential to result in erosion or siltation on- or off-site. During construction, stormwater drainage patterns could also be temporarily altered. There are no natural water or drainage features on the Project site in the vicinity of where construction would occur under the Project, and current flow of stormwater runoff within the Project site is largely directed to existing on-site storm drain facilities and hence conveyed off-site and ultimately discharged to Bay.

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[60] This is conservatively estimated because it includes the impervious area associated with the retaining wall project that would occur prior to and separate from the Project.

As described above under Impact HYD-1, construction activities associated with the Project would be required to comply with the NPDES CGP and UCSF's Storm Water Program. The contractor would be required to prepare and implement a SWPPP that includes erosion and sediment control BMPs to minimize the potential for erosion and sedimentation. BMPs would include, but would not necessarily be limited to, filtering runoff during construction, avoiding heavy grading and earthwork operations during the rainy season, and incorporating landscaping as early as possible. BMPs would be implemented to control construction site runoff, ensure proper stormwater control and treatment, and reduce the discharge of pollution to the storm drain system. Therefore, with implementation of site runoff controls and erosion and sedimentation control BMPs as required by the NPDES CGP, the potential changes to drainage patterns during Project construction would have a less than significant impact related to flooding, erosion or siltation.

Operation

Erosion or Siltation

As indicated under Impact HYD-1 and Impact HYD-2, the Project development would incrementally change impervious surfaces on the Project site over existing conditions and may result in localized alteration of existing drainage patterns on the Project site. However, the minor changes in drainage patterns would not have the potential to increase erosion or siltation because upon completion of construction, the entire site would be either under buildings, pavement and other hardscaping, or under proposed bioretention, landscaped areas and permeable paving. Furthermore, the Project would include operational stormwater requirements consistent with post-development BMP requirements, including LID stormwater measures, contained within the MRP. Incorporating these design measures into the final project designs would not only reduce peak storm flows but would also ensure that the potential for erosion or sedimentation is minimized.

Flooding and Stormwater Drainage Capacity

As indicated in Section 4.8.1, *Environmental Setting*, the Project site is not located in a 100-year flood hazard zone. As discussed above, the development under the Project would incrementally increase the amount of impervious surfaces over existing conditions, and may result in localized alteration of existing drainage patterns within the Project site. Project stormwater drainage improvements would be implemented on the Project site to adequately collect, treat and convey stormwater water flows, prior to discharge to City storm drains and ACFCWCD culvert for conveyance off-site. The implementation of LID requirements would ensure the Project would not result in an increase in the rate or amount of peak stormwater runoff discharged to City storm drains and ACFCWCD culvert, in conformance with their stormwater management requirements. As such, the Project would not result in flooding on or- off-site; or contribute runoff water that would exceed the capacity of stormwater drainage systems. Considering the above factors, the potential for impacts related to flooding on- or off-site, stormwater drainage capacity, or additional sources of polluted runoff would be less than significant.

Impede or Redirect Flow

The Project site is already developed with stormwater collection facilities, and proposed new stormwater collection facilities at the Project site would ensure new development would not impede or redirect flood flows. Consequently, this potential impact would be less than significant.

Mitigation: None required.

Impact HYD-4: Implementation of the Project would not create a risk of release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones. (*Less than Significant*)

As discussed in Section 4.8.1, *Environmental Setting*, the campus site is not located in a 100-year flood hazard area; and given the location and elevation of the Project site, it is not subject to coastal hazards, including tsunamis, seiches, sea level rise, or extreme high tides. However, the Project site is located within the mapped inundation area of Lake Temescal Dam in the event of a catastrophic failure and breach. Lake Temescal Dam safety is overseen by the EBRPD, the owner of the dam, as well as the California DOSD. The DOSD inspects dams in California on an annual basis; roughly one third of these inspections include in-depth instrumentation reviews of dam surveillance network data. Periodically, DOSD reviews the stability of dams in light of improved design approaches and new findings regarding earthquake hazards and hydrologic stability (DSOD, 2023b).

The City of Oakland General Plan Safety Element states that the City will minimize further the relatively low risks from non-storm-related forms of flooding by requesting from DOSD a timeline for the maintenance inspection of all operating dams in the City, and reviewing procedures adopted by the City pursuant to the Dam Safety Act for the emergency evacuation of areas located below major water storage facilities (City of Oakland, 2004). Furthermore, the City of Oakland will continue to implement its 2021 – 2026 Hazard Mitigation Plan, including its mitigation strategies to reduce the risk of exposure from and responding to hazards, including those related to dam failure.

These regulatory safeguards would ensure that the potential for risk of release of pollutants at the Project site from inundation due to dam failure would be less than significant.

Mitigation: None required.

Impact HYD-5: Implementation of the NHB Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (*Less than Significant with Mitigation*)

Construction

Commonly practiced BMPs, as required by the NPDES CGP, would be implemented to control construction site runoff and reduce the discharge of pollutants from stormwater and other nonpoint-source runoff to storm drain systems. As part of complying with permit requirements during ground-disturbing or other construction activities, water quality control measures and BMPs would be implemented to assist in achieving water quality standards, including water quality objectives that protect designated beneficial uses of surface water and groundwater, as defined in the Basin Plan.

Furthermore, as explained in Impact HAZ-4 in Section 4.7, *Hazards and Hazardous Materials*, to reduce the potential significant impact to construction workers and the environment during the excavation and dewatering activities, Mitigation Measure HAZ-4, Construction Soil and Groundwater Management Plan shall be implemented which would reduce impacts associated with potential releases of hazardous materials to surface and groundwater to a less than significant level. Compliance with the NPDES CGP regulations, and implementation of Mitigation Measure HAZ-4 identified in Section 4.7, would ensure Project construction would not result in substantial degradation of water quality, and thus, ensure that the Project would not conflict with or obstruct implementation of the Basin Plan, and the impact would be less than significant.

As described in Impact HYD-2, above, construction-related impacts to groundwater recharge and sustainable groundwater management of the underlying groundwater basin would be less than significant.

Operation

As discussed in Impact HYD-1, operation of the Project would have a less-than-significant impact related to water quality standards and/or waste discharge requirements. The Project would include installation of surface water treatment project design features (e.g., bioretention areas), which would assist in ensuring that flows from the Project site would be properly treated and would not violate water quality standards or waste discharge requirements. Implementation of these Project design features would improve water quality, as these features are not part of the existing conditions at the Project site. Therefore, the proposed Project operations would be consistent with the Basin Plan, and the impact would be less than significant.

The Project site is located within the East Bay Plain Subbasin GSP. As described in Impact HYD-2, above, operations-related impacts to groundwater recharge and sustainable groundwater management of this groundwater subbasin would be less than significant. Therefore, Project operations would not conflict with or obstruct the implementation of the East Bay Plain Subbasin GSP, and the impact would be less than significant.

Mitigation: Implement Mitigation Measure HAZ-4.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

The geographic scope of analysis for cumulative impacts related to surface hydrology and water quality is Temescal Creek watershed area, including the City of Oakland and ACFCWD stormwater systems that serve the Project site; and for groundwater recharge and groundwater quality is the East Bay Plain Subbasin. Potential cumulative impacts would be associated with the off-site discharge of pollutants, including sediment, due to project construction activities; and increases in discharge of stormwater flows to the stormwater collection system and potential degradation of water quality due to project operations.

Impact C-HYD-1: Construction and operation of the NHB Project, in conjunction with other cumulative development, could cumulatively violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality. *(Less than Significant with Mitigation)*

As discussed in Impacts HYD-1 through HYD-3 and Impact HYD-5, above, compliance with the NPDES CGP requirements and implementation of Mitigation Measure HAZ-4 identified in Section 4.7 would prevent substantial degradation in water quality during construction of the NHB Project, and would be effective in ensuring that construction activities would result in a less than significant impact to water quality. Similarly, as demonstrated in Impacts HYD-1 through HYD-3 and Impact HYD-5, with the implementation of post-development BMP requirements, including LID measures, contained within the MRP, operation of the Project would not violate water quality standards or waste discharge requirements, or otherwise degrade surface or groundwater quality.

UCSF-proposed cumulative projects that would occur on or adjacent to the Project site include the BCH Oakland Infrastructure Improvements project, replacement of the existing fuel oil underground storage tank (UST) with an above ground fuel oil tank, and construction of the Administrative Support Building and related improvements. These cumulative projects could contribute construction related discharges of pollutants, and/or operational increases stormwater flows to the City and ACFCWD stormwater systems. These projects would similarly implement construction-phase controls and long-term stormwater management controls to ensure they would not result in a violation of water quality standards or waste discharge requirements, or otherwise degrade surface or groundwater quality.

Other reasonably foreseeable cumulative development within the Temescal Creek watershed would also contribute construction and/or operational pollutant discharges in stormwater flows to the City and ACFCWD stormwater systems. Similar to the Project, cumulative projects would be required to implement project-specific BMPs and comply with federal, State, as well as local regulations related to stormwater water quality. These regulations include, but are not limited to, the NPDES CGP and the City's Stormwater Management Ordinance. All cumulative projects that disturb more than one acre would include preparation and implementation of a SWPPP to reduce pollutants in stormwater and other non-point source runoff during construction. Cumulative projects that create or replace 5,000 square feet or more of impervious surfaces and have existing impervious surfaces greater than 50 percent must decrease the stormwater runoff rate and volume in accordance with the standards in the City's stormwater management requirements. These regulatory requirements also include LID design measures which must be implemented as part of each cumulative project design and are intended to minimize off-site discharges of stormwater and reduce pollutant loading.

With adherence to these existing regulatory requirements and implementation by UCSF of the proposed stormwater improvements under the Project, the Project's contribution to the potential cumulative impact related to a violation of water quality standards or waste discharge requirements would not be considerable.

Mitigation: Implement Mitigation Measure HAZ-4.

Significance after Mitigation: Less than Significant.

Impact C-HYD-2: Construction and operation of the NHB Project, in conjunction with other cumulative development, would not cumulatively alter the drainage pattern of the site or area, through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site; would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; would not 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 impede or redirect flow. *(Less than Significant)*

Erosion or Siltation

Cumulative projects would likely have ground disturbing activities that would locally alter drainage patterns, which, in turn, could result in erosion or siltation in runoff discharged into the City and ACFCWD stormwater systems.

However, similar to the Project, construction and operation of cumulative projects would be required to implement project-specific BMPs and comply with federal, State, and local regulations related to water quality of stormwater runoff. These regulations include, but are not necessarily limited to, the NPDES CGP and the City's Stormwater Management Ordinance which require that BMPs during construction and operation minimize the potential for erosion or siltation.

Therefore, with adherence to these existing regulatory requirements, the potential cumulative impact related to erosion or siltation would be less than significant.

Flooding and Stormwater Drainage Capacity

Cumulative projects would involve redevelopment and development within what is already a densely developed area with a relatively high percentage of impervious surfaces. However, these cumulative projects could result in increases in impervious surfaces providing additional stormwater runoff that could create or exacerbate flooding and/or exceed the capacity of existing stormwater infrastructure.

As previously discussed, cumulative projects would be required to comply with applicable stormwater runoff regulations, including the MRP and the City's Stormwater Management Ordinance, which includes drainage control requirements that address management of peak stormwater flows and even require reducing stormwater flows from existing conditions, in many cases, such that there could be potential reductions in stormwater volumes compared to existing conditions. In addition, like the Project, other redevelopment projects could include updates to outdated or undersized stormwater infrastructure that no longer meet current demands or applicable requirements. Older infrastructure would be replaced with newer infrastructure that could provide increased capacity to accommodate higher volume flows during peak storm events.

Since the Project would include upgrades to existing infrastructure, address any increases in impervious surfaces with implementation of LID stormwater features, similar to what would be required for other current and future cumulative projects, the potential for flooding or exceedances of stormwater infrastructure capacity would be minimized and the cumulative impact would be less than significant.

Impede or Redirect Flow

As noted above, the campus site is located in a portion of the City that is not within a 100-year flood hazard area. As a result, there is no means for the Project to combine with other cumulative projects and create adverse effects related to impeding or redirecting flood flows. Accordingly, the Project would not result in a considerable contribution to cumulative effects on impedance or redirection of flood flows.

Mitigation: None required.

4.8.4 References

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4.9 Land Use and Planning

This section assesses the potential for construction and operation of the proposed NHB Project to result in significant land use and planning impacts. The section includes a description of the existing environmental setting as it relates to land use and planning, and also provides a regulatory framework that discusses applicable University and local plans and policies. The section presents the significance criteria used to evaluate impacts on land use and planning, and the results of the impact assessment, including any significant impacts and associated mitigation measures.

4.9.1 Environmental Setting

Regional Setting

The regional setting for the proposed Project is the northwestern portion of Oakland and the adjacent cities of Berkeley and Emeryville, a relatively densely developed urban environment that is built out in most areas. Few large tracts of vacant or underused land are available for new development. This area consists of several neighborhoods, each with its own unique physical characteristics and mix of land uses.

Local Setting

Existing Land Uses within the Project Site

The 5.74-acre Project site is located within the 11-acre UCSF BCH Oakland campus site. The Project site is developed with two- to five-story buildings or building additions, including the Patient Tower (five stories), Ford Diagnostic and Treatment Center (D&T Building, three stories), Cardiac Catheterization Lab Building (two stories), B/C Wing (three stories), A/B Wing (four stories), Cafeteria (two stories), Western Expansion Building (three stories), Bruce Lyon Memorial Research Laboratory (two stories), and Bruce Lyon Addition (three stories). Other buildings/additions within the Project site include the Central Utility Plant (two stories), Chiller Building (one story), a 36-foot-tall helistop structure, and several temporary one-story trailers that house office and administrative uses.

The Project site also includes a small amount of open space, which is primarily limited to a courtyard between the A/B and B/C Wings. Within the courtyard there are several mature trees, including a magnolia tree that was planted in 1860; and adjacent to the courtyard is an approximately 800-square-foot play area and "Butterfly Garden." Other open space and landscaped areas include a planting area at the southeast corner of MLK Jr. Way and 52nd Street, the vegetated State Route (SR) 24 embankment, and street trees around the Project site boundary.

Existing Land Use in Vicinity of the Project Site

The Project site is surrounded by facilities within the UCSF BCH Oakland campus site and residential uses to the north, roadways to the south, east and west, with residential uses beyond. Existing land uses that surround the Project site are described below.

Land Uses to the North

52nd Street forms the northern boundary of the Project site. The remainder of the UCSF BCH Oakland campus site is located north across 52nd Street and includes the five-story Outpatient Center 1; six-story Outpatient Center 2; a five-story parking structure; Sports Medicine Clinic trailer and sports court; and several other small buildings used as office space or for other incidental hospital-related uses. UCSF BCH Oakland also maintains the Family House (16 residential units) at 5222 Dover Street, which provides short-term stay for BCH Oakland patient families. Two one-story single-family homes that are not affiliated with the hospital are also located north of 52nd Street among campus buildings.

Land Uses to the East

SR 24, including the westbound on-ramp that begins at 52nd Street, forms the east boundary of the Project site. To the east of the SR 24 is the Temescal neighborhood, which primarily consists of one- to two-story single-family residences. Multi-family homes and mid-sized apartment complexes up to five stories in height are also interspersed throughout the area. The main commercial area is centered around Telegraph Avenue, located about 0.2 miles east of the Project site between the MacArthur Bay Area Rapid Transit (BART) Station and 51st Street.

Land Uses to the South

The eastbound off-ramp of SR 24, where it crosses beneath SR 24 and connects with Martin Luther King (MLK) Jr. Way, forms the southern boundary of the Project site. Elevated BART tracks also continue south of the Project site and beneath SR 24. Land uses south of the Project site are generally dominated by residential neighborhoods divided by SR 24. These neighborhoods primarily consist of one- to two-story single-family homes. The MacArthur BART Station is located approximately 0.5 miles to the south.

Land Uses to the West

MLK Jr. Way, which is divided by elevated BART tracks, forms the western boundary of the Project site. The UCSF BCH Oakland annex employee surface parking lot and residential uses are located across MLK Jr. Way. Residential land uses within this area consist of both single- and multi-family homes. The border between Oakland and Emeryville is also located less than 0.5 miles to the west, and residential neighborhoods dominate the land use pattern between the Project site and the edge of the city.

4.9.2 Regulatory Framework

UCSF

UCSF 2014 LRDP

Each campus within the University of California system is required periodically to prepare a Long-Range Development Plan (LRDP), which sets forth concepts, principles, and land use plans intended to guide future physical growth and development of the campus. Current development at UCSF is guided by the UCSF 2014 LRDP, which includes specific policies related to future development program and space needs at all UCSF campus sites.

The UCSF 2014 LRDP, as amended through January 2021, currently includes UCSF's three primary campus sites in San Francisco at Parnassus Heights, Mission Bay and Mount Zion; buildings owned by UCSF in San Francisco (at Mission Center, 654 Minnesota Street, animal care and research facilities at Hunters Point, and Buchanan Dental Center) and a material management facility in South San Francisco; and more than a million square feet of space leased by UCSF for a variety of purposes at numerous locations in San Francisco.

The UCSF BCH Oakland campus site is not currently included in the UCSF 2014 LRDP, and consequently, it is not subject to the LRDP's planning objectives. (Please see Chapter 3, *Project Description*, which describes UCSF's proposal to amend the UCSF 2014 LRDP to include the UCSF BCH Oakland campus site and site-specific objectives.)

The following campus-wide objectives found in the UCSF 2014 LRDP relate to land use as it pertains to the proposed NHB Project (UCSF, 2021):

Campus Wide Objectives

1. **Respond to the City and Community Context**
    - B. Acknowledge and respond to local zoning and height and bulk limitations to the extent possible.
    - C. Design new buildings to be sensitive to the surrounding neighborhood and landscape, taking into account use, scale, potential noise generation, and density.
    - D. Incorporate pedestrian-friendly urban design principles to relate campus buildings to surrounding streetscape and neighborhoods.
2. **Accommodate UCSF's Growth Through 2035**
    - A. Meet physical needs for growth in research, clinical, and instructional programs at appropriate locations.
    - D. Locate programs and activities at campus sites where they are suitable and compatible with UCSF's missions, and best foster collaboration, accommodate interdependent programs and reinforce academic and operational relationships.
    - E. Locate buildings in accordance with campus site-specific objectives, functional zones, and other LRDP elements related to open space, transportation, and utilities.
    - F. Site and design buildings and develop open space in accordance with the universal planning and design principles contained in UCSF's *Physical Design Framework.*
3. **Ensure UCSF'S Facilities are Seismically Safe**
    - A. Ensure inpatient facilities meet state seismic requirements, as set forth in the *Alquist Seismic Safety Act* (SB 1953), by constructing and maintaining modern, seismically safe hospitals and facilities that will remain operational in the event of a major earthquake.
    - B. Plan new facilities and implement improvements to comply with UC's Seismic Safety Policy, to ensure a seismically safe environment for UCSF patients, visitors, physicians and staff.
    - C. Designate buildings for renovation, demolition, and replacement as warranted.

4. Promote Environmental Sustainability

A. Optimize the use of existing facilities, sites, and campus space through repurposing, renovation, densification and consolidation where appropriate.

UCSF Functional Zones

The Land Use element of the UCSF 2014 LRDP includes functional zone maps for all UCSF campus sites to provide guidance for where certain types of uses are best located based on desired land use adjacencies and other geographic considerations. As discussed above, the BCH Oakland campus site is not included in the UCSF 2014 LRDP, and consequently, UCSF does not currently maintain a functional zone map for the campus site. (Please see Chapter 3, *Project Description*, which describes UCSF's proposal to amend the 2014 LRDP to include the UCSF BCH Oakland campus site; this would include approval of a functional zone map for the BCH Oakland campus site that reflects planned predominant land uses.)

UCSF Physical Design Framework

The UCSF Physical Design Framework as amended in December 2020 sets forth a vision for the physical development of UCSF campus sites in the City consistent with its mission of "Advancing Health Worldwide" (UCSF, 2020). It serves as the foundation for UCSF to plan and design future projects according to a clear and consistent set of planning and design principles, guidelines and strategies. The Physical Design Framework provides guidance to ensure that future projects at the BCH Oakland campus site enhance the physical environment; and enable UCSF to determine if those future project designs are consistent with these principles, guidelines and strategies.

The following are universal planning and design guidelines applicable to the proposed Project:

Respond to Context While Reinforcing Identity

Guideline 1: Each campus site should be planned and designed to reflect, and in turn shape, its specific urban context.

d. Design improvements to campus streets that are complementary to that of surrounding neighborhoods.

f. Ensure that each campus building and open space reinforces a cohesive campus identity.

Guideline 2: …(C)ampus edges should respond to their specific urban context.

a. Bridge campus development and the surrounding city through a transition of building height, massing and use and public open spaces.

Guideline 3: The design of campus buildings should respond contextually to both the immediate campus as well as the surrounding city.

a. Relate buildings to their whole context by considering the height, massing, styles, color, and materials of adjacent buildings and/or urban fabric.
g. Use harmonious horizontal and vertical façade components to reduce the appearance of mass of very large buildings.

h. Integrate rooftop mechanical equipment as part of a building's architecture (e.g., as sculptural rooftop elements), or screen from view behind parapets or other devices.

Welcome the Community

Guideline 1: Special attention should be given to how buildings meet the ground in order to ensure that buildings successfully relate to pedestrians, are scaled to human activity and provide visual interest.

a. Design buildings, especially at the ground level, with consideration to human scale through building articulation, the use of color and materials, the scale and placement of doors and windows, and the use of building overhangs, arcades or other architectural techniques.

f. Locate loading docks and ground level service bays to be minimally visible but accessible by appropriate vehicles, and screen them as much as possible.

Ensure Connectivity to and Within the Campus

Guideline 1: Campus edges at the public interface should connect the campus to the city in a positive way.

a. Provide neighborhood connectivity to, around, and through campus site where appropriate.

Create Spaces to Promote Collegiality

Guideline 1: Campus open spaces should be comfortable, active, safe and attractive spaces that are extensions of the public realm of the city.

a. Site and mass campus buildings and their entries to shape and activate sunny and welcoming open space area, and to minimize shade and wind effects on important outdoor spaces.

b. Provide a variety of outdoor spaces on each campus site to meet the different needs of the campus population and community at large.

Lead Through Conservation and Sustainability

Guideline 1: …(B)uildings should be designed according to the following sustainability guidelines.

d. Prepare shade diagrams, wind studies and noise assessments to ensure the comfort and health of pedestrians and open space users.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible. City plans and regulations that are germane to the Project as it relates to land use and planning are summarized below.

Oakland General Plan

The City of Oakland General Plan serves as the guiding document for the City's planning and future development. The Oakland General Plan includes the Land Use and Transportation Element (LUTE) (adopted March 24, 1998), including the 2019 Oakland Bike Plan (July 2019) and the Pedestrian Master Plan (December 2007, updated June 2017), which are adopted as part of the LUTE; the Historic Preservation Element (adopted March 8, 1994 and amended July 21, 1998); the Open Space, Conservation, and Recreation (OSCAR) Element (adopted June 11, 1996); the Safety Element (November 2004, amended 2012); and the Noise Element (June 21, 2005, amended 2012).

Objectives and Polices

Land Use and Transportation Element (LUTE)

The LUTE addresses land use and transportation issues in Oakland. Objectives and policies that are relevant to the proposed Project include the following:

> **Objective N2:** Encourage adequate civic, institutional, and education facilities located within Oakland, appropriately designed and sited to serve the community.
>
> > ***Policy N2.1:*** Designing and Maintaining Institutions. As Institutional uses are among the most visible activities in the City and can be sources of community pride, high-quality design and upkeep/maintenance should be encouraged. The facilities should be designed and operated in a manner that is sensitive to surrounding residential and other uses.
> >
> > ***Policy N2.4:*** Locating Services Along Major Streets. New large-scale community, government, and institutional uses should be located outside of areas that are predominately residential. Preferably, they should be located along major thoroughfares with easy access to freeways and public transit or in the Downtown.
>
> **Objective T3:** Provide a hierarchical network of roads that reflects desired land use patterns and strives for acceptable levels of service at intersections.
>
> > ***Policy T3.5:*** Including Bikeways and Pedestrian Walks. The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.
> >
> > ***Policy T4.1:*** Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.

Open Space, Conservation and Recreation (OSCAR) Element

The OSCAR element addresses the management of open land, natural resources and parks in Oakland. Objectives and policies that are relevant to the proposed Project include the following:

> **Objective OS-3:** Institutional and Functional Open Space. To retain institutional and functional open space areas and enhance their recreational and aesthetic benefits.
>
> > ***Policy OS-3.1:*** Retain open space at Oakland's universities, colleges, and other institutions where such open space provides recreational, aesthetic, conservation, or historic benefits to the community.
>
> **Objective CO-4:** Water Supply. To maintain a water supply sufficient to meet local needs while minimizing the need to develop new water supply facilities.
>
> > ***Policy CO-4.1:*** Emphasize water conservation and recycling strategies in efforts to meet future demand.
> >
> > ***Policy CO-4.2:*** Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems, which minimize water consumption.

Objective CO-7: Protection of native plant communities. To minimize the loss of native plant communities and restore these communities where they have been damaged or lost, and to preserve Oakland's trees unless there are compelling safety, ecological, public safety, or aesthetic reasons for their removal.

Policy CO-7.1: Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts to these communities.

Policy CO-7.4: Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works' reasons.

Noise Element

The Noise element identifies and appraises noise in Oakland and analyzes and quantifies current projected noise levels in the community. Objectives and policies that are relevant to the proposed Project include the following:

Policy 1: Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.

Policy 3: Reduce the community's exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City.

Land Use Designation

The General Plan designation for the Project site is Institutional. According to the General Plan, the intent and desired character of the Institutional classification is to create, maintain, and enhance areas appropriate for educational facilities, cultural and institutional uses, health services and medical uses as well as other uses of similar character. The maximum floor area ratio (FAR) for this classification is 8.0.

Oakland Planning Code and Zoning Ordinance

The Planning Code serves to implement General Plan policies and is found in the Oakland Municipal Code, Title 17. The Planning Code governs land uses and development standards, such as building height, bulk and setback, for specific zoning districts within Oakland.

The Project site is zoned Medical Center (S-1) on the City's zoning map. The Planning Code states that the S-1 zone is intended to create, preserve, and enhance areas devoted primarily to medical facilities and auxiliary uses, and is typically appropriate to compact areas around large hospitals. Residential, civic, and medical service uses are permitted by right in this district, and there are no prescribed height maximums, except on lots lying on a boundary of other zones. The maximum permitted FAR under this designation is 4.00.

4.9.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Physically divide an established community?

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

c) Exceed an LRDP EIR standard of significance by conflicting with local land use regulations such that a significant incompatibility is created with adjacent land uses?

Criterion Not Analyzed

There would be no impact related to the following topic for the reasons described below:

- ***Physically divide an established community*.** The Project site is in north Oakland, a highly developed urban area. The proposed Project would include the construction of a new hospital building, a new parking structure with a rooftop helistop; and renovation and/or structural retrofitting of existing buildings within the Project site, which is confined by 52nd Street to the north, SR 24 to the east and south, and MLK Jr. Way to the south and west. Project construction and operation would be limited to the Project site, and thus would not involve the vacation of any public streets or pedestrian access ways. As the proposed Project would not physically divide an established community, this topic will not be evaluated further in this section.

Approach to Analysis

The evaluation of land use impacts in this section is based on information obtained from UCSF about the proposed Project; review of prior environmental review documentation for the campus site; review of applicable UCSF land use and planning documents, and review of documents pertaining to land use published by the City Oakland, including the General Plan. The analysis discusses whether the proposed Project would be consistent with applicable land use plans and policies that were adopted for the purpose of avoiding or mitigating an environmental effect. Land use policies are policies that pertain to the type, location and physical form of new development. For this analysis, policies "adopted for the purpose of avoiding or mitigating an environmental effect" are considered those that, if implemented and adhered to, would avoid or mitigate physical impacts on the environment. For each potential impact, the analysis compares the impact to the standards of significance listed above and determines the impact's level of significance under CEQA.

Impact Analysis

Impact LU-1: Implementation of the proposed NHB Project would not cause a significant environmental impact due to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. (*Less than Significant*)

As noted above, pursuant to the University of California's constitutional autonomy, development and uses on property under the control of the University that are in furtherance of the University's educational purposes are not subject to local land use regulation. The University is the only agency with land use jurisdiction over programs and projects proposed on the BCH Oakland campus site.

The UCSF 2014 LRDP is the applicable land use plan adopted by the University for guiding the development of its campus while avoiding or mitigating its environmental impacts. The UCSF BCH Oakland campus site is not currently included in the UCSF 2014 LRDP, and consequently, it is not covered by the 2014 LRDP's planning objectives. As the UCSF BCH Oakland campus site is controlled by the University, UCSF proposes to amend the UCSF 2014 LRDP to include the BCH Oakland campus site. Approval of an amendment of the 2014 LRDP would be requested from the UC Regents at the same time that the NHB Project is presented to the Regents for approval.

The proposed Project is evaluated below for its potential to conflict with the 2014 LRDP, as amended. The Project's consistency with the UCSF Physical Design Framework is also discussed. In addition, an evaluation of the potential for the Project to conflict with applicable City of Oakland policies is provided below.

Consistency with UC Plans and Policies

Consistency with the UCSF 2014 LRDP as Amended

With the proposed amendment to include the UCSF BCH Oakland campus site, the proposed Project would be consistent with the applicable planning principles and concepts set forth in the UCSF 2014 LRDP. As discussed below, under *Consistency with Oakland Plans and Policies*, the proposed Project buildings would be within the City zoning FAR limits, and consequently, the Project would be consistent with UCSF 2014 LRDP campus-wide objective 1.A.

The largest and tallest of the proposed buildings – the new hospital building – would be centrally located within the Project site, set back from both 52nd Street, MLK Jr Way and SR 24, and adjacent to existing clinical uses. The proposed parking garage would be located in the south portion of the Project site adjacent to existing transportation facilities and across from UCSF's existing surface parking facility on MLK Jr Way. In addition, the exterior material palette for the proposed new buildings would be relatively neutral and light to complement the existing architecture elsewhere on the Project site. Lastly, as explained below, under *Consistency with Oakland Plans and Policies*, operation of the proposed Project would not conflict with the City's established noise standards. Given these factors, the Project would be consistent with UCSF 2014 LRDP campus-wide objective 1.B.

The Project would include elements to improve pedestrian access and circulation such as providing sidewalks along the new internal streets within the Project site and improving the sidewalks along the adjacent public streets. Consequently, the Project would be consistent with UCSF 2014 LRDP campus-wide objective 1.C.

The proposed new hospital building and renovation improvements would include modernizing the aging, obsolete and undersized existing facilities at the UCSF BCH Oakland campus site, and addressing severe constraints on capacity and access to pediatric and mental health care by increasing inpatient beds, mental health and emergency department services. In doing so, the proposed Project would be consistent with the UCSF 2014 LRDP campus-wide objective 2.A to meet physical needs for growth in its clinical programs.

The proposed location and type of development proposed would be consistent with the proposed functional zone map that would be included in the UCSF 2014 LRDP as part of proposed amendment to this document. As shown in Figure 3-27 in Chapter 3, *Project Description*, the functional zone map for the campus site includes clinical, parking open space, and housing (for the Family House) designations. As demonstrated in Section 4.11 *Transportation*, and Section 4.12, *Utilities and Service Systems*, and parks and recreation in Section 4.13, *Effects Found Not to Be Significant*, the Project impact in these topics would be less-than-significant, and the Project would not conflict with transportation-, utilities-, and open-space-related goals and policies in the UCSF 2014 LRDP. Consequently the proposed Project would be consistent with UCSF 2014 LRDP campus-wide objective 2.E. As demonstrated below under *Consistency with the UCSF Physical Design Framework,* the Project would not conflict with the UCSF Physical Design Framework, and consequently, would be consistent with UCSF 2014 LRDP campus-wide objective 2.F.

Furthermore, by providing a new seismically-sound, state-of-the-art inpatient facility, the project would be consistent with the UCSF 2014 LRDP campus-wide objectives 3.A and 3B to meet applicable seismic requirements, and comply with UC's Seismic Safety Policy. The proposed Project clearly identifies buildings for renovation, demolition and new construction, and consequently, would be consistent with UCSF 2014 LRDP campus-wide objective 3.C.

The new hospital building would connect to the adjacent renovated Patient Tower and D&T Building, and the three buildings together, would effectively function as one hospital under the Project. As such, these combined facilities would be consistent with the UCSF 2014 LRDP campus-wide objective 2.D for locating programs and activities together to best foster collaboration and accommodate interdependent programs, and reinforce academic and operational relationships. The proposed renovated facilities would also be consistent with the UCSF 2014 LRDP campus-wide objective 4.A to optimize the use of existing facilities and campus space through repurposing, renovation, densification and consolidation where appropriate.

As amended, the UCSF 2014 LRDP would include a functional land zone map for the BCH Oakland campus site (please see Figure 3-14 in Chapter 3, *Project Description*). The majority of the Project site, including the site of the proposed new hospital building and site support building, and existing buildings, would be located within a Clinical functional zone, which designates clinical activities as the predominant use, with secondary uses including offices, research activities, instruction space, support uses, open space, and parking. The proposed Project would include new inpatient services, expanded emergency department, diagnostic and treatment facilities, clinical support, logistic support uses, public areas and open space, all of which would be consistent with the Clinical functional zone designation of the Project site. Similarly, existing hospital facilities that would be renovated under the Project would be consistent with the Clinical functional zone designation. The southern portion of the Project site that would include the proposed parking structure, would be designated a Parking functional zone. As such, the proposed Project would be consistent with the UCSF 2014 LRDP campus-wide objective 2.E to locate buildings in accordance with functional zones. The Project would also not result in land use conflicts with adjacent existing land uses on the campus site (i.e., north of 52nd Street) because these uses would also be consistent with the planning principles of the amended UCSF 2014 LRDP and the corresponding functional zones.

Consistency with the UCSF Physical Design Framework

The proposed Project would be consistent with the applicable universal planning and design guidelines set forth in the UCSF Physical Design Framework, as amended. Consistent with the Physical Design Framework guidelines to relate buildings to their whole context by considering height, massing, style, color and materials of adjacent buildings,[61] and to reduce the appearance of the building mass,[62] the proposed new hospital building would include articulation to break up the overall size of the building and minimize its perceived massing; and use an exterior material palette that would be relatively neutral and light to complement the existing campus architecture. Consistent with the Physical Design Framework guideline to screen mechanical equipment from view,[63] the buildings would include perimeter penthouse screening to shield rooftop mechanical equipment. Consistent with the Physical Design Framework guideline to provide outdoor space,[64] the new hospital building would provide opportunities for outdoor space, including outdoor terraces. Consistent with the Physical Design Framework guidelines regarding shade, wind and noise considerations in its design,[65] the Project incorporates measures such as screening and enclosures to attenuate noise from the building's stationary noise sources.

In summary, the Project would not conflict with the amended UCSF 2014 LRDP or with the UCSF Physical Design Framework.

Consistency with Oakland Plans and Policies

As described above, UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible.

The proposed Project would redevelop the Project site and add new medical facilities. Vehicular access to/from the Project site would be improved at 52nd Street, and a vehicular egress point on MLK Jr. Way would be provided. Pedestrian walkways adjacent to and within the Project site would be improved. Landscaping would be located within and at the perimeter of the Project site. As a result, the proposed medical facilities would be designed and operated in a manner that is sensitive to the surrounding community (LUTE Policy N2.1).

Residential neighborhoods are located to the north, south, and west and are separated from the Project site by the remainder of the BCH Oakland campus site and surrounding roadways.

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61 Universal planning and design guideline: Respond to Context While Reinforcing Identity, Guideline 3.a.

62 Universal planning and design guideline: Respond to Context While Reinforcing Identity, Guideline 3.g.

63 Universal planning and design guideline: Respond to Context While Reinforcing Identity, Guideline 3.h.

64 Universal planning and design guideline: Create Spaces to Promote Collegiality, Guideline 1.b.

65 Universal planning and design guideline: Create Spaces to Promote Collegiality; Guideline 1.a; Lead Through Conservation and Sustainability, Guideline 1d.

Hospital uses at the campus site have co-existed with residential uses in this area for the past 100 years. None of the new medical facilities on the Project site would be located directly adjacent to existing residential neighborhoods. Furthermore, the proposed Project would continue to provide access to MLK Jr. Way, a highly utilized arterial within the City that provides access to the adjacent SR 24 (LUTE Policy N2.4).

As indicated above, the Project would include elements to improve pedestrian access and circulation such as providing sidewalks along the new internal streets within the Project site and improving the sidewalks along the adjacent public streets. (LUTE Policy T3.5). It should also be noted that as part of the City of Oakland MLK Jr. Way Complete Streets Paving Project, the City plans to enhance the existing pedestrian crossing across MLK Jr. at 51st Street by installing a pedestrian hybrid beacon, curb extensions, and a widened median.

Bike racks and bike lockers would be located at key areas of the Project site to be used by employees and visitors. In addition, UCSF would continue its free shuttle between the campus site and the MacArthur BART Station during Project construction and operation. These new improvements and continued shuttle program would encourage use of alternative modes of transportation (LUTE Policy T4.1).

While the proposed Project would result in the loss of limited open space, it would also provide new landscaping, including native and ornamental shrubs and groundcover, streetscape planting including new street trees, and biofiltration planting areas (OSCAR Policy OS-3.1).

The proposed Project would result in the removal of 28 protected trees on or adjacent to the Project site, including the southern magnolia tree planted within the Project site in 1860, would require removal for construction of the Project. (This excludes 50 trees located within the eastern portion of the Project site occupied by the SR 24 embankment, which would be removed separate from the Project). UCSF will conform to the City of Oakland Tree Protection Ordinance to the maximum extent feasible during tree removal for construction, including marking off protected trees, and replacing trees within the public right-of-way (street trees) in coordination with the City. As part of the efforts to retain the legacy of the southern magnolia tree, this tree would be memorialized as a cultural resource, propagated from seeds or cuttings from the existing southern magnolia tree, and replaced with a new magnolia street planted as close as possible to its historic location (please see Section 4.3, *Cultural Resources and Tribal Cultural Resources*). UCSF would also review the feasibility of replanting magnolia trees taken from seeds or cuttings from the existing southern magnolia tree at the Dover Street entrance to the Project site, where space may be limited. As such, the Project would generally be consistent with OSCAR Policy CO-7.4.

The proposed Project would conserve water with the inclusion of low-flow fixtures and process water systems that would reduce building water use (OSCAR Policy CO-4.1). Furthermore, the proposed Project would include drought tolerant native landscaping for much of the site to minimize the amount of water required for irrigation (OSCAR Policy CO-4.2).

The UCSF BCH Oakland campus site, including the Project site, is in an area that includes a mix of uses and varied sources of noise. Residential areas are in the vicinity, and the site is bordered by high-volume roadways and other transportation uses, such as SR 24, MLK Jr. Way and elevated BART tracks. In addition, an existing helistop is located on the Project site and helicopter noise is occasionally generated by this facility. As discussed in Section 4.10, *Noise and Vibration*, operation of the proposed Project would not conflict with the land use compatibility guidelines identified in the General Plan or generate noise levels in excess of established standards (Noise Policy 1). The proposed Project would not result in a perceptible permanent increase in ambient noise levels at sensitive land uses in the project vicinity and would not result in exposure of sensitive persons to noise levels in excess of established standards (Noise Policy 3).

In summary, the proposed Project would not conflict with applicable City of Oakland policies that address compatibility with surrounding uses, access to major thoroughfares and transit, provision bikeways and pedestrian facilities, and the encouragement of alternative modes of transportation. In addition, the proposed Project would not conflict with applicable City of Oakland General Plan policies with respect to open space, water conservation, tree protection, and noise. Furthermore, the proposed Project would not conflict with the Institutional land use designation for the Project site as health services and medical uses are permitted under this designation. The proposed Project would have a FAR of approximately 1.3, and in conjunction with existing building development on the Project site that would remain under the Project, the total combined FAR on the Project site would be approximately 2.44. These FAR values would be less than the maximum FAR of 8.0 allowed by the City for this land use designation. For these reasons, the impact would be less than significant.

For the reasons set forth above, the proposed Project would have a less-than-significant impact regarding conflict with land use plans and policies adopted for the purpose of avoiding or mitigating an environmental effect.

Mitigation: None required.

Impact LU-2: Development under the proposed NHB would not conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created. (*Less than Significant*)

The proposed new hospital building would be approximately 332,523 gross square feet (gsf) and eight levels in height, and measure about 116 feet above ground level (agl) to the building main roof (and approximately 167 feet agl to top of rooftop mechanical equipment). In comparison, the tallest existing building on the Project site is the Patient Pavilion building, at approximately 67 feet agl to the building roof, and 93 feet agl to the top of rooftop mechanical equipment. As such, the proposed new hospital would range between approximately 49 feet and 74 feet agl taller than the Patient Pavilion.

The proposed site support building would be 6,100 gsf, and one story in height (32.5 feet tall to the top of mechanical screen). The proposed parking structure would consist of 4 levels; the maximum height of the parking structure would be approximately 50 feet agl. The Project site is zoned Medical Center (S-1) on the City's zoning map. There are no prescribed height maximums for this designation, except on lots lying on a boundary of other zones. The maximum permitted

FAR under this designation is 4.00. As discussed above, the proposed Project would have a FAR of approximately 1.3, and in conjunction with existing building development on the Project site that would remain under the Project, the total combined FAR on the Project site would be approximately 2.44. The FAR would be less than maximum permitted FAR for the Project site.

As noted above in Impact LU-1, the University is exempt from local zoning whenever using property under its control in furtherance of its educational mission. However, UCSF strives to respond to City zoning codes to the extent possible in accordance with LRDP Objective 1: Respond to the City and Community Context. With respect to the new hospital building, this would be achieved in part through the design of the new hospital building consistent with the UCSF's Physical Design Framework. As discussed in Impact LU-1, the new hospital building would include terracing and articulation to break up the overall mass of the building and minimize its perceived massing; and rooftop mechanical equipment would be hidden from view behind perimeter screening.

Mitigation: None required.

Cumulative Impacts

Impact C-LU-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a conflict with land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect or a conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created. (*Less than Significant*)

The campus site is situated in a built-out urban area surrounded by a mix of land uses. The cumulative projects considered in this analysis include development projects at the campus site that were previously proposed under the Children's Hospital and Research Center Oakland (CHRCO) Campus Master Plan Project, but not yet implemented (Administrative Support Building Project, BCH Oakland Infrastructure project); other planned improvements on the campus site, and off-campus development in the campus site vicinity. Generally, opportunities for new development are limited due to the constrained nature of the campus site, and future campus growth would require building replacements and renovations rather than new construction on undeveloped tracts of land. Potential growth in the vicinity of the campus site would also be limited to the intensification of existing uses rather than a substantial change from established land uses. As discussed above, future development on the campus site would be consistent with the UCSF 2014 LRDP as amended, and the UCSF Physical Design Framework. Anticipated development in the campus site vicinity would generally conform with objectives and policies found in the Oakland General Plan and permitted uses and density/intensity requirements found in the Oakland Planning Code. Therefore, cumulative development would not result in a conflict with land use plans and policies adopted by the University and the City for the purpose of avoiding or mitigating environmental impacts. The cumulative impact would be less than significant.

The components of the proposed Project would not conflict with the City's Medical Center (S-1) zoning designation of the campus site. Therefore, the cumulative impact of the proposed Project and future development with regard to land use compatibility would be less than significant.

Mitigation: None required.

4.9.4 References

City of Oakland, 2007. Land Use and Transportation Element of the Oakland General Plan, March 24, 1998, amended June 21, 2007.

City of Oakland, 1996. Open Space, Conservation and Recreation Element of the Oakland General Plan, June 11, 1996.

City of Oakland, 2012. Noise Element of the Oakland General Plan, June 21, 2005, amended June 2012.

City of Oakland, 2022. City of Oakland Planning Code – Title 17. https://www.oaklandca.gov/resources/planning-code. Accessed May 10, 2023.

University of California San Francisco (UCSF), 2021. *UCSF 2014 Long Range Development Plan*. Amended January 2021.

UCSF, 2020. *Physical Design Framework*. Amended December 2020.

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4.10 Noise and Vibration

This section describes and evaluates the potential for the construction and operation of the New Hospital Building (NHB) Project to result in significant noise and vibration impacts. The section contains a description of the ambient noise conditions on the UCSF Benioff Children's Hospital Oakland (BCH) campus site and in the surrounding area; includes a summary of the applicable regulations related to noise and vibration; identifies criteria used to determine impact significance; provides an analysis of the potential noise and vibration impacts associated with the construction and operations of the Project; and identifies feasible mitigation measures that could mitigate potentially significant impacts.

4.10.1 Environmental Setting

Noise Background

Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that the sound wave travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Since the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as "dBA." The dBA, or A-weighted decibel, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. An increase of 10 dBA in the level of a continuous noise represents a perceived doubling of loudness. The noise levels presented herein are expressed in terms of dBA, unless otherwise indicated. **Table 4.10-1** shows some representative noise sources and their corresponding noise levels in dBA (Caltrans, 2013).

Planning for acceptable noise exposure must take into account the types of activities and corresponding noise sensitivity in a specified location for a generalized land use type. Some general guidelines are as follows: sleep disturbance can occur at noise levels above 35 dBA; interference with human speech begins at about 60 dBA (FICON, 1992). Hearing damage can result from prolonged exposure to noise levels in excess of 85 to 90 dBA as an 8-hour time weighted average (NIOSH, 2018).

Attenuation of Noise

Noise from line sources, such as roadway traffic, attenuates (lessens) at a rate of 3.0 to 4.5 dBA per doubling of distance from the source, based on the inverse square law and the equation for cylindrical spreading of noise waves over hard and soft surfaces.

TABLE 4.10-1
TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT

Common Outdoor Activities	Decibels (dBA)	Common Indoor Activities
Jet Flyover at 1,000 feet	110	Rock Band
Gas Lawnmower at 3 feet	100 90	Very Loud
Diesel Truck at 50 feet at 50 mph	85	Food Blender at 3 feet
Near Freeway Auto Traffic	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime	75	
Gas Lawnmower at 100 feet	70 65	Vacuum Cleaner at 10 feet Normal Speech at 3 feet
Commercial Area Heavy Traffic at 300 feet	60	
	55	Large Business Office
Quiet Urban Daytime	50	Dishwasher in next room
Quiet Urban Nighttime	40	Theater, Large Conference Room Background
	30	Library
Quiet Rural Nighttime	25	Bedroom at Night

SOURCE: Caltrans, 2013.

Noise from point sources, including stationary mobile sources such as idling vehicles or onsite construction equipment, attenuates at a rate of 6.0 to 7.5 dBA per doubling of distance from the source, based on the inverse square law and the equations for spherical spreading of noise waves over hard and soft surfaces. Based on these attenuation properties of noise, for the purposes of this impact analysis, it is assumed that noise from line and point sources to a distance of 200 feet attenuates at rates of between 3.0 and 6.0 dBA per doubling of distance, and the noise from line and point sources at a distance greater than 200 feet attenuates at a rate of 4.5 to 7.5 dBA per doubling of distance, to account for the absorption of noise waves due to ground surfaces such as soft dirt, grass, bushes, and intervening structures (Caltrans, 2009).

Noise Descriptors

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given period of time. Community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise effects. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The L_{eq}, or equivalent sound level, is used to describe noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

L_{90}: The level of noise exceeded 90 percent of the time is sometimes conservatively considered as the background ambient noise level for the purposes of assessing conformity with noise ordinance standards with respect to noise from stationary equipment or entertainment venues.

L_{dn}: Also termed the day-night average noise level (DNL), the L_{dn} is the average A-weighted noise level during a 24-hour day, obtained after an addition of 10 dB to measured noise levels between the hours of 10 PM to 7 AM to account for greater nighttime noise sensitivity.

CNEL: CNEL, or Community Noise Equivalent Level, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dB to measured noise levels between the hours of 7 PM to 10 PM and after an addition of 10 dB to noise levels between the hours of 10 PM to 7 AM to account for greater noise sensitivity in the evening and nighttime, respectively.

SEL: SEL, or Sound Exposure Level, is the cumulative noise exposure from a single noise event, normalized to one second for the duration of a single, particular noise event. The SEL contains the same overall sound energy as the actual varying sound energy during the event. It is the primary metric for the measurement of transit vehicle noise emissions.

Health Effects of Environmental Noise

The World Health Organization (WHO) is perhaps the best source of current knowledge regarding the health effects of noise impacts because European nations have continued to study noise and its health effects, while the United States Environmental Protection Agency (USEPA) all but eliminated its noise investigation and control program in the 1970s. According to WHO, sleep disturbance can occur when continuous indoor noise levels exceed 30 dBA or when intermittent interior noise levels (such as from traffic) reach 45 dBA, particularly if background noise is low. With a bedroom window slightly open (a reduction from outside to inside of 15 dB), the WHO criteria suggest that exterior continuous (ambient) nighttime noise levels should be 45 dBA or below, and short-term events should not generate noise in excess of 60 dBA. WHO also notes that maintaining noise levels within the recommended levels during the first part of the night is believed to be effective for the ability of people to initially fall asleep (WHO, 1999).

Short-term noise levels constituting the thresholds of pain and hearing damage are 120 dB and 140 dB, respectively (Kinsler, 1982). Typical daytime construction noise levels in the absence of pile driving are substantially below these thresholds of pain and hearing damage. The Occupational Safety and Health Administration require hearing conservation plans when noise levels continuously exceed 85 dBA over an 8-hour period. Consequently, noise generated by short-term construction activities do not result in adverse health effects related to pain, the onset of hearing loss, or other significant health effects.

Other potential health effects of high noise levels identified by WHO include decreased performance for complex cognitive tasks, such as reading, attention span, problem solving, and memorization; physiological effects such as hypertension and heart disease (after many years of constant exposure, often of workers, to high noise levels); and hearing impairment (again, generally after long-term occupational exposure, although shorter-term exposure to very high noise levels, for example, exposure several times a year to concert noise at 100 dBA, can also damage hearing). Finally, noise can cause annoyance and can trigger emotional reactions like anger, depression, and anxiety. WHO reports that, during daytime hours, few people are seriously annoyed by activities with noise levels below 55 dBA or moderately annoyed with noise levels below 50 dBA.

Vehicle traffic and continuous sources of machinery and mechanical noise contribute to ambient noise levels. Short-term noise sources, such as truck backup beepers, the crashing of material being loaded or unloaded, and car doors slamming contribute very little to 24-hour noise levels but are capable of causing sleep disturbance and annoyance. The importance of noise to receptors depends on both time and context. For example, long-term high noise levels from large traffic volumes can make conversation at a normal voice level difficult or impossible, while short-term peak noise levels, if they occur at night, can disturb sleep.

Vibration Descriptors

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe physical vibration impacts on buildings and structures. Another useful vibration descriptor is known as vibration decibels or VdBs. VdBs are generally used when evaluating human response to vibration, as opposed to damage to structures (for which PPV is the more commonly used descriptor). Vibration decibels are established relative to a reference quantity, typically 1×10^{-6} inches per second and are based on the root mean square velocity amplitude (FTA, 2018).

Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include people (especially residents, the elderly, and sick people), structures (especially older masonry structures), and vibration-sensitive equipment.

The background vibration velocity levels in residential areas are typically 50 VdB or lower, and the threshold of perception for humans is approximately 65 VdB. A vibration level of 85 VdB in a residence can result in strong annoyance (FTA, 2018).

Existing Noise and Vibration Environment

Long-term environmental noise in urbanized areas is primarily dependent on vehicle traffic volumes and the mix of vehicle types. The existing ambient noise environment at the Project site is dominated by vehicular traffic on adjacent public streets, including 52nd Street, Martin Luther King (MLK) Jr. Way, and State Route (SR) 24 freeway; and on internal private roadways, surface parking and loading areas within the Project site. Bay Area Rapid Transit (BART) trains traveling on elevated tracks within the MLK Jr. Way median, and within the SR 24 right-of-way, also contribute to the ambient noise environment. Ambulances transporting patients to the UCSF BCH Oakland campus site can use their sirens for safety purposes on local streets when they access the hospital. In addition, as discussed in Chapter 3, *Project Description*, helicopters currently access and depart BCH Oakland's helistop at the Project site, transporting patients to the hospital for emergency care. Ambient noise levels on the Project site are also affected by noise generated by stationary equipment noise sources, including, but not limited to, the Central Utility Plant (CUP), Chiller Building, and loading docks.

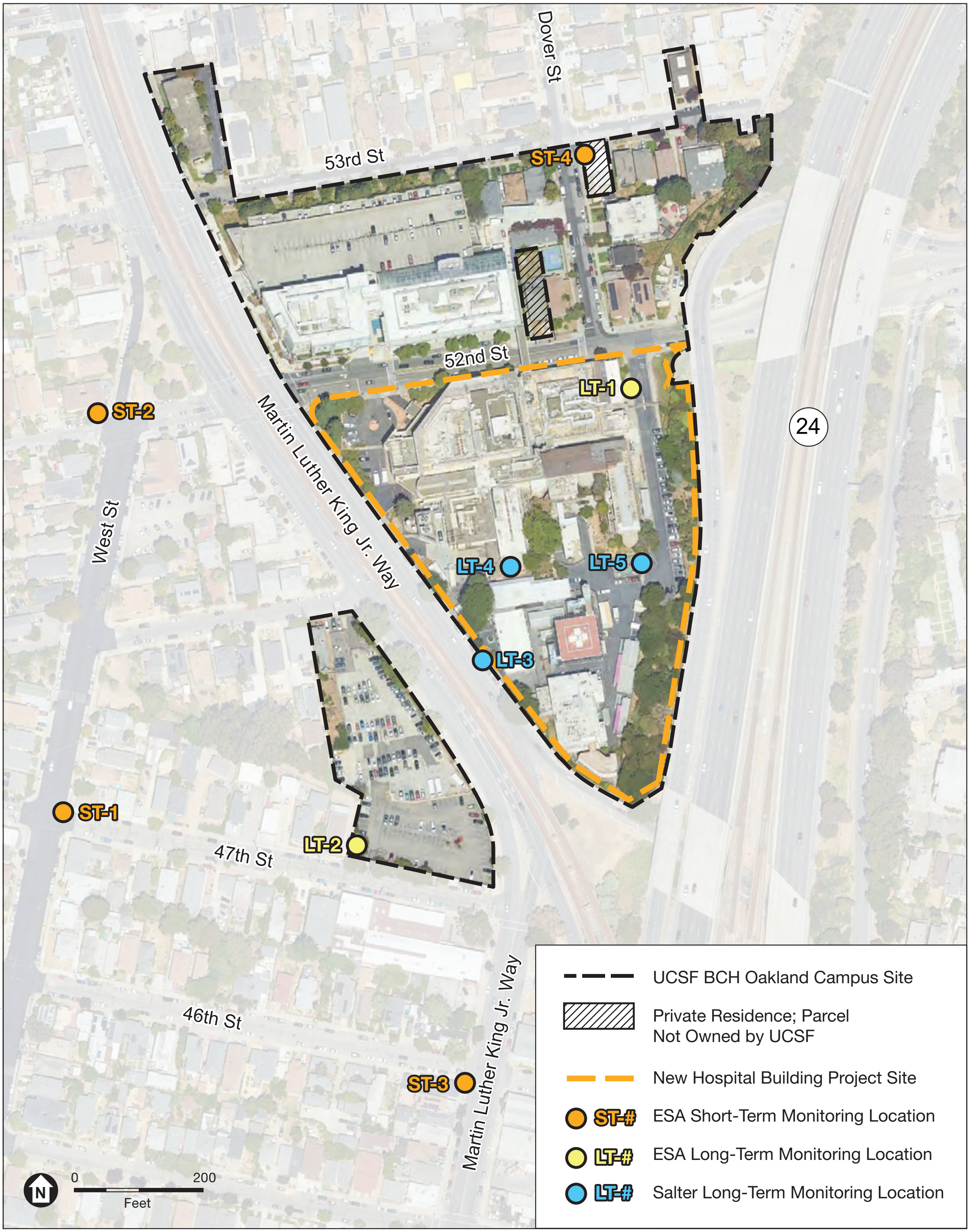
Ambient Noise Measurements

Ambient long-term (24-hour) and short-term (15-minute) noise measurement data were collected on May 23 through May 25, 2023, to characterize noise conditions on the Project site and its environs. Noise measurement locations are shown in **Figure 4.10-1**, and noise results for the long-term and short-term monitoring locations are summarized in **Table 4.10-2** and **Table 4.10-3**, respectively.

TABLE 4.10-2
LONG-TERM AMBIENT NOISE LEVELS IN THE NHB PROJECT SITE VICINITY

Measurement Location		Community Noise Exposure Level (CNEL)	Noise Levels in dBA	
			Daytime hourly average, L_{eq}	Nighttime hourly average, L_{eq}
LT-1	Dover Street access to the Project site south of 52nd Street	71	65	65
LT-2	Within the UCSF BCH Oakland annex parking lot west of the Project site across MLK Jr. Way	65	60	61

NOTE: See Figure 4.10-1 for noise measurement locations.
SOURCE*:* Environmental Science Associates, May 2023.



SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 4.10-1
Noise Monitoring Locations

TABLE 4.10-3
SHORT-TERM AMBIENT NOISE LEVELS IN THE NHB PROJECT SITE VICINITY

Measurement Location	Time	Noise Levels in dBA	
		Hourly L_{eq}	L_{max}
ST-1 Intersection of West Street and 47th Street	11:42 AM	59	76
ST-2 Intersection of West Street and 52nd Street	12:09 PM	65	85
ST-3 Intersection of 46th Street and MLK Jr. Way	12:57 PM	69	92
ST-4 Intersection of Dover Street and 53rd Street	12:33 PM	66	86

NOTE: See Figure 4.10-1 for noise measurement locations. L_{eq} represents the constant sound level; L_{max} is the maximum noise level.
SOURCE*:* Environmental Science Associates, May 23, 2023.

To provide a basis for evaluating potential impacts of the Project on nearby residences, noise monitoring was conducted at a number of representative locations within the surrounding residential neighborhood. As illustrated in Figure 4.10-1, short-term monitoring location ST-1 is located at the intersection of West Street and 47th Street; ST-2 is located at the intersection of West Street and 52nd Street; ST-3 is located at the intersection of 46th Street and MLK Jr. Way; and ST-4 is located at the intersection of Dover Street and 53rd Street.

Long-term monitoring location LT-1 is located at Dover Street access to the Project site south of 52nd Street, in proximity to the nearest off-site residences located across 52nd Street. The noise environment at this location is dominated by vehicle traffic on 52nd Street and, to a lesser extent, by vehicles entering/exiting the Project site on Dover Street. Noise data indicate that these noise sources are consistent throughout the daytime and nighttime hours. Long-term monitoring location LT-2 is located within the UCSF BCH Oakland annex parking lot west of the Project site across MLK Jr. Way, and adjacent to a residence located at 738 47th Steet. The noise environment at this location is affected not only by 47th Street vehicle traffic but also by the substantial traffic volumes on MLK and SR 24 to the west. The noise monitoring at LT-1 and LT-2 also captured three helicopter arrival/departures that occurred on May 23 and May 24. Noise levels at the LT-1 and LT-2 monitoring locations were 71 and 65 dBA, CNEL, respectively. These noise levels are not uncommon for an urban environment within 500 feet of a freeway.

Separate from ESA's noise monitoring effort, Salter Inc. conducted three 56-hour, long-term measurements (LT-3 to LT-5) on and in the vicinity of the Project site between December 15 and 22, 2022 in support of an acoustical study Salter prepared for UCSF (Salter, 2023). These long-term noise monitoring locations are also illustrated in Figure 4.10-1. Noise results for the long-term monitoring locations are summarized in **Table 4.10-4**. The monitoring locations are either adjacent to or within the Project site, and, as such, reflect the contribution of existing on-site noise sources.

TABLE 4.10-4
ADDITIONAL AMBIENT LONG-TERM NOISE LEVELS ON AND IN NHB PROJECT SITE VICINITY

Site	Location	Maximum Measured DNL with Helicopter Activity	Maximum Measured DNL without Helicopter Activity	Maximum Measured Leq(h) with Helicopter Activity	Maximum Measured Leq(h) without Helicopter Activity
LT-3	MLK Jr. Way (adjacent to Project Site)	79	--	83	--
LT-4	Roof of Hospital	75	--	80	--
LT-5	Pole adjacent to SR 24	88	74	80	72

NOTE:
See Figure 4.10-1 for noise measurement locations.
L eq(h) – The equivalent steady-state A-weighted sound level that, in an hour, would contain the same acoustic energy as the time-varying sound level during the same period
SOURCE*:* Salter, 2022.

Ambient Helistop and Freeway Noise Levels

The existing UCSF BCH Oakland helistop is located on a 46-foot-tall helistop structure located in the southern portion of the Project site. **Figure 4.10-2** illustrates the arriving and departing flight tracks for helicopters that use the existing helistop at the Project site. As discussed in Chapter 3, *Project Description*, helicopters using the helistop typically arrive from the east and depart to the west. When feasible, flight crews fly over SR 24 and the hospital property when landing at or departing from the helistop in an effort to minimize noise impacts on the surrounding community.

With respect to noise generated by helicopters using the existing helistop at the Project site, **Figure 4.10-3** presents the existing (2022) CNEL contours created for the UCSF BCH Oakland helistop using data from Federal Aviation Administration (FAA)'s Aviation Environmental Design Tool (AEDT)[66]. Title 14 of the Code of Federal Regulations, Part 150 (14 CFR Part 150) and its table of noise/land use compatibility guidelines require the calculation of DNL, or CNEL for aircraft noise analyses in California. The total noise exposure (in CNEL) is averaged over a year – typically a calendar year. The AEDT produces these values of exposure utilizing an "average annual day" of aircraft operations. The noise contours in Figure 4.10-3 represent these average annual CNEL noise levels. Refer to **Appendix NOI** for more detail on the modeling and analysis methodologies of helicopter noise.

Figure 4.10-3 also presents the existing (2019) CNEL contours for the adjacent SR 24 freeway background traffic noise as prepared in support of the City of Oakland General Plan Update (City of Oakland, 2023). Background vehicle traffic noise from SR 24 is the predominant noise source for the Project site and surrounding vicinity. While noise from the operation of BART also contributes to local CNEL noise levels, rail noise contours published in support of the City of Oakland General Plan indicate that their contribution is negligible compared to that from traffic on SR 24.

66 https://aedt.faa.gov/

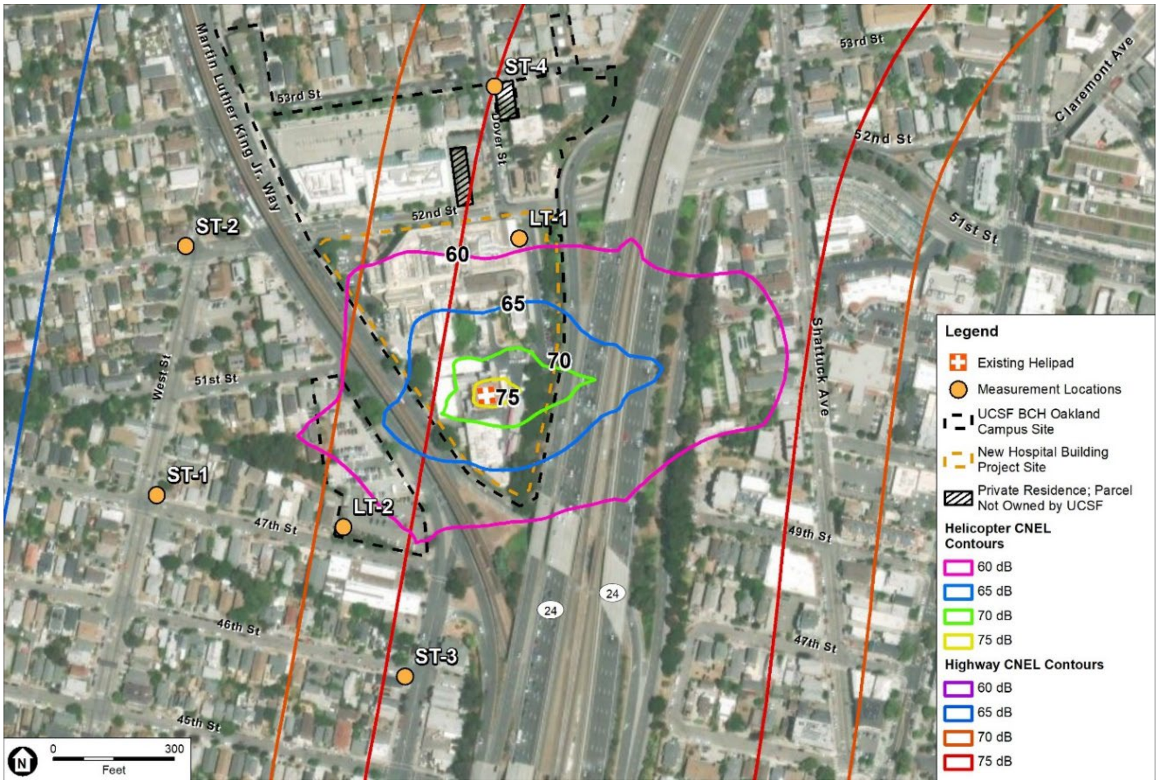
SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-2
Helicopter Flight Tracks Using Existing UCSF BCH Oakland Helistop

Sources of Vibration

The primary vibration source in the campus site vicinity are BART trains that travel on elevated train tracks in the center of MLK Jr. Way west of the Project site. The Federal Transit Administration (FTA) has published generalized ground-surface vibration levels for light-rail passenger trains which are presented in **Table 4.10-5**; the table presents only those vibration levels that correspond to light rail speeds that are representative of those that occur along MLK Jr. Way.



SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-3
Existing CNEL Contours for UCSF BCH Oakland Helistop and SR 24 Background Traffic

TABLE 4.10-5
GENERALIZED VIBRATION LEVELS (IN VdB) FROM LIGHT RAIL ACTIVITY

Train Speed	Distance from Tracks	
	50 Feet	**100 Feet**
10 Miles per Hour	59 VdB	53 VdB
20 Miles per Hour	65 VdB	59 VdB
30 Miles per Hour	69 VdB	63 VdB

SOURCE: FTA, 2018

Sensitive Receptors

Sensitive receptors for noise are generally considered to include nursing homes, senior citizen centers, hospitals with overnight accommodations, schools, churches, libraries, childcare facilities, and residences. Land uses in the campus site vicinity are described in detail in Section 4.10, *Land Use and Planning*.

Existing sensitive receptors include those hospital facilities on the Project site that contain inpatient beds. There are also a number of sensitive receptors located within 1,000 feet of the

Project site. To the north, this includes private residences at 520 52nd Street and 685 53rd Street, the UCSF BCH Oakland's Family House multi-family residential complex at 5222 Dover Street, and the residential neighborhood north of 53rd Street. To the west, there are single- and multi-family residences on 52nd, 51st, 47th, and West Streets, and MLK Jr. Way. Single- and multi-family residences are also located to the east across SR 24 along 48th and 51st Streets, and Shattuck Avenue. Other sensitive receptors located within 1,000 feet of the Project site include the Church of the Good Shepherd at 799 52nd Street, LaVonda's Crayon Box daycare at 825 52nd Street, and Mechita Daycare at 4812 Shattuck Avenue, about 0.14 miles to the east.

Vibration sensitive receptors can include not only residences and other places where people would be expected to sleep, such as a hotel, nursing home, or hospital, but also locations where vibration-sensitive equipment may be in use such as microscopes and magnetic resonance imagery (MRI) equipment and recording studios. Vibration-sensitive receptors on and in the campus site vicinity consist of the noise-sensitive receptors identified above, existing MRI and microscopy uses at UCSF BCH Oakland, as well as any research facilities that use vibration-sensitive equipment. Older structures, especially those constructed of masonry, are also sensitive to vibration.

4.10.2 Regulatory Framework

Federal

Federal Aviation Administration

The FAA develops noise exposure maps that use average annual CNEL noise contours around the airport as the primary noise descriptor. The FAA states that all land uses are considered compatible when aircraft noise effects are less than 65 decibels (dB) CNEL. San Francisco International Airport and Oakland International Airport are over 15 and 6 miles from the campus site, respectively. The campus site is outside the 55 dB CNEL noise contour of both airports (ACCDA, 2010; SFO, 2015).

State

State regulations include requirements for the construction of new hotels, motels, apartment houses, and dwellings other than detached single-family dwellings that are intended to limit the extent of noise transmitted into habitable spaces. These requirements are collectively known as the California Noise Insulation Standards and are found in Title 24 of the California Code of Regulations.

The 2016 California Building Code (CBC) included the most recent update to the sound transmission standards which (CBC, Title 24, Part 2 of the California Code of Regulations) requires that walls and floor/ceiling assemblies separating dwelling units from each other, or from public or service areas, have a Sound Transmission Class (STC) of at least 50, meaning they can reduce noise by a minimum of 50 dB.[67] The CBC (Section 1207.4, Allowable Interior Noise Levels) also specifies a maximum interior noise limit of 45 dBA (Ldn or CNEL) in habitable

[67] State Building Code section 1207.2.

rooms, and requires that common interior walls and floor/ceiling assemblies meet a minimum STC rating of 50 for airborne noise.

UCSF

The UCSF 2014 LRDP identified campus-wide objectives and objectives specific to the UCSF campuses, which at the time did not include the BCH Oakland campus site. The following UCSF 2014 LRDP campus-wide objective relates to noise:

Campus-Wide Objectives

1. **Respond to City and Community Context**

    C. Design new buildings to be sensitive to the surrounding neighborhood and landscape, taking into account use, scale, potential noise generation, and density.

    F. Consider neighborhood and city-wide impacts related to UCSF's physical growth.

The UCSF 2014 LRDP also included *Community Planning Principles*, which were produced in collaboration with the UCSF Community Advisory Group:

Community Planning Principles

Environmental Planning and Safety

EP3. Meet or exceed city, state, and federal standards with respect to health and safety, noise and construction-related environmental impacts.

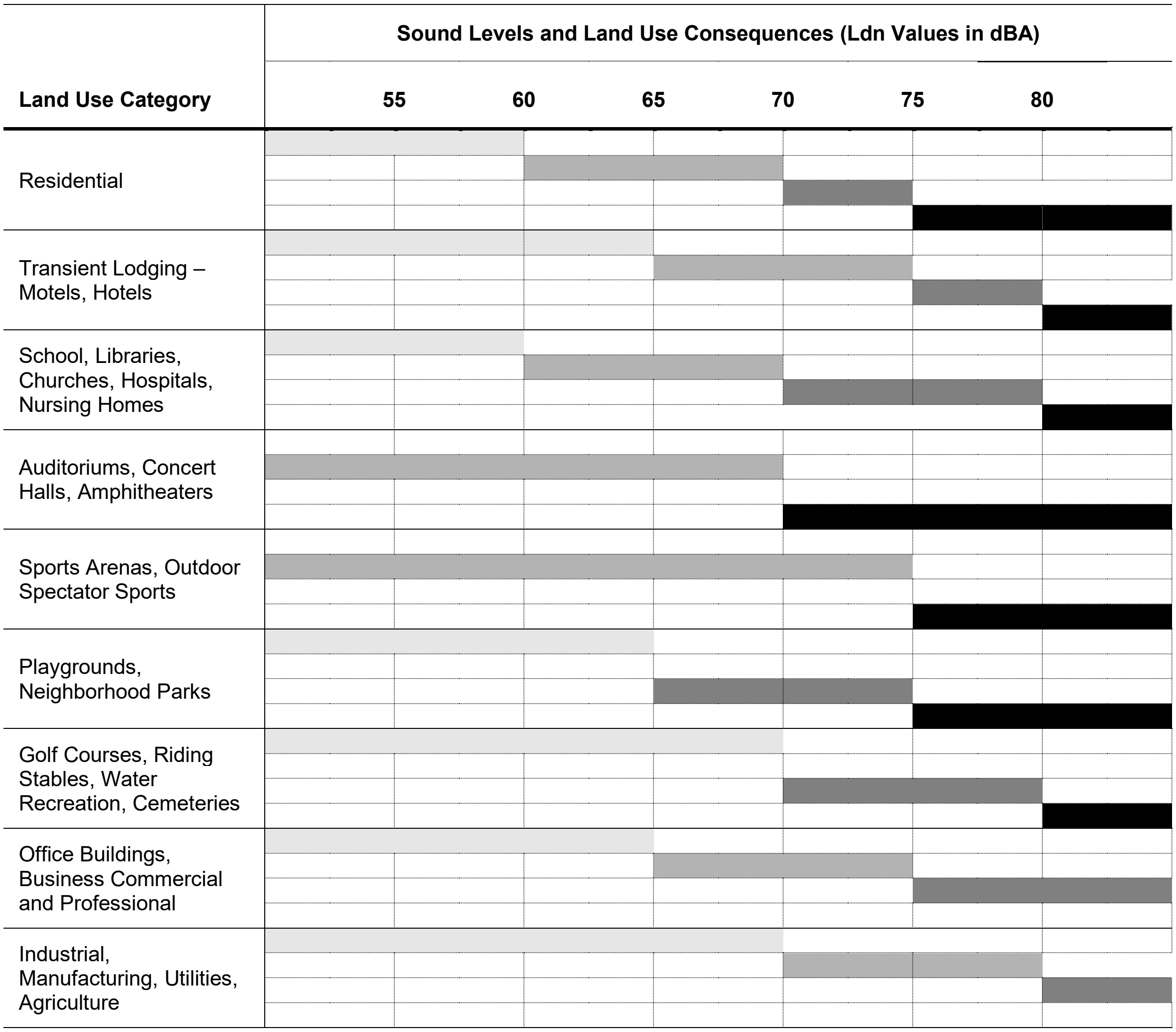
City of Oakland

UCSF is not subject to local plans, policies, or ordinances whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be consistent with such plans, policies, or ordinances to the extent feasible. The most recent noise levels recorded on the Project site perimeter and presented in Table 4.10-2 are within the normally acceptable and conditionally acceptable noise exposure category with respect to the City of Oakland standards discussed below. However, measured noise levels surrounding the existing helistop within the Project site exceed the conditionally acceptable noise exposure category for hospital land uses.

City of Oakland General Plan

The Oakland General Plan Noise Element contains guidelines for determining the compatibility of various land uses with different outdoor noise environments (City of Oakland, 2005). The Noise Element recognizes that some land uses are more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of typical activities. The City of Oakland uses State noise guidelines for judging the compatibility between various land uses and their noise environments, which are summarized in **Table 4.10-6**.

TABLE 4.10-6
LAND USE NOISE COMPATIBILITY GUIDELINES – CITY OF OAKLAND



Satisfactory, with no special noise insulation requirements. Noise levels in this range are considered “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 included in the design. Noise levels in this range are considered “Conditionally Acceptable.”

New construction or development should generally 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 included in the design. Noise levels in this range are considered “Conditionally Unacceptable.”

New construction or development should generally not be undertaken. Noise levels in this range are considered “Unacceptable.”

SOURCE: City of Oakland, *City of Oakland General Plan*, Noise Element, adopted in June 2005, https://cao-94612.s3.amazonaws.com/documents/oak070995.pdf, accessed May 2023.

In this context, “normally acceptable” is defined as satisfactory for the specific land use, assuming that normal conventional construction is used in buildings. “Conditionally acceptable” means that new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh-air supply systems or air conditioning, will normally suffice. “Normally unacceptable” means that new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and the needed noise insulation features included in the design.

The Oakland Noise Element identifies maximum interior noise levels generally considered acceptable for various common land uses (with windows closed). Relevant to the Project, 45 dB is the maximum level acceptable for residential or classroom uses. The Noise Element includes two goals for the City:

- To protect Oakland’s quality of life and the physical and mental well-being of residents and others in the City by reducing the community’s exposure to noise.
- To safeguard Oakland’s economic welfare by mitigating noise incompatibilities among commercial, industrial and residential land uses.

The Noise Element also contains the following applicable policies and actions:

> ***Policy 1:*** Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.
>
> > *Action 1.1:* Use the noise-land use compatibility matrix in conjunction with the noise contour maps (especially for roadway traffic) to evaluate the acceptability of residential and other proposed land uses and also the need for any mitigation or abatement measures to achieve the desired degree of acceptability.
> >
> > *Action 1.2:* Continue using the City’s zoning regulations and permit processes to limit the hours of operation of noise-producing activities which create conflicts with residential uses and to attach noise-abatement requirements to such activities.
>
> ***Policy 2:*** Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.
>
> > *Action 2.1:* Review the various noise prohibitions and restrictions under the City’s nuisance noise ordinance and revise the ordinance if necessary.
> >
> > *Action 2.2:* As resources permit, increase enforcement of noise-related complaints and also of vehicle speed limits and of operational noise from cars, trucks, and motorcycles.
>
> ***Policy 3:*** Reduce the community’s exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City. (This policy addresses the reception of noise whereas Policy 2 addresses the generation of noise.)

Action 3.1: Continue to use the building-permit application process to enforce the California Noise Insulation Standards regulating the maximum allowable interior noise level in new multi-unit buildings.

Action 3.2: Review the City's noise performance standards and revise them as appropriate to be consistent with City Council policy.

Oakland Noise Ordinance

The City of Oakland also regulates noise through enforcement of its noise ordinance, which can be found in Section 8.18.020 of the Health and Safety Code, Section 17.120 of the Planning Code, and Chapter 12.56 of the Municipal Code.

The noise ordinance within the Health and Safety Code qualitatively addresses persistent nuisance noise which it defines as "persistent maintenance or emission of any noise or sound produced by human, animal or mechanical means, between the hours of 9:00 PM and 7:00 AM. next ensuing (sic.) which, by reason of its raucous or nerve-racking nature, shall disturb the peace or comfort, or be injurious to the health of any person." In addition, the Code states that failure to comply with the following requirements constitutes a nuisance:

A. All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
B. Unnecessary idling of internal combustion engines is prohibited.
C. All stationery noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.
D. Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
E. Use of pile drivers[68] and jack hammers shall be prohibited on Sundays and holidays, except for emergencies and as approved in advance by the Building Official.

The noise ordinance within the Planning Code regulates construction noise and only operational noise from stationary sources, as cities and counties do not have regulatory authority to establish noise level limits over noise from mobile on-road sources (transportation noise), excluding on-site construction. Transportation noise is regulated at the State and federal level by noise limits placed on vehicle manufacturers.

Table 4.10-7 presents maximum allowable receiving noise standards applicable to long-term exposure for residential and civic land uses, for noise from stationary noise sources (not transportation noise). Section 17.120.050 of the Planning Code states that all activities shall be so conducted that the noise level inherently and regularly generated by these activities across real property lines shall not exceed the applicable values indicated in Table 4.10-7, as modified where applicable by the adjustments indicated in footnote (a) of this table. Subsection F of Section

68 Please not pile driving is not proposed as part of the NHB Project.

TABLE 4.10-7
MAXIMUM ALLOWABLE RECEIVING NOISE STANDARDS FOR SPECIFIED LAND USES, dBA[a]
(FROM STATIONARY SOURCES)

Receiving Land Use	Cumulative Number of Minutes in 1-Hour Time Period[b]	Maximum Allowable Noise Level Standards (dBA)	
		Daytime 7:00 AM to 10:00 PM	Nighttime 10:00 PM to 7:00 AM
Residential, School, Childcare, Health Care, or Nursing Home, and Public Open Space	20 (L_{33}) 10 ($L_{16.7}$) 5 ($L_{8.3}$) 1 ($L_{1.7}$) 0 (L_{max})	60 65 70 75 80	45 50 55 60 65
		Anytime	
Commercial	20 (L_{33}) 10 ($L_{16.7}$) 5 ($L_{8.3}$) 1 ($L_{1.7}$) 0 (L_{max})	65 70 75 80 85	
		Anytime	
Manufacturing, Mining, and Quarrying	20 (L_{33}) 10 ($L_{16.7}$) 5 ($L_{8.3}$) 1 ($L_{1.7}$) 0 (L_{max})	70 75 80 85 90	

NOTES:

a. These standards are to be further reduced by 5-dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise. If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.

b. L_x represents the noise level that is exceeded X percent of a given period. L_{max} is the maximum instantaneous noise level.

SOURCE: Oakland Noise Ordinance No. 11895, 1996

17.120.050 further indicates that noise measurement procedures shall be conducted at a position or positions at any point on the receiver's property.

Once a structure or facility is constructed, noise from a stationary source would be limited by the standards in Table 4.10-7 (for example, between 10:00 PM and 7:00 AM, residential uses may only be exposed to noises up to 45 dBA for a period of cumulative 20-minutes in a 1-hour time period). The noise ordinance states that if the measured ambient noise level exceeds the applicable standard in any category, then the stated applicable noise level shall be adjusted so as to equal the ambient noise level. In other words, if existing noise is measured to be louder than the maximum allowed (i.e., the "applicable noise level standard"), the existing noise level shall be considered the maximum allowed.

Table 4.10-8 presents noise level standards from the noise ordinance that apply to temporary exposure to short- and long-term construction noise. In this context, short-term refers to construction activities lasting less than 10 days at a time while long-term refers to construction activities lasting greater than 10 days at a time. Given the Project's multi-year construction schedule, the latter noise level standards would apply for daytime construction activities. Per

Section 17.120.050 (G) of the Planning Code, the limits in Table 4.10-8 apply to residential and industrial/commercial land uses.

TABLE 4.10-8
MAXIMUM ALLOWABLE RECEIVING NOISE STANDARDS FOR TEMPORARY CONSTRUCTION OR DEMOLITION ACTIVITIES, DBA

Operation/Receiving Land Use	Daily (Weekday) 7:00 AM to 7:00 PM	Weekends 9:00 AM to 8:00 PM
Short-Term Operation (less than 10-days)		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operation (more than 10-days)		
Residential	65	55
Commercial, Industrial	70	60

NOTES:
During the hours of 7:00 PM to 7:00 AM on weekdays and 8:00 PM to 9:00 AM on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard (see Table 4.10-8). If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level. Maximum allowable receiving standards are applied in this analysis as the maximum L_{eq}.

SOURCE: Oakland Noise Ordinance No. 11895, 1996

For nighttime construction activities during the hours of 7:00 PM to 7:00 AM on weekdays and 8:00 PM to 9:00 AM on weekends and federal holidays, noise level limits received by any land use from construction or demolition are not addressed by standards in Table 4.10-8 but, rather, according to the City of Oakland noise ordinance, these nighttime construction noise levels shall not exceed the applicable nighttime operational noise level standards in Table 4.10-7, which for residential uses would be 45-dBA (see Table 4.10-7). The ordinance further states that if the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level. However, noise levels on the Project site, at the nearest sensitive receptors to the north (52nd street residences) and at the receptors to the west are at 65 dBA and 61 dBA respectively. As these levels already exceed the applicable 45 dBA standard, per the ordinance, the existing ambient level at each respective boundary would be the applicable nighttime construction standard.

4.10.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project result in:

a) 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?

b) Generation of excessive groundborne vibration or groundborne noise levels?

c) 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?

d) Exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use[69]?

With regard to the specific thresholds used in this section to analyze noise and vibration impacts per the criteria set forth above, please see *Approach to Analysis,* below.

Criteria Not Analyzed

There would be no impact related to the following topic for the reasons described below:

- ***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 proposed Project would not include development of land uses near an airport influence area. The FAA states that all land uses are considered compatible when aircraft noise effects are less than 65 decibels (dB) CNEL. Oakland International Airport is over 6 miles from the campus site. The Project site is outside the 55 dB CNEL noise contour of the airport (ACCDA, 2010). No impact would occur, and this impact is not discussed further in this EIR.

  The impact of noise from the proposed relocated helistop is assessed under Impact NOI-2 of this analysis.

Approach to Analysis

Construction Noise and Vibration Assessment

Construction Noise

The impact of Project construction noise is assessed relative to the restrictions established by Section 17.120.050 Oakland Municipal Code. As discussed in the *Regulatory Setting*, UCSF voluntarily strives to meet the Oakland Municipal Code, which sets limits on the hours during which construction activities can occur (between the hours of 7:00 AM and 7:00 PM) and requires that construction noise not exceed 65 dBA at the nearest receiving property line. To assess consistency with the code requirements, published reference noise levels for standard construction equipment were compared to the code requirements to determine whether Project construction would generate noise levels in excess of the City standard.

The FTA methodology for general assessment of construction noise entails a process for calculating the hourly dBA, L_{eq} for each stage of construction considering (1) the reference noise emission level at 50 feet for equipment to be used for each stage of construction, (2) the usage factor for each piece of equipment, and (3) the distance between construction centerline and

69 This approach to assessing traffic noise is consistent with transportation-related noise assessment as suggested by the Federal Interagency Commission on Aircraft Noise (FICAN, 1992) and with Caltrans guidance which characterizes a 3 dBA increase as "barely perceptible" increase outside of the laboratory.

receptors[70]. This methodology entails estimating the resultant noise levels for the two noisiest pieces of equipment expected to be used in each stage of construction.

The FTA does not publish a software noise model; as such, the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) was used. The RCNM is used as the FHWA's national standard for predicting construction noise. The RCNM analysis includes the calculation of noise levels (L_{max} and L_{eq}) at incremental distances for a variety of construction equipment. The model inputs include acoustical use factors, L_{eq} values at various distances depending on the receptor location analyzed. Construction noise levels were calculated for the Project construction phases.

A California Supreme Court decision suggests that additional consideration be given to the resultant increase in noise over ambient conditions. Specifically, in *King and Gardiner Farms LLC. v. County of Kern* (2020) 45 Cal.App.5th 814, 893, the California Supreme Court determined that the use of an absolute noise level as the threshold of significance violated CEQA. With respect to the project's noise impacts in that EIR, the County determined the significance of those impacts based solely on whether the estimated ambient noise level with the project would exceed the 65 decibel threshold set forth in the County's general plan. Based on prior case law, the court concluded that the magnitude of the noise increase must be addressed to determine the significance of change in noise levels and that the EIR did not include an analysis, supported by substantial evidence, explaining why the magnitude of an increase in ambient noise need not be addressed to determine the significance of the project's noise impact. Therefore, in addition to the assessment of construction noise relative to Section 17.120.050 of the Oakland Municipal Code, this analysis applies an increase of 10 dBA or more over existing noise levels at sensitive receptor locations as a criterion for a significant impact as such an increase is a perceived doubling of loudness (Caltrans, 2013).

Construction Vibration

The study area for evaluation of vibration impacts from construction encompasses the construction site and the nearest potentially affected sensitive receptors. Vibration levels are predicted at various distances for equipment reasonably expected to be involved with Project demolition and construction activities and impacts to receptors are assessed based on methodology and criteria put forth by Caltrans and FTA. Construction vibration impacts are analyzed in terms of the potential of Project-related vibrations to result in damage to nearby structures or buildings, based on thresholds put forth by Caltrans (Caltrans, 2020). The Caltrans thresholds for potential architectural damage due to groundborne vibrations are 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings. With respect to human annoyance, Caltrans considers vibrations of 0.04 in/sec PPV to be strongly perceptible and this is the threshold applied for vibration impacts during sensitive nighttime hours when people ae likely to be sleeping. The threshold for vibration-sensitive equipment is 65 VdB, as published by FTA and based on the root mean square velocity amplitude (FTA, 2018).

70 In an urban area such as downtown San Francisco that have acoustically non-absorptive ground conditions, the ground factor for this analysis is taken to be zero.

Operational Noise Assessment

Operational Stationary Source Noise

Operational stationary sources include mechanical equipment such as heating, ventilation, and air conditioning (HVAC) equipment and backup generators. As Project-specific noise specifications of the proposed equipment are not currently available, noise levels generated from this equipment were calculated based on representative sound power specifications for a large hospital with all-electric powered equipment and diagrams of the locations of HVAC units and generators as provided by UCSF. The analysis identifies existing code requirements that would serve to limit noise from these sources and UCSF's intent to meet code requirements to the degree feasible. UCSF voluntarily strives to meet the Oakland Municipal Code, in which operation of HVAC equipment (and any other stationary equipment) are subject to the City of Oakland Noise Ordinance for maximum allowable receiving noise standards presented in Table 4.10-7. Since the existing noise level is measured to be louder than the maximum allowed per Table 4.10-7, the existing noise level would be considered the applicable noise standard for the evaluation of the Project's stationary source noise impact.

Operational Traffic Noise

Traffic noise modeling to analyze the effects of the traffic generated by the Project was completed using a spreadsheet based on the FHWA Traffic Noise Model. The significance of traffic noise impacts was determined by comparing the increase in noise levels (traffic contribution only) to increments recognized by UCSF to represent a substantial permanent increase in noise levels. An increased noise level of 3 dBA or more where noise levels without the Project already exceed those identified as appropriate for a given land use per the Oakland General Plan, as presented in Table 4.10-6, is considered to represent a substantial permanent increase with respect to traffic noise.

Helicopter Noise from Relocation and Operation of the Helistop

The FAA's AEDT[71], Version 3e, was used to predict noise levels at surrounding uses that would result from operation of the relocated helistop atop the proposed new hospital building under the Project, and operation of relocated helistop atop the proposed parking garage under the Project variant. The impact of helicopter noise is assessed by calculating the change in the CNEL noise level metric with the Project compared to existing conditions and determining whether the increase is equal or greater than 3 dBA, which is an increase defined to be barely perceptible to the human ear (Caltrans, 2013). The analysis also considers other existing noise sources in the project area, such as background traffic on the adjacent streets and SR 24, when assessing the contribution of the increase in noise from helicopter operations.

Additionally, helicopter noise is considered with respect to the impact of single-event noise on sleep and speech. A single event analysis was performed utilizing three metrics: the Sound Exposure Level (SEL) to evaluate the potential for sleep disturbance, and Maximum A-Weighted Sound Level (Lmax), and Time Above (TA) to assess the potential for speech interference. Single event metrics such as SEL and Lmax represent worst-case noise exposure for a single noise event, and as such, are not affected by changes to the total number of annual operations. The single

71 https://aedt.faa.gov/

event metrics were modeled using the closest flight track to each noise impact assessment site location.

With regard to addressing potential sleep disturbance impacts in this EIR, a review of various studies demonstrates that there is considerable debate within the scientific community and a lack of concurrence regarding the relationship between aircraft noise and sleep disturbance, especially as related to determining a definitive noise dose and the response relationship for sleep disturbance. Thus, even if noise events are measured using supplemental metrics (e.g., SEL, Lmax, TA, etc.), there is no scientific concurrence on the appropriate "threshold" to compare such measurements against, when it comes to sleep disturbance (LAWA, 2020). Additionally, there is presently no regulatory agency that has established specific standards to evaluate sleep disturbance impacts under CEQA. However, both the DNL and CNEL noise metrics, described above, incorporate noise "penalties" to account for the increased sensitivity to noise events that occur during the more noise-sensitive nighttime periods such as when most sleeping typically occurs. In the absence of any other accepted standards for sleep disturbance, this analysis uses the CNEL metric to address the potential for sleep disturbance impacts due to its application of penalties to noise events occurring during typical sleep hour. However, additional information on the impacts of helicopter noise related to sleep disturbance, speech interference and vibration from helicopters is presented in this section. The noise analysis report prepared for the project provides an analysis of helicopter single event noise exposure, which was analyzed by using the AEDT to calculate SEL, L_{max} and Time Above (TA) values at the helicopter noise impact assessment sites. The SEL values were used to assess the potential for sleep disturbance and L_{max} and TA values were used to assess the potential for speech interference. Details of this helistop noise analysis are presented in Appendix NOI.

Impact Analysis

Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (*Significant and Unavoidable with Mitigation*)

Construction activities for the proposed Project would include demolition and site preparation, grading/excavation, drainage/utilities/sub-grade, foundations, structure, building construction exteriors, building construction interiors, and final site improvements. Equipment involved with excavation, grading and construction at the campus site would include excavators, cranes, compactors, rollers, sweepers/scrubbers, forklifts, and trucks for delivering materials and for off-hauling soil and demolition debris. No pile driving or blasting activities are proposed during construction of the Project. Rather, foundations would be installed using drilled piers.

Table 4.10-9 shows typical noise levels produced by various types of construction equipment likely to be involved in the construction of the Project that would occur at a reference distance of 50 feet from the source. Noise levels at and near the Project construction site would fluctuate depending on the particular type, number and duration of use of various pieces of construction equipment at any given time.

TABLE 4.10-9
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Lmax at 50 Feet)
Air Compressor	78
Backhoe	78
Concrete Saw	90
Drill Rig Truck	80
Compactor	83
Dump Truck	77
Crane	81
Excavator	81
Forklift	83
Generator	81
Loader	79
Paver	77
Roller	85
Sweeper	80
Tractor	84
Welder	74
Concrete Truck	79
Off-highway Truck	85

SOURCE: FHWA, 2006.

In addition to estimating the noise increases from the operation of individual pieces of equipment as reported in the table above, the total increase in noise from the concurrent/overlapping operation of several pieces of equipment was calculated for major construction phases of the proposed Project. The FHWA RCNM was used to estimate noise generated by the proposed construction activities. Construction noise levels were calculated for each stage of construction based on the equipment list provided by UCSF. Distances to receptors input into the model include lateral distance, but conservatively the model does not consider any shielding attenuation from intervening topography and buildings.

Table 4.10-10 presents the results of the RCNM modelling of primary Project construction phases showing the predicted unmitigated noise levels at the nearest off-campus sensitive land use. The nearest off-site sensitive receptors to the Project site are residential dwellings to the north across 52nd Street; and west of MLK Jr. Way - approximately 200 feet from the Project site. Predicted noise values in Table 4.10-10 represent a worst-case analysis when equipment is in operation at the point of the construction site closest to the nearest receptor, as this would occur only for a short percentage of the overall construction period. Additionally, existing buildings on the Project Site that would remain (e.g., Patient Tower, D&T Building) would serve to shield noise from Project building demolition and new construction activities, primarily to the north, and therefore, the estimated noise levels at the nearest receptors are conservative. As can be seen in Table 4.10-10, while noise levels from the proposed Project construction activities at the closest receptors would exceed existing noise levels by less than 10 dBA, construction noise would exceed the City of Oakland’s 65 dBA daytime construction noise threshold for activities exceeding 10 days in duration, and the impact would be significant. Mitigation measures are therefore warranted.

TABLE 4.10-10
UNMITIGATED DAYTIME NOISE LEVELS FROM CONSTRUCTION FOR PROPOSED NHB PROJECT

Representative Receptor	Existing Daytime Noise Level (dBA, Leq)	Loudest Two Noise Sources	Reference Noise Level (dBA)[a]	Distance to Receptor[b] (feet)	Usage Factor	Adjusted L_{eq} Level (dBA)[c]	Increase over Noise Level (dBA)
Demolition of Trailers and Helistop							
52nd Street Residences	--	Excavator	81	440	40%	58	NA
52nd Street Residences	--	Rough Terrain Forklift	83	440	40%	61	NA
52nd Street Residences	65	Combined Total	NA	440	NA	62	<1
MLK Way Residences	--	Excavator	81	200	40%	67	NA
MLK Way Residences	--	Rough Terrain Forklift	83	200	40%	65	NA
MLK Way Residences	65	Combined Total	NA	**200**	NA	**69**	+4
Construction of Site Support Building / Site Utilities							
52nd Street Residences	--	Plate Compactor	83	250	20%	62	NA
52nd Street Residences	--	Rough Terrain Forklift	83	250	40%	65	NA
52nd Street Residences	65	Combined Total	NA	250	NA	**67**	+2
MLK Way Residences	--	Plate Compactor	83	200	20%	64	NA
MLK Way Residences	--	Rough Terrain Forklift	83	200	40%	68	NA
MLK Way Residences	65	Combined Total	NA	200	NA	**69**	+4
Construction of Parking Structure / Helistop							
47th Street Residences	--	Excavator	81	400	40%	59	NA
47th Street Residences	--	Scraper	84	400	20%	62	NA
47th Street Residences	62	Combined Total	NA	**400**	NA	63	+1
MLK Way Residences	--	Excavator	81	200	40%	64	NA
MLK Way Residences	--	Scraper	84	200	20%	68	NA

TABLE 4.10-10 (CONTINUED)
UNMITIGATED DAYTIME NOISE LEVELS FROM CONSTRUCTION FOR PROPOSED NHB PROJECT

Representative Receptor	Existing Daytime Noise Level (dBA, Leq)	Loudest Two Noise Sources	Reference Noise Level (dBA)[a]	Distance to Receptor[b] (feet)	Usage Factor	Adjusted L_{eq} Level (dBA)[c]	Increase over Noise Level (dBA)
MLK Way Residences	65	Combined Total	NA	200	NA	**69**	+4
NHB Building Construction							
52nd Street Residences	--	Excavator	81	320	40%	58	NA
52nd Street Residences	--	Scraper	84	320	20%	62	NA
52nd Street Residences	65	Combined Total	NA	**320**	NA	65	<1
MLK Way Residences	--	Excavator	81	200	40%	64	NA
MLK Way Residences	--	Scraper	84	200	20%	68	NA
MLK Way Residences	65	Combined Total	NA	200	NA	**69**	+4
Site Utilities II / Hardscape/Landscape							
52nd Street Residences	--	Excavator	81	170	40%	66	NA
52nd Street Residences	--	Rough Terrain Forklift	83	170	40%	69	NA
52nd Street Residences	65	Combined Total	NA	**170**	NA	**71**	6
MLK Way Residences	--	Excavator	81	200	40%	65	NA
MLK Way Residences	--	Scraper	84	200	40%	67	NA
MLK Way Residences	65	Combined Total	NA	200	NA	**69**	+4

NOTES:
a. L_{max} at 50-feet
b. Distance between approximate location of equipment and property line of receptor.
c. The L_{eq} level is adjusted for distance and percentage of usage.

It should be noted that existing building renovations would occur during Project construction, however, renovations would be largely within the building interiors, and consequently, construction noise associated with these activities would be largely attenuated and not cause a cumulative increase in noise levels.

In addition, some Project construction elements may require nighttime work (e.g., for concrete pours and delivery of oversized loads that must comply with transportation hour restrictions) to achieve satisfactory results and/or to avoid traffic impacts. In rare circumstances when such work were to occur within 500 feet of a residence, **Mitigation Measure NOI-1a, Construction Noise Reduction Plan** and **Mitigation Measure NOI-1b, Construction Hours**, would be implemented to reduce this impact.

As described in Chapter 3, *Project Description*, construction materials/construction worker staging areas would be located on the Project site, as feasible. Staging areas would primarily generate noise at the beginning and end of work shifts, when equipment is activated or shut down for a given workday, and by trucks delivering and removing materials. Operation of trucks, loaders and forklifts would also occur in staging areas but these types of activities would have a lower noise-generating potential than activities within the construction footprints and are not anticipated to be significant noise contributors.

Mitigation Measure NOI-1a, which is detailed below, would require the preparation and implementation of a Noise Control Plan to ensure that construction noise is reduced consistent with UCSF standard construction hours which are more stringent than the standards set forth in the City's noise ordinance established by Section 17.120.050 of the Oakland Municipal Code. **Mitigation Measure NOI-1c** would establish a formal set of procedures for responding to and tracking construction noise complaints. **Mitigation Measure NOI-1d** would require implementation of noise-reducing pile installation techniques during Project construction. Implementation of Mitigation Measures NOI-1a, NOI-1b and NOI-1c would reduce noise levels associated with construction activities. Furthermore, as discussed in **Mitigation Measure TRANS-5** in Section 4.11, *Transportation*, the construction contractor(s) would be required to coordinate with the relevant City of Oakland agencies to prepare a Construction Transportation Management Plan that would be implemented to reduce temporary construction related conflicts.

Project Variant

The Project variant would locate the helistop atop the parking garage instead of the roof of the hospital. While there would be some minor variation in the design of the parking garage under the Project variant to accommodate the rooftop helistop, the same construction equipment and methods would be employed, and consequently, the Project variant would have the same construction noise impacts as the proposed Project, and the same mitigation would apply.

Mitigation Measure NOI-1a: Construction Noise Control Measures

UCSF contractors shall employ site-specific noise attenuation measures during construction of the Project to reduce the generation of construction noise. These measures shall be included in a Noise Control Plan that shall be submitted for review and approval by UCSF to ensure that construction noise is consistent with the standards set forth in the City's Noise Ordinance. Measures specified in the Noise Control Plan and implemented during project construction shall include, at a minimum, the following noise control strategies:

- Equipment and trucks used for construction shall use the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures, and acoustically attenuating shields or shrouds).
- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible;

this could achieve a reduction of 5 dBA. Quieter procedures, such as the use of drills rather than impact tools, shall be used where feasible.

- Stationary noise sources shall be located as far from adjacent receptors as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or include other measures.
- Shield staging areas where adjacent sensitive receptors have direct line-of-sight and are within 200 feet of loading and delivery activities. Shielding may consist of plywood fencing with no gaps or acoustical paneling erected in K-rails.

Mitigation Measure NOI-1b: Construction Hours

Construction hours shall be restricted to the hours listed in the table below. However, in rare circumstances, work may need to occur outside of these work hour limits. For example, there may be times when heavy machinery must be delivered outside the extended hours (during times of low traffic); or concrete pours must occur outside the extended hours. In such cases, UCSF Community and Government Relations will receive advance notice from the project manager, at least one week in advance as feasible, and will engage the community to identify measures to minimize potential impacts. These measures may include, but not be limited to, restricting work to smaller time windows, condensing the overall duration of nighttime work to the degree feasible, and erecting temporary barriers to shield the short-term nighttime activity.

Construction Hours

	"Not Noisy" Work[a]		Noisy Work[a]	
	Regular hours	Extended hours[b]	Regular hours	Extended hours[b]
Monday - Friday	7:00 AM to 5:00 PM	5:00 PM to 8:00 PM	8:00 AM to 5:00 PM	
Saturday		8:00 AM to 5:00 PM		9:00 AM to 4:00 PM
Sunday		8:00 AM to 5:00 PM		

NOTES:
a. "Not Noisy" work = 80 decibels or less at 100 feet; "Noisy" work = more than 80 decibels at 100 feet.
b. Extended hours to be considered by UCSF Community and Government Relations with advance notice from the project manager.

Mitigation Measure NOI-1c: Construction Noise Complaints

UCSF shall establish a formal set of procedures for responding to and tracking complaints received pertaining to construction noise and shall implement the procedures during construction. Procedures shall be established prior to commencement of construction. At a minimum, the procedures shall include:

- Designation of an on-site construction complaint and enforcement manager for the project;
- A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager;
- Protocols for receiving, responding to, and tracking received complaints; and

- Maintenance of a complaint log that records received complaints and how complaints were addressed.

Mitigation Measure NOI-1d: Pile-Installation Noise-Reducing Techniques

Noise-reducing pile-installation techniques shall be employed during project construction. These techniques shall include:

- Installing cast-in-place concrete piles. Noise from auger drilling is 17 dBA less than an impact pile driver.
- Vibrating piles into place, where feasible.
- Implement "quiet" pile-installation technology (such as pre-drilling of piles).

Mitigation: Implement Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures.

Significance After Mitigation: Mitigation Measures NOI-1a, NOI-1b and NOI-1d would reduce the severity of noise generated by demolition and construction activities and reduce the potential annoyance to nearby residents and others who could be disturbed by these activities. Implementation of Mitigation Measures NOI-1a and NOI-1b is projected to reduce noise levels associated with demolition and construction activities for Project construction by 5 to 10 dBA, while Mitigation Measure NOI-1d would reduce noise levels associated with pile installation activities by 17 dBA. These reductions would be sufficient for construction activities of the proposed Project to achieve the City of Oakland's 65 dBA daytime noise standard. However, in rare circumstances work beyond the 7:00 PM daytime construction workday restriction may still exceed existing ambient levels and therefore, continue to result in nighttime noise levels that would exceed the standards of the City's noise ordinance and the Project's construction noise impact would be significant and unavoidable with mitigation.

Impact NOI-2: Implementation of the NHB Project would not generate a substantial 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. (*Less than Significant*)

Proposed Project

Stationary Noise Sources

The operation of the Project would increase ambient noise levels in the immediate campus site vicinity, primarily from the operation of new building stationary equipment such as HVAC systems and new emergency generators proposed at the Project site.

The proposed HVAC system for the new hospital building would include air handling units (AHUs), exhaust fans, cooling towers and heat pumps. HVAC equipment would be mounted on the new hospital building rooftop as well as internally within the building on the 2nd floor and basement. While mechanical equipment is also proposed for the second floor and basement of the new hospital building, this equipment would be located within enclosures and include baffling and louvers sufficient to ensure these internal noise sources do not generate substantial exterior noise. Consequently, this analysis focuses on noise from the operation of roof top mechanical equipment and new emergency generators. Up to three new emergency backup diesel generators would be installed at ground level along the east side of the Project site adjacent to SR 24 to serve the proposed Project.

Rooftop HVAC equipment would be shielded from nearby receptors with a penthouse screen that would extend 15 feet above the roofline. As project-specific noise specifications for proposed equipment are not currently available, noise levels generated from this equipment were conservatively calculated based on representative sound power specifications for a large hospital with all-electric powered equipment and diagrams of the proposed locations of HVAC units and generators provided by UCSF. A conservative 5 dB reduction was assumed for noise emanating from the rooftop to account for restricted line-of-sight for rooftop sources and the presence of the penthouse screen. Modeled noise from the proposed HVAC units (AHUs and exhaust fans), cooling towers and heat pumps) on the proposed new hospital building rooftop are presented in **Table 4.10-11** below.

TABLE 4.10-11
NHB PROJECT STATIONARY NOISE SOURCES AND OPERATIONAL NOISE LEVELS

Source	# of Units	Sound Power Level (dB per unit)	A-weighted sound Pressure Level at the nearest Residential Property Line	Residential Standard per City Noise Ordinance
New Hospital Building Rooftop				
HVAC Exhaust	8	80	45 Leq	
AHUs (Supply)	6	83	47 Leq	
Cooling Towers	4	102	58 Leq	
Air Source Heat Pumps	2	93	49 Leq	
Ground-Level				
Emergency Generators	2	75	34 Leq	
Total Stationary Sources	11	--	59 dBA	61 dBA

SOURCE: SmithGroup, 2023; Stantec, 2023; ESA, 2023 (Appendix NOI).

The City of Oakland establishes its most stringent noise limits for nighttime (10:00 PM to 7:00 AM) noise at 45 dBA for residential properties as a receiving land use. However, the noise ordinance further states that if the measured ambient noise level already exceeds the applicable standard in any category, then the stated applicable noise level shall be adjusted so as to equal the ambient noise level. In other words, if existing noise is measured to be louder than the maximum allowed (i.e., the “applicable noise level standard”), the existing noise level shall be considered the maximum allowed, or the applicable noise level standard. As shown in Table 4.10-3, the existing nighttime average noise levels monitored on the Project site perimeter were 65 and 61 dBA. Hence the most conservative applicable stationary source noise standard would be 61 dBA.

The aggregate impact of these rooftop units would be a noise level of 59 dBA at the nearest residential property lines, respectively. These noise levels would not exceed the existing nighttime hourly average noise level of 61 dBA at the nearest residential land use which, per the City's noise ordinance would be the applicable noise standard. Based on the above, Project stationary equipment noise from the new hospital building HVAC rooftop mechanical equipment and the emergency generators would not result in a significant operational noise impact.

Each emergency generator would provide 2,000 kW power and be equipped with a 21-foot-tall exhaust stack. The proposed emergency generators would be located within enclosures to provide both noise attenuation and weather protection. Typically, the Bay Area Air Quality Management District permits emergency backup generators to be tested for up to 50 hours per year, or on average about 1 hour per week, to limit emissions of pollutants from diesel-powered generators. Therefore, regular maintenance operation testing of the emergency standby generators would occur for approximately four daytime hours per month (50 hours annually). Given the limited duration of noise events for testing, it would not substantially increase ambient noise levels. Furthermore, as shown in Table 4.10-11, the noise from testing would be well below the applicable noise standard at the nearest residential property lines. It should also be noted that operation of the proposed generators during a power failure or other emergency would be exempt from the restrictions of the City's noise ordinance.

Mitigation: None required.

Traffic Noise Increases from Loading Docks, Including from Trucks

The proposed Project would demolish the existing loading dock facilities and replace them with a new permanent loading dock integrated with the new hospital building and located in the same approximate area as the existing loading docks. As with the existing loading dock facilities, the proposed new hospital building loading dock would be directly accessed from MLK Jr. Way. Consequently, the location of noise from truck loading activities at the new hospital building is not expected to change compared to existing conditions once the new hospital building is operational. Currently, the existing hospital generates about 30 trucks on a typical weekday. Assuming that truck traffic would increase at the same rate as regular traffic generated by the Project (about 16 percent) the total number of daily trucks would increase to 35 per day at buildout. This incremental Project increase of 5 daily truck trips over existing conditions would be spread throughout the day and, therefore, would not meaningfully increase noise levels along access roadways, primarily MLK Jr. Way.

Prior to demolition of the existing hospital loading dock, the site support building, which would include a loading dock would be constructed on the eastern side of the Project site, adjacent to SR 24. This site support building would provide all delivery loading services for the existing hospital while the new hospital building is being built; and afterwards the building may remain and continue to be used as a supplemental facility. Consequently, during new hospital building construction, all delivery trucks would shift to access the site support building via 52nd Street and the Dover Street extension; and following construction, some delivery truck traffic would continue to occur on these roadways. As such, residential uses on 52nd Street would be exposed to an increase in Project truck noise generated by truck travel which currently does not occur.

(Vehicular traffic on 52nd Street would also increase compared to existing conditions associated with operation of the proposed parking structure on the Project site because the structure would be accessed via 52nd Street and Dover Street extension. The traffic noise impact of that traffic increase, including delivery truck traffic, is analyzed below under Impact NOI-4).

It should be noted that of the four existing residential structures located on 52nd Street across from the Project site, three are currently owned by UCSF and not used for residential purposes; furthermore, two of the UCSF residential structures will be relocated to 53rd Street as part of UCSF's planned Administrative Support Building (ASB) Project, prior to the start of NHB Project construction. Therefore, only one privately-owned residential structure on 52nd Street would be directly exposed to an increase in noise from delivery trucks traveling via 52nd Street to and from the site support building.

Assuming up to 35 delivery truck round trips per day would access the Project site from 52nd Street and Dover Street extension, based on existing truck temporal distribution, about 40 percent would occur in the early morning (before 8:00 AM), 40 percent would occur during late morning (8:00 AM to noon) and 20 percent would occur in the afternoon to evenings (noon to midnight). As under existing conditions, Project delivery trucks would consist of a range of vehicle sizes, consisting primarily of small and medium two-axle trucks, and more infrequently, larger trucks with three or more axles.

Noise levels from the Project-related truck traffic on 52nd Street were calculated using the algorithms of the FHWA Traffic Noise Prediction Model. This model takes into account the increases in vehicle trips, including trucks, and vehicle speed and noise emission characteristics from medium and heavy-duty trucks. Existing noise levels from traffic at the nearest residential structures on 52nd Street (60.9 dB Leq) do not exceed general plan noise standards. Based on the estimated Project increase in truck volumes on 52nd Street, noise levels would increase from 60.9 dB Leq to 61.4 dB Leq at the nearest residential structures on 52nd Street. Accordingly, the Project truck traffic noise levels increases along 52nd Street would be well below 3 dBA, which would be an increase that would be barely perceptible to the human ear. Consequently, the noise impact from the increase in delivery truck travel on 52nd Street would be less than significant.

Mitigation: None required.

Ambulance Related Noise

At the Project site, emergency vehicles currently access the existing emergency room near the corner of 52nd Street and MLK Jr. Way. Under the Project, internal circulation improvements would result in ambulances using 52nd Street and the Dover Street extension, or MLK Jr. Way, to access an ambulance patient drop-off located along the south side of the new hospital building.

UCSF BCH Oakland indicates that based on a review of available 2023 data, there is currently an average of approximately 5.4 daily ambulance visits. Of these, approximately 0.6 ambulances per day used their siren. Under the Project, UCSF BCH Oakland estimates that emergency department visits would increase by 3.5 percent between 2022 and 2032. As under existing conditions, an increase in ambulance siren activity under the Project would be most prevalent on arterials and collector streets leading to the Project site, particularly 52nd Street, and MLK Jr. Way.

As the Project would only marginally increase the frequency of emergency vehicle visits at the Project site, these increased visits would be spread out throughout the day, and only a fraction of the additional daily emergency vehicle visits would occur during the nighttime hours, the operational impact of additional siren noise from ambulance arrivals under the Project would be less than significant.

Mitigation: None required.

Noise Impacts from Operation of the Relocated Helistop under the Project

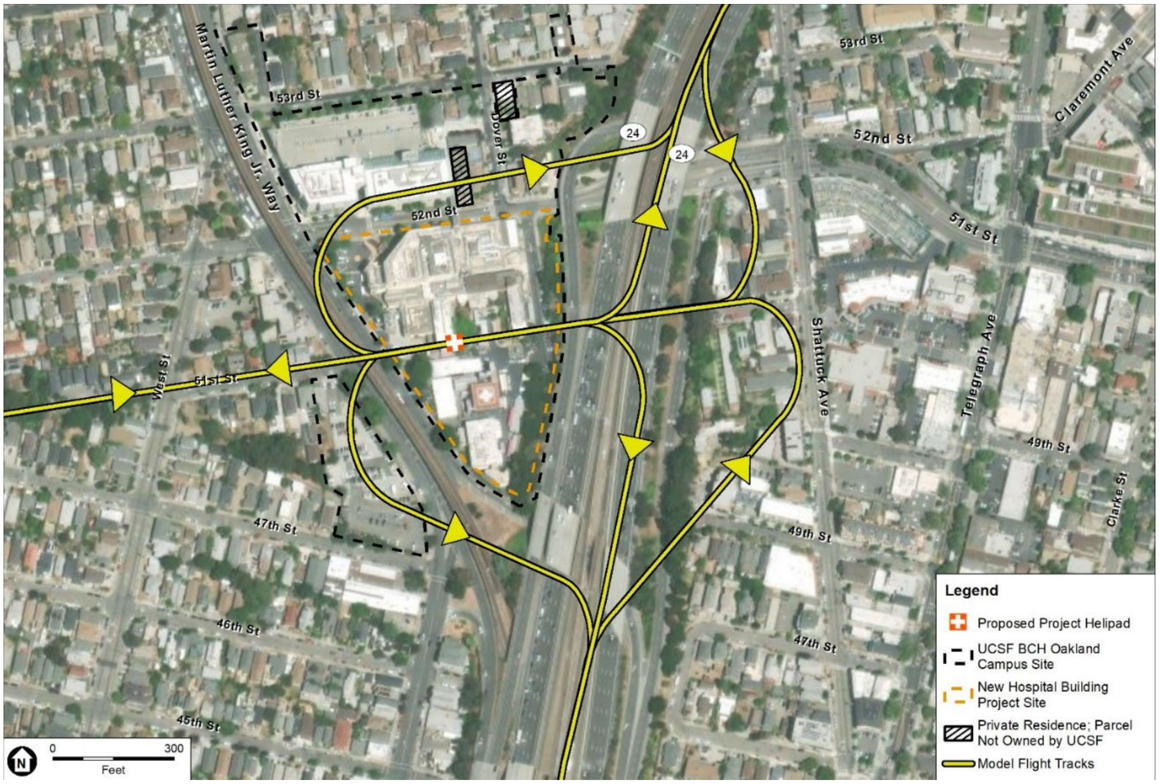
The existing UCSF BCH Oakland helistop is located on a 46-foot-tall helistop structure located in the southern portion of the Project site. The annual average CNEL contours from helistop operations under existing (2022) conditions are shown in Figure 4.10-2. In 2022, 786 helicopter operations occurred at the existing helistop[72], which amounts to an average of 2.2 daily helicopter operations. Helicopter activity is expected to grow at approximately 1 percent per year with or without the proposed Project. The projected number of annual helistop operations would be 858 by 2031, which amounts to an average of 2.4 daily helicopter operations.

Under the proposed Project, the helistop would be relocated approximately 160 feet to the north of the existing helistop, atop the new hospital building roof. The proposed rooftop helistop landing would measure approximately 136 feet above ground level (agl), or 100 feet higher in elevation compared to the existing helistop.

Figure 4.10-4 illustrates the changed arriving and departing flight tracks for helicopters that would use the relocated helistop atop the new hospital building. Similar to existing conditions, under the Project, helicopters would typically arrive from the east and depart to the west, and when feasible, fly over SR 24 and hospital property when landing at or departing from the helistop in an effort to minimize noise impacts on the surrounding community.

ESA prepared a Technical Noise Memorandum (see Appendix NOI) that assessed the proposed shift in flight tracks and increase in helicopter activity at the relocated helistop atop the new hospital building under the Project. CNEL noise contours were produced and analyzed for two scenarios: 2022 Existing Conditions and 2031 with the Proposed Project Conditions, as summarized below.

72 Each helicopter landing/takeoff is counted as an aircraft operation.

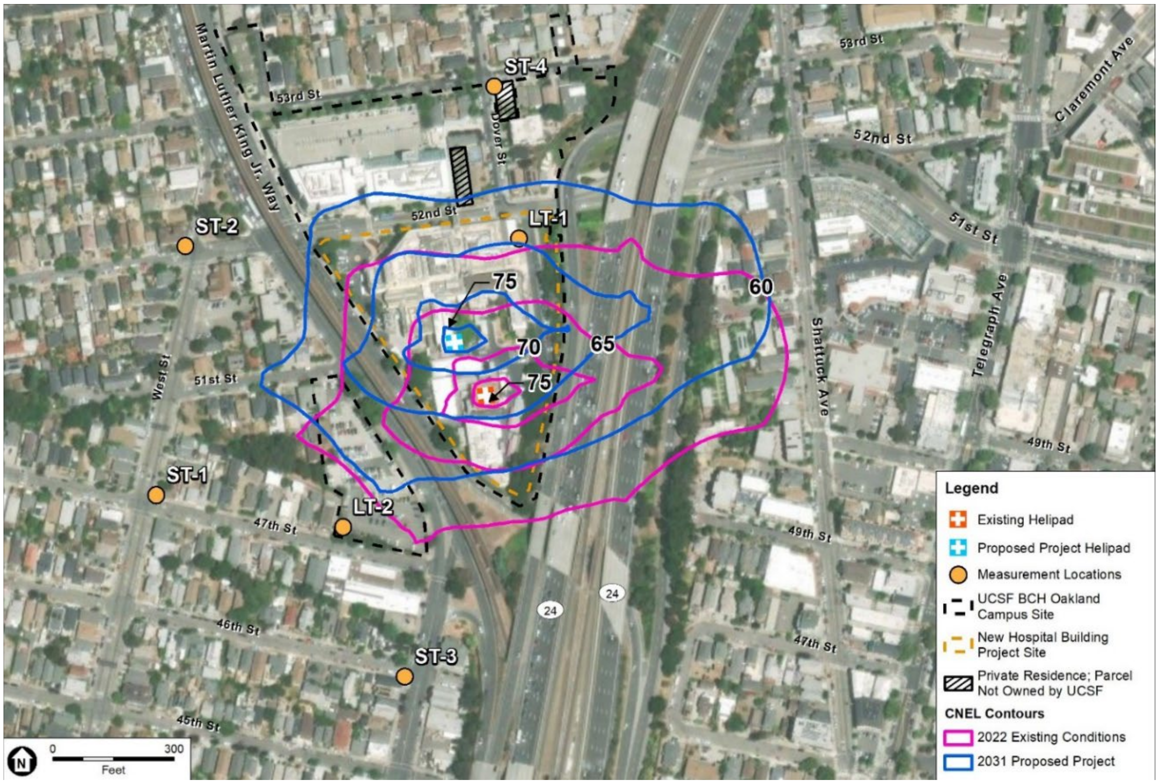


SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-4
Helicopter Flight Tracks Using
Proposed UCSF BCH Oakland Helistop atop New Hospital Building

Figure 4.10-5 presents CNEL contours under Existing Conditions and 2031 Project Conditions for the existing and relocated helistops. As illustrated in Figure 4.10-5, noise monitoring sites LT-1, ST-2, and ST-4 are located to the north of both the existing and relocated helistops, while LT-2, ST-1 and ST-3 are located to the south of both the existing and relocated helistops.



SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-5
Existing and 2031 Proposed Project
CNEL Contours Comparison for UCSF BCH Oakland Helistop

Table 4.10-12 summarizes and compares calculated helicopter CNEL values at the helicopter noise impact assessment sites under Existing Conditions and 2031 Project Conditions.

Overall Project-related changes show increases in noise exposure ranging from 1.8 dB to 5.5 dB at sensitive land uses to the north of the helistops and decreases in noise exposure ranging from 0.9 dB to -1.01 dB at sensitive land uses to the south of the helistops.

Impacts related to the increase in aggregate noise increases in terms of the CNEL noise metric are assessed relative to an increase of 3 dBA which is an increase that is considered to be barely perceptible to the human ear. As shown in Table 4.10-12, the only receptors that would experience an increase of greater than 3 CNEL would be the hospital itself (Location LT-1[73]). However, as explained below, the increases in helicopter noise at Location LT-1 would not be perceived due to the substantial contribution of background highway traffic noise at the location.

[73] It should be noted that the predicted CNEL increase at the hospital is an impact of the Project on itself, which would be a non-CEQA impact that would be addressed by UCSF BCH Oakland through implementation of an acoustical study to ensure that building materials are of sufficient design to maintain interior hospital noise to acceptable levels.

TABLE 4.10-12
MODELED CNEL VALUES AT NOISE IMPACT ASSESSMENT SITES FOR PROPOSED NHB PROJECT HELISTOP

Site	Land Use	Existing Helistop CNEL (dB)	Proposed Project Helistop" CNEL (dB)	
		2022	2031	Project-Related Change
LT-1	Hospital	59.0	64.6	5.6
LT-2	Residential	56.9	56.0	-0.9
ST-1	Residential	53.8	52.7	-1.01
ST-2	Residential	50.8	52.6	1.8
ST-3	Residential	52.3	51.3	-1.0
ST-4	Residential	52.2	54.6	2.4

SOURCE: ESA, 2023

Figure 4.10-6 graphically displays the 2031 Project CNEL contours for the relocated helistop, along with CNEL contours for the adjacent SR 24 freeway background traffic. Location LT-1 is located approximately 275 feet from the centerline of SR 24.

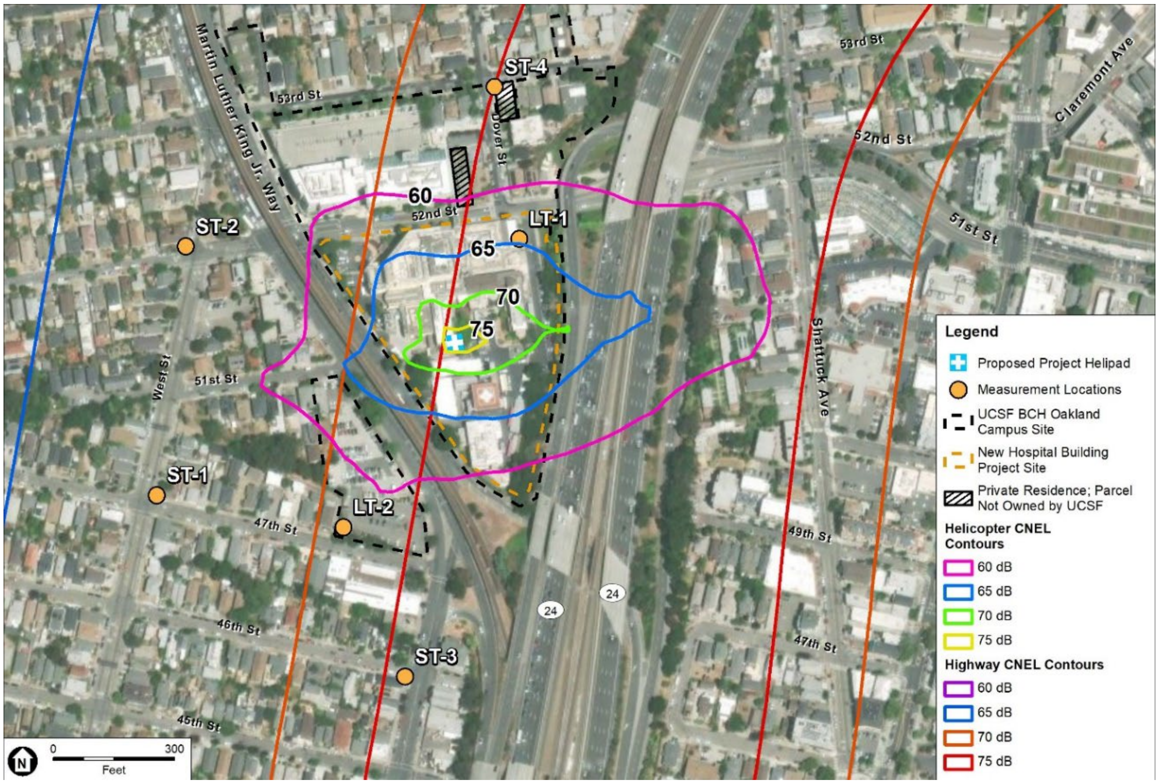
It should be noted that site-specific noise monitoring conducted at Location LT-1 indicates that the noise levels at this location are approximately 71 dBA CNEL. Assuming ambient conditions at Location LT-1 are 71 dBA CNEL, the combined noise level (helicopter noise of 65.5 dBA CNEL and traffic noise of 71 dBA CNEL) would be 72.1 dBA, for a maximum increase in ambient noise of 1.1 dBA. Only noise level increases of 3 dBA or more are considered perceptible by the human ear. Therefore, Project helicopter operations would not result in a substantial permanent increase in noise levels at sensitive receptors in the Project area, and the impact would be less than significant.

Supplemental Helistop Noise and Vibration Analysis for the Proposed Project

Additional information on the impacts of helicopter noise, and related sleep disturbance, speech interference and vibration from helicopters is discussed in this section.

For informational purposes, alternative metrics were considered to estimate speech interference and sleep disturbance associated with operation of the proposed Project helistop. While there are no accepted thresholds, methodology or metrics that may be used to evaluate potential speech interference and sleep disturbance impacts under CEQA (LAWA, 2020), the Technical Noise Memorandum (Appendix NOI) provides a helistop noise analysis using the SEL), L_{max} and TA metrics to evaluate how speech interference and sleep disturbance could occur with the proposed relocation of the helistop under the Project. That assessment is summarized in this Noise section.

The assessment of helicopter single event noise exposure was analyzed by using the AEDT to calculate SEL, L_{max} and TA values at the helicopter noise impact assessment sites. The SEL values were used to assess the potential for sleep disturbance, and L_{max} and TA values were used to assess the potential for speech interference. Single event metrics such as SEL and L_{max} represent worst-case noise exposure for a single noise event, and as such, are not affected by changes to the total number of annual operations.



SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-6
2031 Proposed Project CNEL Contours for UCSF BCH Oakland Helistop Compared with CNEL Contours for SR 24 Background Traffic

Sleep Disturbance Assessment

Sleep disturbance is often expressed as "maximum percent awakened," and represents the potential for sleep disturbance within the population residing beneath a specific flight path, indicating the maximum percentage expected to be awakened. For example, if a city block houses 200 individuals and the maximum percent awakened is 10 percent, this implies that up to 20 people may be awakened due to a passing flight during nighttime hours (10 PM to 7 AM). As it relates to project-related change, a 1 percent increase would equate to an additional two (2) people potentially being awakened during nighttime hours.

To determine potential sleep disturbance, an outdoor-to-indoor noise level reduction (NLR) is applied. A typical NLR for a residence in the project area with windows open is 10-15 dB and 15-20 dB when windows and doors are closed. For this analysis, an NLR of 15 dB was applied to modeled results. For example, a single event with an exterior SEL of 90 dB would result in an interior SEL of 75 dB.

Table 4.10-13 summarizes the calculated SEL values at each noise impact assessment site location for potential sleep disturbance for the proposed Project. The 15 dB NLR was subtracted from the exterior SEL and the Federal Interagency Committee on Aviation Noise (FICAN) dose response was calculated based on the interior SEL (FICAN, 1997).

TABLE 4.10-13
MODELED SEL VALUES AND SLEEP DISTURBANCE SITES FOR THE PROPOSED NHB PROJECT

Site	Land Use	Existing Helistop			Proposed Project Helistop			Project Related Change in Maximum Awakened (%)
		Exterior SEL (dB) [a]	Interior SEL (dB)[b]	Maximum % Awakened [c]	Exterior SEL (dB) [a]	Interior SEL (dB) [b]	Maximum % Awakened [c]	
LT-1	Hospital	99.4	84.4	11.1	102.6	87.6	12.3	1.2
LT-2	Residential	95.3	80.3	9.7	93.0	78.0	8.9	-0.8
ST-1	Residential	98.1	83.1	10.6	95.3	80.3	9.7	-1.0
ST-2	Residential	91.0	76.0	8.2	93.2	78.2	9.0	0.7
ST-3	Residential	94.2	79.2	9.3	87.6	72.6	7.2	-2.1
ST-4	Residential	87.4	72.4	7.1	90.4	75.4	8.0	0.9

NOTES:
a. AEDT calculated SEL value for the A-109 on flight track closest to receiver.
b. Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.
c. Maximum percent awakened calculated using FICAN dose-response curve.
SOURCE: ESA, 2023.

As shown in Figure 4.10-1, sites LT-1, ST-2, and ST-4 are located to the north of the helistop, while LT-2, ST-1 and ST-3 are located to the south of the helistop. Overall, as shown in Table 4.10-13, project-related changes (i.e., relocation of the helistop from its current position) show an increase in maximum percent awakened north of the existing helistop, from 0.7 dB to 1.2 dB, and a decrease in maximum percent awakened south of the existing helistop, from -0.8 dB to -2.1 dB.

As indicated in Table 4.10-13, relocation of the helistop would result in a shift of SEL values, with values increasing for residences to the north and values decreasing for residences to the south. In addition, as discussed previously, flights to and from the helistop would increase by 72 annual operations by 2031, a 9.2 percent increase. The potential increases and decreases in nighttime awakenings presented in Table 4.10-13 that would occur with the Project are dependent on a number of factors. First, of the estimated increase in helicopter flights, 22 annual operations would occur during nighttime hours (10:00 PM to 7:00 AM), and consequently, potentially result in nighttime awakenings. Of these additional flights during nighttime hours, approximately 20 percent (or five annual operations) would be along the east-west flight track, where the vast majority of residences are located. In contrast, increased flight activity that would operate over SR 24 (i.e., along the north-south flight tracks) would account for approximately 40 percent (or nine annual operations) in each direction of travel (i.e., 40 percent north and 40 percent south). Consequently, while the proposed relocation of the helistop would result in some new residential land uses to experience an increase in single event noise, the occurrence during which the increase might be experienced would be infrequent.

Speech Interference Assessment

Table 4.10-14 summarizes calculated exterior L_{max} values at the helicopter noise impact assessment sites for the closest modeled flight route and the potential for speech interference when all modeled flight routes are taken into consideration. Potential speech interference is assumed to occur when interior noise levels are at or above 65 dB. The AEDT was used to calculate exterior noise levels that exceeded 80 dB, (e.g., TA 80 dB in minutes per day) to account for the 15 dB NLR inside the residence. The data in Table 4.10-14 shows that the Project would not result in a change in the existing potential speech interference duration at any of the modeled residential site locations, and would result in a small decrease at LT-1.

TABLE 4.10-14
CALCULATED TIME ABOVE (TA) AND SPEECH INTERFERENCE FOR THE PROPOSED NHB PROJECT

Site	Land Use	Existing Helistop		Proposed Project Helistop		Project Related Change (min/day)
		Lmax (dB) [a]	2022 TA65 (min/day)	Lmax (dB) [a]	2031 TA65 (min/day)	
LT-1	Hospital	99.4	11.1	102.6	12.3	1.2
LT-2	Residential	95.3	9.7	93.0	8.9	-0.8
ST-1	Residential	98.1	10.6	95.3	9.7	-1.0
ST-2	Residential	91.0	8.2	93.2	9.0	0.7
ST-3	Residential	94.2	9.3	87.6	7.2	-2.1
ST-4	Residential	87.4	7.1	90.4	8.0	0.9

NOTES:
a. AEDT calculated SEL value for the A-109 on flight track closest to receiver.
SOURCE: ESA, 2023.

Operational Vibration Assessment for the Proposed Project

Helicopter noise contains substantial energy in the frequency range of 10-80 Hz. This energy has the potential to produce rattling of windows or objects within buildings that are located within close proximity to helistops or other areas with nearby helicopter operations. Vibration effects from project-related helicopter operations would be airborne and would affect windows first, and then potentially, walls and objects located on shelves or picture frames affixed to walls.

Vibration effects are more likely to occur in older residential buildings or in buildings of relatively light-weight construction. In contrast, these effects are less likely to occur within commercial or institutional buildings such as hospitals, that are typically made of heavier construction, including more substantial windows.

Due to proximity, low frequency and vibration effects would be more pronounced within the Project site than within the surrounding areas off-campus. Since the proposed replacement helistop would be at a higher elevation (100 feet higher) than the existing helistop, it is expected that the helicopters would be operating at a higher altitude over surrounding off-campus residential areas, and therefore, would result in fewer potential low frequency or vibration effects at sensitive uses than under existing conditions.

Project Variant

Stationary Noise Sources

The Project variant would locate the helistop atop the parking garage instead of the roof of the new hospital building. As such, there could be some minor variation with the configuration of rooftop HVAC equipment atop the new hospital building under the Project variant compared to the proposed Project. However, the new hospital building under the Project variant would require the same type of rooftop equipment as under the proposed Project, and correspondingly, would have the similar stationary source operational noise impacts at nearby receptors as the proposed Project.

Mitigation: None required.

Traffic Noise Increases from Loading Docks, including from Trucks

The Project variant proposes a site loading dock building and permanent loading dock facilities in the same locations as under the proposed Project. In addition, overall operational activities, including loading activities and daily truck deliveries under the Project variant would be the same as under the Project. Consequently, the Project variant would have the same less than significant operational noise impacts from truck loading activities as the proposed Project.

Mitigation: None required.

Ambulance Related Noise

The Project variant would have the same level of emergency department facilities, and the same entrance points for ambulances to access the Project site. Consequently, the Project variant would have the same less than significant operational noise impacts from ambulance activities as the proposed Project.

Mitigation: None required.

Noise Impacts from Operation of the Relocated Helistop under the Project Variant

Under the Project variant, the helistop would be relocated approximately 125 feet to the south of the existing helistop and installed atop the parking garage, instead of on the roof of the new hospital building. The proposed helistop landing atop the parking garage would measure approximately 42 feet agl, or approximately 6 feet higher in elevation than the existing helistop and about 94 feet lower than the proposed helistop atop the new hospital building under the Project.

Figure 4.10-7 illustrates the arriving and departing flight tracks for helicopters that would use the relocated helistop atop the proposed parking garage. As under the proposed Project, under the Project variant, helicopter operations (landing plus takeoffs) are projected to increase compared to existing conditions.

ESA prepared a Technical Noise Memorandum (see Appendix NOI) that assessed the shift in helistop location and increase in helicopter activity at the relocated helistop atop the proposed

SOURCE: AEDT, 2023; Environmental Science Associates, 2023

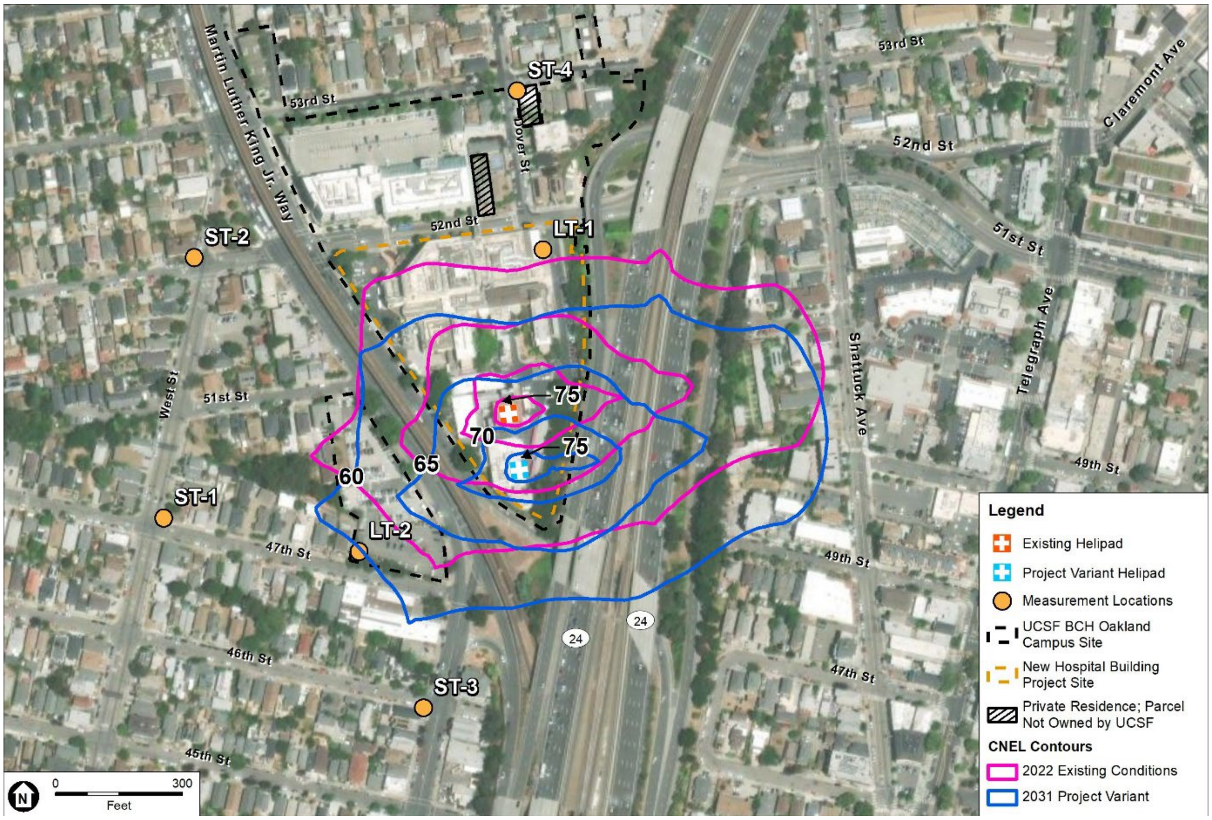
UCSF BCH Oakland NHB Project EIR

Figure 4.10-7
Helicopter Flight Tracks Using
Proposed UCSF BCH Oakland Helistop atop Parking Garage

garage under the Project variant. **Figure 4.10-8** presents Existing Conditions and 2031 Project Variant Conditions CNEL contours for the existing and relocated helistops. **Table 4.10-15** summarizes and compares calculated helicopter CNEL values at the helicopter noise impact assessment sites under Existing Conditions and 2031 Project Variant Conditions.

Overall project variant-related changes show decreases in noise exposure ranging from -0.4 dB to -2.5 dB at sensitive land uses to the north of the helistops and increases in noise exposure ranging from 0.2 dB to 2.8 dB at sensitive land uses to the south of the helistops. As shown in Table 4.10-15, no receptors would experience a noise increase of greater than 3 CNEL.

Figure 4.10-9 graphically displays the 2031 Project Variant CNEL noise levels for the relocated helistop, along with CNEL contours for the adjacent SR 24 freeway background traffic. For the same reasons discussed above for the proposed Project, the estimated increases in helicopter noise under the Project variant would not be perceived due to the substantial contribution of background highway traffic noise from the adjacent SR 24. Therefore, the Project variant would have a less than significant operational noise impact with respect to helicopter noise.



SOURCE: AEDT, 2023; Environmental Science Associates, 2023

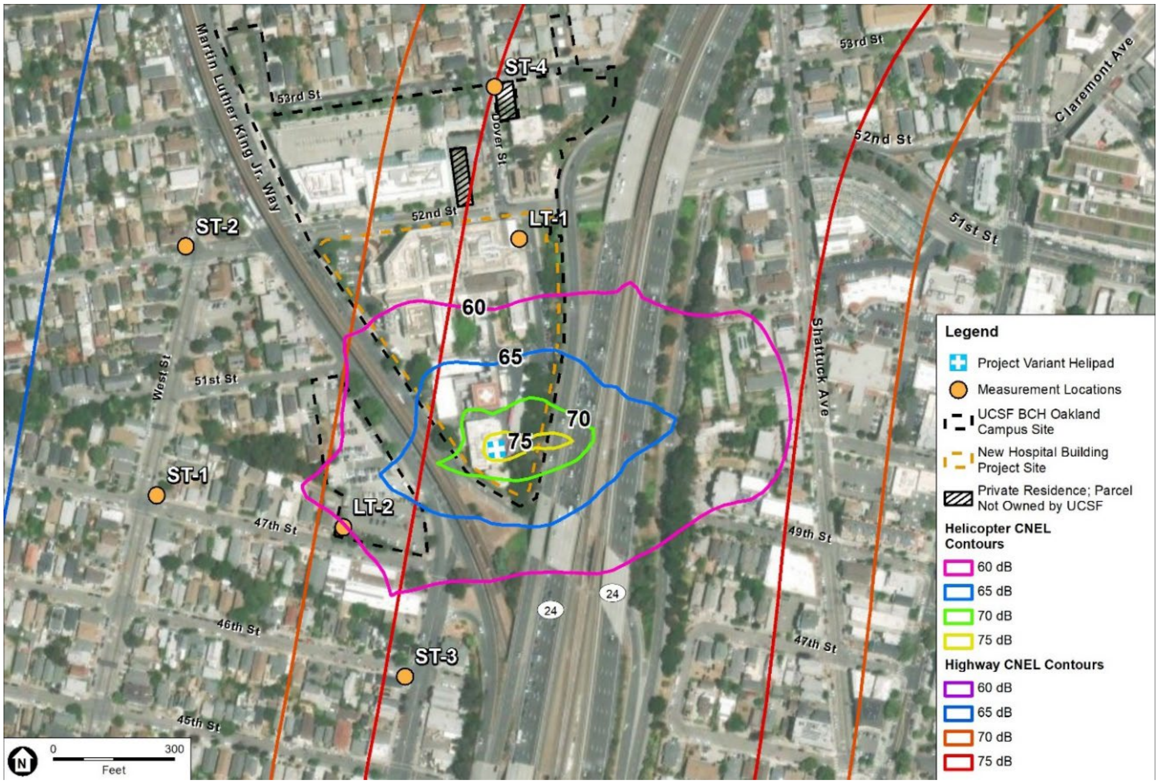
UCSF BCH Oakland NHB Project EIR

Figure 4.10-8
Existing and 2031 Project Variant
CNEL Contours Comparison for UCSF BCH Oakland Helistop

TABLE 4.10-15
MODELED CNEL VALUES AT NOISE IMPACT ASSESSMENT SITES FOR NHB PROJECT VARIANT HELISTOP

Site	Land Use	Existing Helistop CNEL (dB)	Project Variant Helistop" CNEL (dB)	
		2022	2031	Project-Related Change
LT-1	Hospital	59.0	56.5	-2.5
LT-2	Residential	56.9	59.7	2.8
ST-1	Residential	53.8	54.0	0.2
ST-2	Residential	50.8	50.4	-0.4
ST-3	Residential	52.3	54.5	2.2
ST-4	Residential	52.2	51.3	-0.9

SOURCE: ESA, 2023



SOURCE: AEDT, 2023; Environmental Science Associates, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.10-9
2031 Project Variant CNEL Contours for Helistop
Compared with CNEL Contours for SR 24 Background Traffic

The relative difference between existing, Project variant, and proposed Project helistop elevation poses no significant change in CNEL noise exposure. All noise exposure is a result of the helicopter flight performance, flight track geometry, flight track use, and land uses the aircraft overflies.

Mitigation: None required.

Supplemental Helistop Noise and Vibration Analysis for the Project Variant

Similar to that provided for the Project, for informational purposes, alternative metrics were considered to estimate speech interference and sleep disturbance associated with operation of the proposed Project variant helistop. The Technical Noise Memorandum (Appendix NOI) provides a helistop noise analysis using the Sound Exposure Level (SEL) and Time Above (TA) metrics to evaluate how speech interference and sleep disturbance could be affected by the proposed relocation of the helistop under the Project variant. That assessment is summarized below.

Sleep Disturbance Assessment

Table 4.10-16 summarizes the calculated SEL values at each noise impact assessment site location for potential sleep disturbance under the Project variant.

TABLE 4.10-16
MODELED SEL VALUES AND SLEEP DISTURBANCE SITES FOR THE NHB PROJECT VARIANT

Site	Land Use	Existing Helistop			Project Variant Helistop			Project Variant Related Change in Maximum Awakened (%)
		Exterior SEL (dB) [a]	Interior SEL (dB)[b]	Maximum % Awakened [c]	Exterior SEL (dB) [a]	Interior SEL (dB) [b]	Maximum % Awakened [c]	
LT-1	Hospital	99.4	84.4	11.1	98.2	83.2	10.7	-0.4
LT-2	Residential	95.3	80.3	9.7	98.3	83.3	10.7	1.0
ST-1	Residential	98.1	83.1	10.6	97.5	82.5	10.4	-0.2
ST-2	Residential	91.0	76.0	8.2	89.6	74.6	7.8	-0.4
ST-3	Residential	94.2	79.2	9.3	91.8	76.8	8.5	-0.8
ST-4	Residential	87.4	72.4	7.1	85.5	70.5	6.6	-0.5

NOTES:
a. AEDT calculated SEL value for the A-109 on flight track closest to receiver.
b. Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.
c. Maximum percent awakened calculated using FICAN dose-response curve.
SOURCE: ESA, 2023.

Overall, as shown in Table 4.10-16, Project variant-related changes show a decrease in maximum percent awakened from -0.2 dB to -0.8 dB at all modeled site locations except one. An increase of 1.0 percent is expected at LT-2, southwest of the hospital.

As indicated in Table 4.10-16, relocation of the helistop would result in a shift of SEL values, with values increasing for residences to the south and values decreasing for residences to the north. Similar to the case discussed for the Project, above, only a fraction of the total increase in helicopter flights would occur during nighttime hours (10:00 PM to 7:00 AM), and thus potentially could result in nighttime awakenings. Furthermore, only a fraction of that number would occur along the east-west flight track, where the vast majority of residences that would experience an increase in SEL are located. Consequently, while the relocation of the helistop would result in some new residential land uses experience an increase in single event noise, the occurrence during which the increase might be experienced would be infrequent.

Speech Interference Assessment

Table 4.10-17 summarizes calculated exterior L_{max} values at the helicopter noise impact assessment sites for the closest modeled flight route and the potential for speech interference when all modeled flight routes are taken into consideration. The data in Table 4.10-17 shows that overall the Project variant would result in only a small increase in the existing speech interference duration at the modeled residential site locations, and would result in a small decrease at LT-1.

TABLE 4.10-17
CALCULATED TIME ABOVE (TA) AND SPEECH INTERFERENCE FOR THE NHB PROJECT VARIANT

Site	Land Use	Existing Helistop		Project Variant Helistop		Project Variant Related Change (min/day)
		Lmax (dB) [a]	2022 TA65 (min/day)	Lmax (dB) [a]	2031 TA65 (min/day)	
LT-1	Hospital	98.7	0.4	98.4	0.3	-0.1
LT-2	Residential	101.0	0.1	104.7	0.2	0.1
ST-1	Residential	100.6	0.0	102.4	0.1	0.1
ST-2	Residential	85.1	0.0	82.8	0.1	0.1
ST-3	Residential	90.4	0.1	97.5	0.1	0.0
ST-4	Residential	88.1	0.1	85.7	0.2	0.1

NOTES:
a. AEDT calculated SEL value for the A-109 on flight track closest to receiver.
SOURCE: ESA, 2023.

Operational Vibration Assessment for the Project Variant

As discussed above, helicopter noise contains substantial energy in the frequency range of 10-80 Hz. This energy has the potential to produce rattling of windows or objects within buildings that are located within close proximity to helistops or other areas with nearby helicopter operations. Vibration effects are more likely to occur in older residential buildings or in buildings of relatively light-weight construction, as opposed to commercial or institutional buildings such as hospitals, that are typically made of heavier construction.

Similar to that discussed for the Project, due to proximity, low frequency and vibration effects would be more pronounced within the Project site than within the surrounding areas off-campus. Since the proposed helistop under the Project variant would be located at approximately the same elevation as the existing helistop within the Project site, it is expected that the Project variant would result in similar level of low frequency or vibration effects at off-campus sensitive uses as under the existing conditions.

Impact NOI-3: Construction activities for the NHB Project and related improvements could result in generation of excessive groundborne vibration or groundborne noise levels. (*Less than Significant with Mitigation*)

Proposed Project

The types of Project construction-related activities associated with propagation of groundborne vibration would primarily include the use of jack hammers and bull dozers for demolition, the use of vibratory rollers for compacting, and drilling for pile installation for new building construction. As discussed above, no pile driving or blasting activities are proposed during Project construction. Rather, foundations would be installed using drilled piers.

As stated earlier in this section, the thresholds for potential architectural damage due to groundborne vibrations is 0.5 in/sec PPV for new residential structures and modern commercial buildings and 0.25 in/sec PPV for historic and older buildings. A matrix of vibration from construction activities with distance is presented in **Table 4.10-18**. As can be seen from Table 4.10-18, use of a vibratory roller as close as 15 feet from a non-historic building would still be below the threshold for architectural damage.

TABLE 4.10-18
VIBRATION LEVELS FOR CONSTRUCTION ACTIVITY

Equipment	Estimated Peak Particle Velocity (inches per second)				
	At 25 Feet (reference)	At 50 Feet	At 75 Feet	At 100 Feet	At 170 Feet
Jackhammer	0.035	0.016	0.010	0.008	0.004
Loaded Trucks	0.076	0.035	0.023	0.017	0.009
Caisson Drilling	0.089	0.041	0.027	0.019	0.011
Large Bulldozer	0.089	0.041	0.027	0.019	0.011
Vibratory Roller	0.20	0.100	0.063	0.046	0.025

NOTE:
Dark-shaded areas indicate distances where vibration levels would exceed the damage criterion for conventional structures.
Lighter shaded areas indicate the distances at which the damage criterion for historic structures or buildings that are documented to be structurally weakened would be exceeded.

SOURCES: Caltrans (2020), FTA (2018).

There are structures of historical significance in the vicinity of the Project construction site that could potentially be impacted by the proposed Project. As discussed in Section 4.3, *Cultural Resources,* the 55th and Dover Residential District Area of Secondary Importance (ASI) is located immediately north of the Project site. As shown in Figure 4.3-1, two contributors to the district (720 52nd Street, a privately-owned residential structure, and 5203 Dover Street, a former residential structure owned by UCSF), are located on the opposite side of 52nd Street from the Project site. These structures are located approximately 75 feet north of the northern boundary of the Project site along 52nd Street and more than 200 feet from where Project building demolition and building construction would occur. At these distances, vibrations from vibratory rollers for compacting and drilling for pile installation would be well below the architectural damage thresholds, and as a result the impact would be less than significant.

The potential for human annoyance and sleep disturbance due to vibration are primarily a concern when substantial construction activities are proposed during the nighttime hours, which would not occur with implementation of Mitigation Measure NOI-1b: Construction Hours, above. Therefore, with mitigation, human annoyance and sleep disturbance impacts from vibration would be less than significant.

UCSF also operates vibration sensitive equipment in some of its existing buildings, such as magnetic resonance imaging (MRI) machines and electron microscopes and such equipment may be located within the campus site. Construction activities in close proximity to such equipment could generate vibration levels of 65 VdB or greater that could affect these operations, depending on the degree of vibration isolation designed into their systems. Therefore, there is a potential for a significant impact to vibration-sensitive equipment and **Mitigation Measure NOI-3** is set forth below to reduce such an impact to a less-than-significant level.

Project Variant

The Project variant would locate the helistop atop the parking garage instead of the roof of the hospital. Because the Project variant would have the same construction footprint, and the same level of building demolition and new building construction as the proposed Project, the Project variant would have the same vibration impacts from construction activities as the proposed Project, and the same mitigation would be required.

Mitigation Measure NOI-3: Assessment and Relocation/Retrofitting of Vibration-Sensitive Equipment

UCSF shall evaluate the presence of vibration-sensitive equipment within 150 feet of construction and demolition areas. Any sensitive equipment shall be evaluated for the existing extent of vibration isolation and relocated, or vibration isolation shall be further embellished, as warranted. Based on available guidance (FTA, 2018), a performance standard of 65 VdB shall be implemented in lieu of any other available equipment-specific criterion.

Significance after Mitigation: Less than Significant.

Impact NOI-4: Operation of the NHB Project would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, where ambient noise levels already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use. ***(Less than Significant)***

Proposed Project

Operation of the Project would be considered to generate a significant impact if it resulted in a permanent increase in ambient noise levels greater than 3 dBA above levels existing without the project for areas already impacted by noise. Increases in traffic noise levels due to project traffic were analyzed using the FHWA Traffic Noise Prediction Model and the traffic data provided by the transportation consultant for the Existing Conditions, Existing plus Project Conditions, and 2040 Plus Project Conditions. Peak hour intersection turning data[74] were used to calculate traffic increases and the resulting traffic-generated noise increases on roadway segments most affected by Project-related traffic. The roadway segments analyzed and the modeled noise levels are presented in **Table 4.10-19**. The table shows existing roadside traffic noise levels, whether those levels already exceed noise compatibility standards and the applicable increase in noise used as the threshold. All roadways are assumed to be flanked by residential receptors which is the use with the most stringent standard for land use noise compatibility.

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74 Because average daily traffic volumes and nighttime fraction data are not available for all the roadways analyzed, calculation of an Ldn value from available traffic volume data is speculative. This analysis uses peak hour Leq to determine the existing and with project traffic noise levels. Caltrans recognizes that the Ldn is typically approximately equal to the peak hour Leq (Caltrans, 2013).

TABLE 4.10-19
PEAK-HOUR TRAFFIC NOISE LEVELS IN THE VICINITY OF THE UCSF BCH OAKLAND CAMPUS SITE (dBA)

Roadway Segment[a,b]	(A) Existing	Does Existing Noise Exceed Residential Compatibility Standard?	Applicable Significance Threshold	(B) Existing Plus Project	(B-A) Difference between Existing Plus Project and Existing	(D) 2040 Plus Project	(D-A) Difference between Cumulative Plus NHB and Existing
Dover Street between 53rd Street and 52nd Street	55.1	No	>5 dBA increase in an area >70 dBA Ldn	55.7	0.6	57.7	2.6
MLK Jr. Way between 53rd Street and 52nd Street	71.4	Yes	>3 dBA increase in an area <70 dBA Ldn	71.5	0.1	72.3	0.9
MLK Jr. Way between 52nd Street and SR 24 Ramps/47th Street	71.5	Yes	>3 dBA increase in an area <70 dBA Ldn	71.5	0	72.4	0.9
52nd Street between West Street and MLK Jr. Way	63.2	No	>5 dBA increase in an area <70 dBA Ldn	63.5	0.3	64.4	1.2
52ndStreet between MLK Jr. Way and Dover Street	60.9	No	>5 dBA increase in an area <70 dBA Ldn	61.0	0.1	62.2	1.3
52nd Street between Dover Street and Shattuck Avenue	63.2	No	>5 dBA increase in an area <70 dBA Ldn	63.4	0.2	64.3	1.1

NOTES:

a. Road center to receptor distance is 15 meters (approximately 50 feet) for all roadway segments. Noise levels were determined using algorithms of the FHWA Traffic Noise Prediction Model.
b. The analysis considered the vehicle mix based on – cars 95 percent, medium trucks three percent, and heavy trucks two percent. Traffic speeds for all vehicle classes were set at 25 mph for all vehicle classes, except for MLK Way which is 30 mph, and 52nd Street between MLK Jr. Way and Dover Street which is 20 mph.

SOURCE: ESA, 2023.

As shown in Table 4.10-19, the increase in peak hour traffic noise in the vicinity of the campus site under the Existing Plus Project Conditions compared to the Existing Conditions would be less than 3 dBA on all roadway segments. This is also true when the 2040 Plus Project Conditions are compared to Existing Conditions. Overall, traffic noise increases associated with the Project along all analyzed roadway segments in the vicinity of the campus site would be less than 3 dBA, and consequently, the impact related to traffic noise would be less than significant.

Mitigation: None required.

Project Variant

The Project variant would generate the same amount and distribution of traffic as that which would be generated under the proposed Project. As such, the impact related to traffic noise from the Project variant would be the same as that which would occur under the Project, and would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-NOI-1: Implementation of the NHB Project, combined with other concurrent construction projects in the project area, could generate a substantial temporary increase in ambient noise levels from construction activity 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. (*Less than Significant with Mitigation*)

The geographic scope of analysis for cumulative construction noise and vibration impacts encompasses sensitive receptors within approximately 600 feet of the Project construction site.[75] Beyond 600 feet, the contributions of noise from other projects would be greatly attenuated through both distance and intervening structures and their contribution would be expected to be minimal. Section 4.0, *Introduction to Environmental Analysis*, presents the list of reasonably foreseeable future projects in the Project vicinity that could contribute to cumulative construction noise impacts.

There is one reasonably foreseeable off-site cumulative construction project in the Project vicinity: the City of Oakland's MLK Jr. Way Roadway Improvement Plan. This project would reduce the number of travel lanes from 3 to 2 in each direction and add protected bike lanes as well as repave MLK Jr. Way. Since the earliest this City roadway improvement project would start would be 2025, construction activities associated with this cumulative project could potentially overlap with Project construction. As indicated in Table 4.10-9, construction equipment associated with paving can generate noise levels of 77 to 85 dBA at 50 feet. Construction activities for this project would be subject to the City of Oakland's Standard Conditions of Approval (SCA). Specifically, SCA 67 establishes limits on the hours and days of construction. SCA 68 requires project applicants to implement noise reduction measures to reduce noise impacts due to construction.

Other UCSF-planned cumulative projects within and/or or adjacent to the campus site include the Administrative Support Building (ASB) Project, BCH Infrastructure Improvement Project, and the replacement of an underground storage tank. All of these projects would be subject to applicable SCAs identified in the CHRCO CMP Project FEIR and compliance with existing regulations. Consistent with the SCAs, during all construction activities, a 15-foot-high temporary noise barrier will be placed between the proposed construction site and receptor locations.

Implementation of the required City of Oakland SCAs and/or mitigation measures for the cumulative projects either within the campus site or Project vicinity would reduce noise from the individual projects. However, if construction activities for these other cumulative projects would require work during nighttime hours to avoid traffic impacts, most notably the City of Oakland's

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[75] This screening threshold distance was developed based on stationary source noise attenuation equations (Caltrans, 2013a) and the combined noise level generated by typical construction phases for a given project (assuming multiple pieces of equipment) at a distance of 50 feet. Using the attenuation equations, the maximum noise level of 89 A-weighted decibels (dBA) for both excavation and finishing would diminish to below 70 dBA (speech interference) at 600 feet.

A receptor experiencing noise levels of 89 dBA from two adjacent construction sites would experience a cumulative noise level of 91 dBA (the acoustical sum of 89 dBA plus 89 dBA), which would still be below 70 dBA at 600 feet which, hence, is used as the geographic scope for approaching a significant cumulative impact.

MLK Jr. Way Roadway Improvement Plan, then such a cumulative contribution could further exacerbate the significant and unavoidable impact of the proposed Project or variant with respect to work during extended or nighttime hours. However, **Mitigation Measure TRANS-5, Construction Coordination and Monitoring Measures** in Section 4.11, *Transportation*, contains a measure that requires coordination with the City of Oakland Department of Transportation to ensure that the construction of the NHB Project and the City's MLK Jr. Way Complete Streets Paving Project, which are expected to overlap, do not conflict with each other, and minimize the potential combined effects of these construction projects on circulation for various travel modes. Hence, while the potential exists for cumulative projects to combine with the noise from the construction of the Project or Project variant, mitigation measures would be in place to ensure that there would not be conflicts and would eliminate the potential for cumulative contributions to nighttime noise. Therefore, implementation of **Mitigation Measures NOI-1a, NOI-1b** and **TRANS-5** would serve to reduce the cumulative construction noise contributions to a less than significant level.

Mitigation: Implement Mitigation Measures NOI-1a, NOI-1b, and TRANS-5.

Significance after Mitigation: Less than Significant.

Impact C-NOI-2: Implementation of the NHB Project, combined with cumulative development in the project area, would not generate substantial permanent increases 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. (*Less than Significant*)

There are no reasonably foreseeable off-site cumulative projects within the geographic scope of the Project that would generate substantial operational noise and, consequently, cumulative operational noise would be limited to other UCSF-planned projects within the campus site. However, operation of these on-campus cumulative projects would similarly be subject to design controls, and regulatory requirements to limit noise from stationary sources, as needed. Consequently, cumulative stationary source operational impacts of the Project or Project variant would be less than significant.

Mitigation: None required**.**

Impact C-NOI-3: Implementation of the NHB Project, combined with cumulative construction in the project area, could result in generation of excessive groundborne vibration or groundborne noise levels. (*Less than Significant with Mitigation*)

Potential cumulative construction vibration impacts would be limited to other planned UCSF construction projects within the campus site. Architectural damage impacts to buildings in proximity to the Project site are not a concern in the cumulative scenario because the proposed Project is sufficiently distant from these cumulative projects so as to not cumulatively combine to result in architectural damage impacts.

Consequently, cumulative vibration impacts of the Project or Project variant would be similar to those analyzed above in Impact NOI-3 and would be less than significant with implementation of **Mitigation Measure NOI-3.**

Mitigation: Implement Mitigation Measure NOI-3.

Significance after Mitigation: Less than Significant.

Impact C-NOI-4: Implementation of the NHB Project, combined with cumulative development in the project area, would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use. (*Less than Significant*)

As shown in Table 4.10-19 above, the increase in peak hour traffic noise in the vicinity of the Project site under the 2040 plus Project Conditions compared to the Existing Conditions would be less than 3 dBA on all roadway segments. Overall, traffic noise increases associated with the Project or Project variant and cumulative development along all analyzed roadway segments in the vicinity of the Project site would be less than 3 dBA and the cumulative impact related to traffic noise would be less than significant.

Mitigation: None required.

4.10.4 References

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4.11 Transportation

As described in Section 4.0, *Introduction to the Environmental Analysis*, the New Hospital Building (NHB) Project is presumed to have a less than significant impact on transportation based on *CEQA Guidelines* Section 15064.3(b)(1). Although not required under CEQA, this section evaluates the impacts of the proposed Project on transportation for informational purposes.

This section describes the transportation conditions in the vicinity of the Project site, including transit services, pedestrian and bicycle facilities, motor vehicle traffic, current transportation demand management (TDM) measures, and parking; discusses the State and local regulations and policies pertinent to transportation and circulation; assesses the potential transportation and circulation impacts of the Project; and provides, where appropriate, mitigation measures to address those impacts.

4.11.1 Environmental Setting

The existing transportation-related context in which the Project would be implemented is described below, beginning with a description of the study area and street network serving the Project site. Existing transit, bicycle, and pedestrian facilities are also described. Current traffic conditions of the roadways in the Project vicinity are summarized. This section also discusses planned changes to transportation facilities/operating conditions in Oakland near the Project site.

Existing Roadway Network

Existing regional freeway access to the Project site is provided via State Route 24 (SR 24). Direct vehicular access to the site is provided via local roadways: Martin Luther King (MLK) Jr. Way, which borders the site on the west, and 52nd Street, which borders the site on the north. This analysis assumes that MLK Jr. Way is a north-south street and 52nd Street is an east-west street.

Roadways serving the Project site are described below.

- *State Route 24* (SR 24) is an eight-lane east-west freeway between Interstate 580 (I-580) in Oakland in the west and Walnut Creek in the east. East of I-580, SR 24 continues as Interstate 980 (I-980). SR 24 forms the eastern boundary of the Project site. Ramps at 51st Street and MLK Jr. Way are the nearest freeway ramps to the Project site and provide access to and from the west and ramps at Telegraph Avenue provide access to and from the east. SR 24 has an average annual daily traffic volume (AADT) of approximately 154,000 vehicles east of I - 980 (Caltrans, 2021).
- *I-980* is an eight-lane north-south freeway west of the Project site that connects SR 24 and I-580 in the north to I-880 in the south. Ramps at MLK Jr. Way provide access between the Project site and I-980. I-980 has an AADT of 110,000 vehicles near the Project site (Caltrans, 2021).
- *I-580* is an eight-lane east-west freeway between US 101, in Marin County in the west, and Interstate-5 in Tracy in the east. Ramps at MLK Jr. Way provide access between the Project site and I-580. I-580 has an AADT of approximately 162,000 vehicles per day near the SR 24/I-980 freeways (Caltrans, 2021).

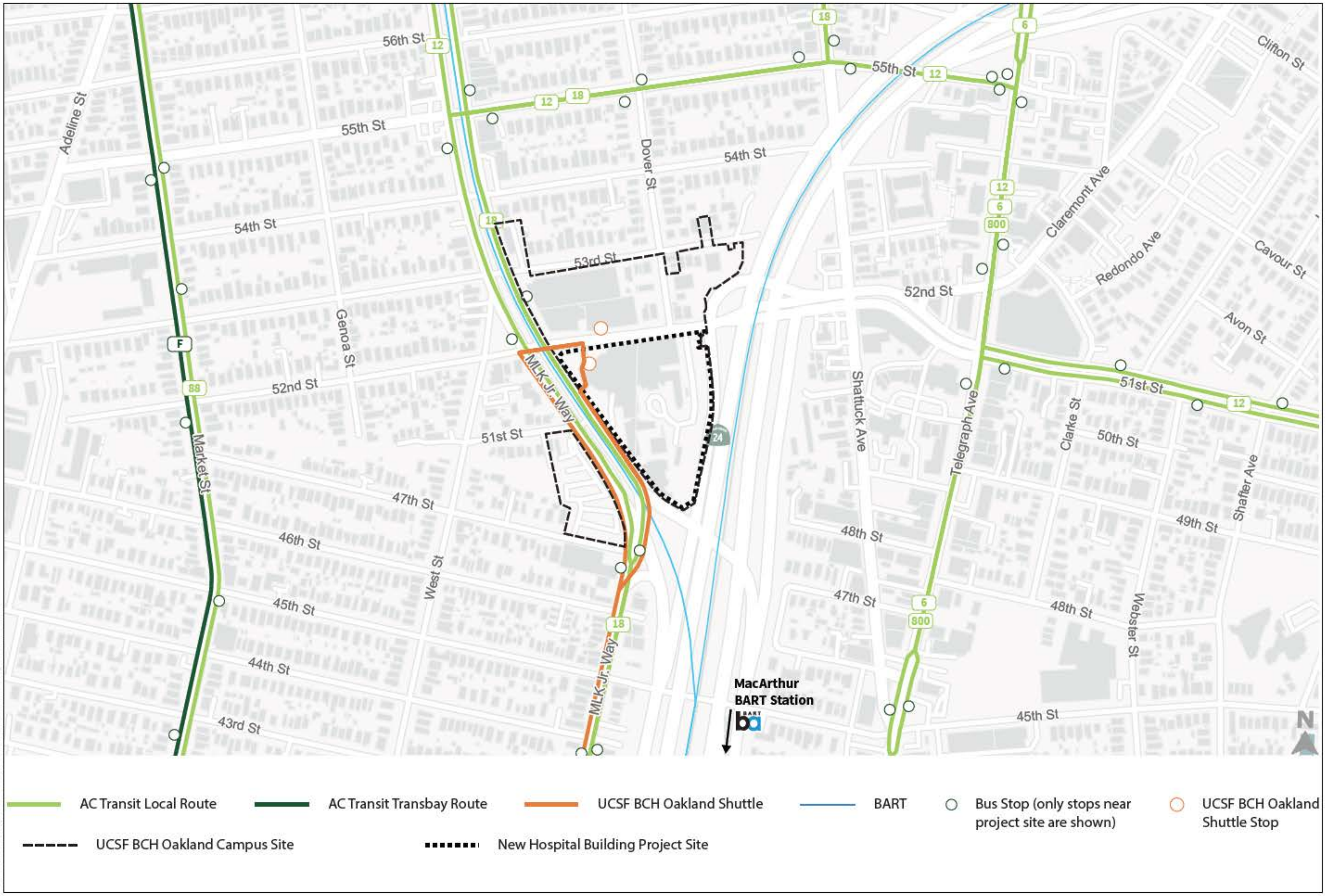
- *Interstate-80 (I-80)* is an eight to ten-lane freeway extending west to San Francisco, and east through Berkeley, Sacramento, into Nevada and further east. I-580 provides access between the Project site and I-80. I-80 has an AADT of approximately 283,000 vehicles per day just north of I-580 in Emeryville (Caltrans, 2019).
- *MLK Jr. Way* is a north-south major arterial extending between Downtown Oakland in the south and Berkeley in the north. MLK Jr. Way provides three travel lanes in each direction adjacent to the Project site.
- *52nd Street* is an east-west street extending between Market Street in the west and Telegraph Avenue in the east. East of the SR 24 freeway, 52nd Street is classified as a minor arterial and west of the SR 24 freeway, it is classified as a local street. 52nd Street generally provides one travel lane in each direction. Just west of Telegraph Avenue, 51st Street splits from 52nd Street and continues east with two travel lanes in each direction. East of Broadway, 51st Street becomes Pleasant Valley Avenue.
- *Shattuck Avenue* is a north-south minor arterial extending between Telegraph Avenue in the south and Berkeley in the north. Shattuck Avenue provides one travel lane in each direction near the Project site.
- *Telegraph Avenue* is a north-south major arterial extending between Broadway in Downtown Oakland in the south and City of Berkeley in the north. Near the Project site, Telegraph Avenue generally provides one travel lane and a directional cycle track in each direction.
- *Dover Street* is a north-south local street extending between 52nd Street in the south and Alcatraz Avenue in the north. Dover Street provides one travel lane in each direction.
- *53rd Street* is an east-west local street extending between Emeryville in the west and a cul-de-sac east of Dover Street in the east. 53rd Street provides one travel lane in each direction in the Project vicinity.

Existing Transit Services

Transit service providers in the Project vicinity include the Alameda–Contra Costa Transit (AC Transit) which provides local and Transbay bus service, the Bay Area Rapid Transit (BART) which provides regional rail service, and the UCSF BCH Oakland Shuttle, which primarily provides free shuttle service between the UCSF BCH Oakland campus site and the MacArthur BART Station. The existing transit services provided in the Project vicinity are shown on **Figure 4.11-1** and described below.

AC Transit

AC Transit is the primary bus service provider in 13 cities and adjacent unincorporated areas in Alameda and Contra Costa Counties, with transbay service to destinations in San Francisco, San Mateo, and Santa Clara Counties. AC Transit reports serving about 91,000 riders in Alameda County on a typical weekday in 2022 (AC Transit, 2023a).



SOURCE: Fehr & Peers, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 4.11-1
Existing Transit Service

Table 4.11-1 summarizes the AC Transit lines operating in the Project vicinity as of October 2023 (AC Transit, 2023b). AC Transit operates Lines 12 and 18 along MLK Jr. Way, Lines 6 and 800 along Telegraph Avenue, and Lines 88 and F along Market Street. The nearest bus stops to the Project site are on northbound MLK Jr. Way between the Parking Garage Driveway and 53rd Street and on southbound MLK Jr. Way just north of 52nd Street. Both stops provide a shelter with a bench.

TABLE 4.11-1
AC TRANSIT LINES NEAR THE UCSF BCH OAKLAND CAMPUS SITE[a]

Line	Description	Weekday		Weekend		Nearest Bus Stops
		Hours of Operation	Headways	Hours of Operation	Headways	
6	Downtown Oakland to Downtown Berkeley via Telegraph Ave.	5:00 a.m.–1:00 a.m.	12 min to 20 min	5:00 a.m.–1:00 a.m.	15 min to 20 min	Telegraph Ave. at 51st and 52nd Streets
12	West Berkeley to Jack London Sq via Gilman St., Hopkins St., MLK Jr. Way, 55th St., Piedmont Ave., Grand Ave., and Broadway,	5:45 a.m. – 12:45 a.m.	20 min to 30 min	6:00 a.m. – midnight	30 min	MLK Jr. Way at 55th St and 55th St. at Dover Street
18	University Village in Albany to Lake Merritt BART via Solano Ave., Shattuck Ave., MLK Jr. Way, Downtown Oakland, and 7th/8th Streets	5:00 a.m. – 1:00 a.m.	16 min to 30 min	6:00 a.m. – 1:00 a.m.	20 min to 30 min	MLK Jr. Way at 52nd and 53rd Streets
88	Downtown Berkeley to Lake Merritt BART via University Ave., Sacramento St., Market St. and downtown Oakland	5:00 a.m. – 11:30 p.m.	20 min to 30 min	5:00 a.m. – 11:30 p.m.	20 min to 30 min	Market Street at 52nd and 53rd Streets
F	Transbay. UC Berkeley to San Francisco Transbay Terminal via Shattuck Ave., Adeline St., Market St., 40th St., and Shellmound St.	5:00 a.m.–1:30 a.m.	30 min	5:00 a.m.–1:00 a.m.	30 min	Market Street at 52nd and 53rd Streets
800	All Nighter. Richmond BART to 24th St. BART via San Pablo Ave., University Ave., Telegraph Ave., and downtown Oakland	Midnight to 7:00 a.m.	30 min	Midnight to 7:00 a.m.	30 min	Telegraph Ave. at 51st and 52nd Streets

NOTES:
a. Service description as of October 2023.
SOURCE: AC Transit, 2023; summarized by Fehr & Peers.

Bay Area Rapid Transit

BART provides regional rail service between San Francisco, northern San Mateo County, northern Santa Clara County, and the East Bay. The nearest BART station to the Project site is MacArthur Station, approximately one-half-mile southwest of the existing UCSF BCH Oakland Hospital. The station is elevated and located in the median of SR 24. Station access is provided just south of 40th Street. The station provides designated motor vehicle and bicycle parking, and pick-up/drop off facilities for automobiles, shuttle, and buses.

The MacArthur BART Station is served by the Orange (Richmond-Berryessa/North San Jose), Red (Richmond-Millbrae), and Yellow (Antioch-San Francisco International Airport) Lines. The station is served by about 24 trains per hour during the peak periods. Based on BART monthly ridership reports, about 7,300 weekday daily passengers (entries plus exits) were served at the MacArthur Station in September 2023.

UCSF BCH Oakland Shuttles

UCSF BCH Oakland operates a free shuttle between the MacArthur BART Station and the UCSF BCH Oakland campus site for its employees, patients, and visitors. At the UCSF BCH Oakland campus site, the shuttle stops are in the Main Plaza (i.e., Main Hospital pick-up/drop off area) in the southeast corner of MLK Jr. Way/52nd Street intersection and on the northside of 52nd Street adjacent to OPC1. Currently, the shuttle operates on weekdays from 5:45 AM to 7:15 PM with approximately seven-minute headways during peak periods and 15-minute headways during non-peak periods. UCSF BCH Oakland operates an on-demand service on weekdays from 7:15 PM. to 12:15 AM on weekdays. In October 2022, the shuttles transported between 95 and 100 passengers per day on typical weekdays.

Existing and Planned Bicycle Network

The City of Oakland 2019 *Oakland Bike Plan* (Let's Bike Oakland) identifies the following bicycle facility types.

- *Class 1 Paths* are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class 1 facilities. Class 1 paths are typically 8 to 10 feet wide, excluding shoulders, and are generally paved.
- *Class 2 Bicycle Lanes* provide a dedicated area for bicyclists within the paved street width using striping and appropriate signage. These facilities are typically 5 to 6 feet wide.
- *Class 2B Buffered Bicycle Lanes* provide a dedicated area for bicyclists within the paved street, separated from the motor vehicle travel lanes by a painted buffer.
- *Class 3 Bicycle Routes* are located along streets that do not provide enough width for dedicated bicycle lanes. The street is then designated as a bicycle route using signage, informing drivers to expect bicyclists.
- *Class 3A Arterial Bicycle Routes* are located along some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate connectivity. Speed limits as low as 25 miles per hour (mph), and shared-lane bicycle stencils, wide curb lanes, and signage are used to encourage shared use. According to the 2019 Oakland Bike Plan, New Class 3A facilities will no longer be proposed.
- *Class 3B Neighborhood Bike Routes* are located along residential streets with low traffic volumes. Assignment of right-of-way to the route, traffic calming measures, and bicycle traffic signal actuation are used to prioritize through-trips for bicycles.
- *Class 4 Protected Bicycle Lanes*, also known as cycle tracks, provide space that is exclusively for bicyclists and separated from motor vehicle travel lanes, parking lanes, and sidewalks. Parked cars, curbs, bollards, or planter boxes provide physical separation between bicyclists and moving cars. Where on-street parking is allowed, it is placed between the bikeway and

the travel lanes (rather than between the bikeway and the sidewalk, as is typical for Class 2 bicycle lanes).

Figure 4.11-2 shows the existing and proposed bicycle facilities in the Project vicinity per the City of Oakland's 2019 Bike Plan. Currently, the UCSF BCH Oakland campus site is not directly served by any designated bicycle facilities.

Key existing bicycle facilities in the vicinity of the Project site include:

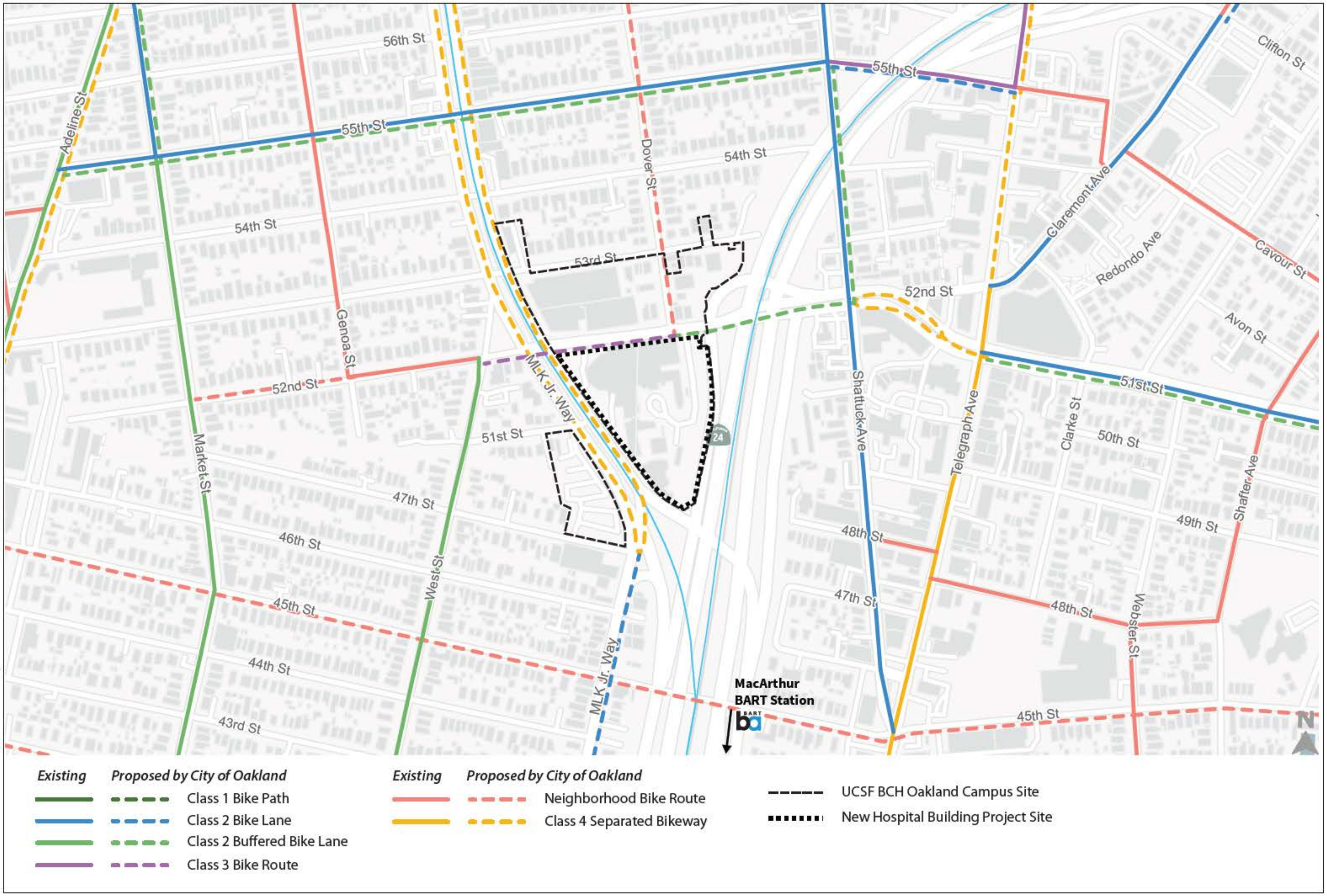
- Class 2 bicycle lanes in both directions of Shattuck Avenue, 51st Street east of Telegraph Avenue, 55th Street west of Shattuck Avenue, and Claremont Avenue
- Class 2B buffered bicycle lanes in both directions of West Street and Market Street
- Class 3B neighborhood bike routes along Genoa Street and 52nd Street between Genoa and Dover Streets
- Class 4 protected bicycle lanes in both directions of Telegraph Avenue south of 52nd Street

Currently, bicycle parking for the UCSF BCH Oakland campus site is provided in the form of a 40-space badge-restricted bicycle cage on the ground level of the Parking Garage, and bicycle racks accommodating 24 bicycles adjacent to the bicycle cage. Additional bicycle racks are provided in the Main Plaza adjacent to the Hospital entrance and within South Lot (the existing parking area in the east and south portions of the NHB Project site) adjacent to the Bruce Lyon Memorial Research Laboratory. Other amenities for cyclists include a bicycle repair station adjacent to the bicycle cage on the ground level of the Parking Garage, and shower and locker facilities in Outpatient Center 2 (OPC 2) building.

The nearest Bay Wheels bikeshare station is located on the north side of 52nd Street just east of the midblock signal and adjacent to OPC 2 and accommodates up to 23 bicycles.

The City of Oakland's 2019 Bike Plan proposes the following bicycle facilities in the vicinity of the Project:

- Class 2 bicycle lanes in both directions of 55th Street between Shattuck and Telegraph Avenues
- Class 2B buffered bicycle lanes in both directions of 55th Street west of Shattuck Avenue and along Shattuck Avenue between 52nd and 55th Streets.
- Class 3 bicycle routes along 52nd Street between Dover and Genoa Streets
- Class 3B neighborhood bike routes along Dover Street and 52nd Street between Genoa and Market Streets
- Class 4 protected bicycle lanes in both directions of MLK Jr. Way between 47th Street and Berkeley city limit and on Telegraph Avenue between 52nd Street and Berkeley city limit



SOURCE: Fehr & Peers, 2023

UCSF BCH Oakland NHB Project EIR

Figure 4.11-2
Existing and Proposed Bicycle Network

Consistent with the 2019 Bike Plan, the City of Oakland is currently designing the Class 4 protected bicycle lanes on MLK Jr. Way as part of the MLK Jr. Way Complete Streets Paving Project. The project would primarily consist of converting one lane of automobile traffic in each direction of MLK Jr. Way to a Class 4 protected bicycle lane. The bicycle and motor vehicles lanes would be separated by either a parking lane or a concrete median.

Near the UCSF BCH Oakland campus site, the Complete Streets Paving project would include the following:

- Northbound Class 4 protected bike lanes from north of 52nd Street to the Berkeley city limits
- Southbound Class 4 protected bike lanes from the Berkeley city limits to 47th Street
- A bus queue jump lane on northbound MLK Jr. Way between the SR 24 ramps
- A high-visibility crosswalk, a pedestrian hybrid beacon (PHB),[76] curb extensions on both sides of the street, and a widened median on MLK Jr. Way at 51st Street
- A protected intersection at the MLK Jr. Way/52nd Street intersection
- Relocated bus stop on southbound MLK Jr. Way from north to south of 52nd Street
- Reduction in on-street parking spaces along northbound MLK Jr. Way between the SR 24 ramps and 52nd Street from 11 to five spaces.

Construction of the MLK Jr. Way Complete Streets Paving Project is expected to start in 2025.

Existing Pedestrian Network

Pedestrian facilities generally include sidewalks, paths, and stairs. Other types of pedestrian facilities include marked crosswalks, curb ramps, pedestrian signal heads and buttons, lighting, curb extensions, and wayfinding signs. In the Project vicinity, all streets provide paved sidewalks on both sides of the street. The sidewalk on the east side of MLK Jr. Way adjacent to the Main Hospital ends just north of the SR 24 off-ramp, with a gap in the pedestrian network across the SR 24 off- and on-ramps. The existing sidewalks on MLK Jr. Way and 52nd Street along the Main Hospital frontages are generally nine to ten feet wide, with a three- to four-foot-wide utility zone which accommodates trees, signs, parking meters, and light poles.

Existing pedestrian facilities at intersections adjacent to the Project site include the following:

- The signalized 52nd Street/MLK Jr. Way intersection provides crosswalks marked by white lines on all approaches. Both crosswalks across MLK Jr. Way are long, about 120 feet long, and require pedestrians to cross seven lanes of traffic plus a wide median; however, the signal provides adequate time for pedestrians to cross the street. The intersection does not provide a pedestrian refuge across the south approach or median push-buttons in the north or south crossings. The northwest and southeast corners of the intersection provide diagonal curb ramps, and the northeast and southwest corner provide directional curb ramps.
- The signalized 52nd Street/Main Plaza intersection, about 100 feet east of MLK Jr. Way, provides a high-visibility crosswalk on the east approach of the intersection and serves as a

76 A PHB is a pedestrian-activated beacon that is a combination of a beacon flasher and a traffic control signal.

protected pedestrian crossing across 52nd Street between the Hospital south of 52nd Street and the Garage and the Outpatient Center Buildings (OPC 1 and OPC 2) north of 52nd Street. Based on data collected in May 2023, between 200 and 300 pedestrians per hour use this crossing during weekday business hours. In addition to this signalized at-grade crossing, a pedestrian bridge over 52nd Street also directly connects the Hospital and OPC 1.

- The 52nd Street/Dover Street intersection is controlled by a stop sign on the southbound Dover Street approach. The west approach of the intersection provides an uncontrolled high-visibility crosswalk, with no other marked crosswalks at the intersection.

Existing Vehicle Miles Traveled

Vehicle miles traveled, or VMT, refers to the amount and distance of automobile travel attributable to a project. In 2013, Governor Jerry Brown signed Senate Bill (SB) 743, which added Public Resources Code Section 21099 to CEQA, to change the way that transportation impacts are analyzed under CEQA to better align local environmental review with statewide objectives to reduce greenhouse gas (GHG) emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce VMT in California. The City of Oakland adopted VMT thresholds in September 2016 to implement the directive from SB 743.

Increased VMT leads to several direct and indirect impacts on the environment and human health. Among other effects, increasing VMT on the roadway network leads to increased emissions of air pollutants, including GHGs, as well as increased consumption of energy. Transportation is associated with more GHG emissions than any other sector in California. As documented in the City of Oakland *Equitable Climate Action Plan* (updated July 2020), 67 percent of Oakland's local GHG emissions are produced by transportation (City of Oakland, 2020a). Making transportation more efficient by reducing VMT per capita is the most effective means to reduce GHG emissions per capita.

The Alameda County Transportation Commission (CTC) Countywide Travel Model is the primary tool used to estimate VMT in Alameda County. The Model includes year 2020, which approximates existing conditions. The applicable VMT metric for the Project is the home-work (i.e., commute) VMT per worker, which measures all of the worker commute VMT by a motor vehicle on a typical weekday between homes and workplaces. Based on the Alameda CTC Model, the existing average home-work VMT per worker in the Bay Area region is 18.1, while the home-work VMT per worker in the Project transportation analysis zone (TAZ)[77] is 11.6, about 36 percent lower than the regional average.

Existing UCSF BCH Oakland TDM Measures

Various factors determine how people travel to/from work, including home location, work shifts, access to transit, travel incentives and disincentives (e.g., parking availability or cost), or other obligations before or after work (e.g., childcare drop-off or pick-up). A TDM program is a set of policies and programs that include incentives, information, and education to encourage

77 Transportation Analysis Zone (TAZ) is defined as geographic polygon somewhat similar to a Census block group that is used in a travel model to represent an area of relatively homogenous travel behavior.

employees to commute to work by modes other than driving alone. The entitlement process for the UCSF BCH Oakland Campus Master Plan in 2015, included a TDM program that requires the UCSF BCH Oakland campus to reduce the daytime employee mode share by 10 percent to 73 percent after the completion of the Phase 1 of the Master Plan, and by 20 percent to 65 percent after the completion of the Phase 2 of the Master Plan.

The UCSF BCH Oakland TDM program includes strategies that emphasize commuting options other than driving alone, such as public transit, shuttle service, biking, walking, and carpooling. The key measures of the UCSF BCH Oakland TDM program, implemented as of December 2022, include:

- Free shuttle service between the UCSF BCH Oakland campus site and the MacArthur BART Station on weekdays from 5:45 AM to 7:15 PM with approximately seven- to 15-minute headways.
- Pre-tax commuter incentives which allow employees to pay for transit expenses before taxes.
- Long-term and short-term bicycle parking and amenities such as a repair station and showers.
- Market-priced on-site employee parking.
- Preferred on-site carpool parking in the Parking Garage.
- Regular employee outreach and education to ensure that employees are aware of all their commuting options.
- Remote work for eligible employees.

It should be noted that UCSF BCH Oakland also pays the City of Oakland to implement a residential parking permit (RPP) program in the neighborhood residential streets where on-street parking for non-residents is typically restricted to two hours during weekday business hours to discourage employees and patients/visitors from parking in the neighborhood residential streets.

Mode Shares

The UCSF BCH Oakland TDM Program requires an annual evaluation, including regular surveys of employees and patients/visitors, to understand commute characteristics, estimate their mode shares, and determine if the TDM program goals are satisfied. **Table 4.11-2** summarizes the mode shares for employees and patients/visitors based on the latest commute surveys. Based on the survey conducted in 2022, about 73 percent of the employees drive alone to work, which meets the mode share goal for the UCSF BCH Oakland TDM program for Phase 1 of the Master Plan. About five percent of the employees carpool, six percent take BART and the UCSF BCH Oakland shuttle, eight percent use other modes, and eight percent work remotely. Based on the commute survey conducted in 2021, about 81 percent of patients/visitors drive, about four percent use other modes, and 15 percent use telehealth and do not travel to the UCSF BCH Oakland campus site.

TABLE 4.11-2
UCSF BCH OAKLAND EMPLOYEE AND PATIENT/VISITOR MODE SHARES[a]

<table>
<tr><th>Primary Access Mode</th><th>Employees [a]</th><th>Patient/ Visitors [b]</th></tr>
<tr><td>Drive Alone</td><td>73%</td><td rowspan="3">81%</td></tr>
<tr><td>Carpool</td><td>5%</td></tr>
<tr><td>Drop off/Pick-Up</td><td><1%</td></tr>
<tr><td>BART</td><td>6%</td><td>1%</td></tr>
<tr><td>AC Transit</td><td><1%</td><td><1%</td></tr>
<tr><td>Bike</td><td>2%</td><td rowspan="2"><1%</td></tr>
<tr><td>Walk</td><td>4%</td></tr>
<tr><td>Others (Taxis, Paratransit, and Ride-Sharing)</td><td>2%</td><td>2%</td></tr>
<tr><td>Remote [c]</td><td>8%</td><td>15%</td></tr>
<tr><td>Total</td><td>100%</td><td>100%</td></tr>
</table>

NOTES:
a. Based on the latest available employee commute survey conducted in October 2022. Employee commute surveys are generally conducted every year.
b. Based on the latest available patient/visitor commute survey conducted in October 2021. Patients/visitors commute surveys are generally conducted every 3 years.
c. Consists of remote work for employees and outpatient telehealth visits for patients/visitors.

SOURCE: Data collected by UCSF BCH Oakland in 2021 and 2022; summarized by Fehr & Peers.

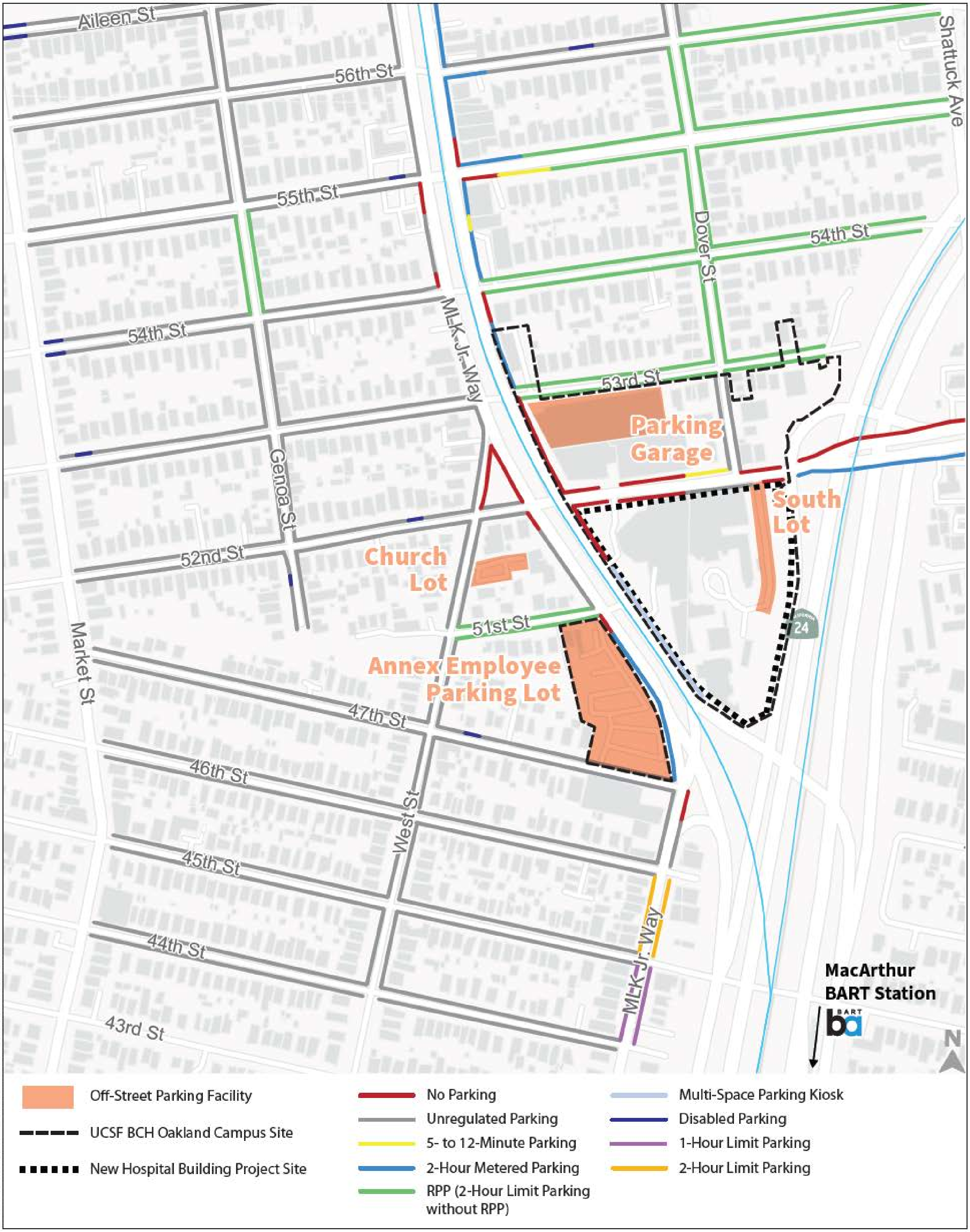
Existing Parking Conditions

Although parking is not considered in determining if a project has the potential to result in significant environmental impacts, this section discusses the existing on-street and off-street parking supply and occupancy in the Project site vicinity, for context and for informational purposes.

On-Street Parking

Most streets in the project vicinity provide on-street parking on both sides of the street. **Figure 4.11-3** shows the on-street parking within walking distance (approximately quarter of a mile) of the UCSF BCH Oakland campus site. More than 1,700 on-street parking spaces are provided in the study area, which can be classified into the following categories:

- Metered spaces are generally provided along non-residential streets such as MLK Jr. Way and 52nd Street. The metered spaces generally have a two-hour time limit. There are about 70 metered parking spaces in the Project site vicinity.
- RPPs have been implemented along residential streets that meet the City’s eligibility requirements. Parking for non-residents (i.e., vehicles without a permit) is restricted to two hours during weekday business hours. There are about 400 parking spaces in the RPP zones in the vicinity of the UCSF BCH Oakland campus site.
- Unregulated Parking is parking that is free year-round and has no time limits. Most of the remaining on-street parking in the study area is unregulated.



SOURCE: Fehr & Peers, 2023

UCSF BCH Oakland NHB Project EIR

ESA

Figure 4.11-3
Existing Parking Supply

In addition, there are also disabled parking spaces and designated passenger and commercial loading areas throughout the study area.

Off-Street Parking

UCSF BCH Oakland currently can accommodate up to about 1,029 parked vehicles in the following off-street parking facilities on and in the vicinity of the campus site:

- Parking Garage – This garage, located just north of OPC1, provides 700 parking spaces on five levels above ground and one underground level. It is accessed through one right-in/ right-out only driveway on MLK Jr. Way, and serves both employees and patients/visitors.
- Church Lot – UCSF BCH Oakland leases this surface parking lot located on the east side of West Street south of 52nd Street. This lot provides 26 parking spaces reserved for employee parking only.
- Annex Employee Parking Lot (also known as West Lot) – This surface lot is reserved for employee parking only, and is located west of MLK Jr. Way, between 47th and 51st Streets. This lot provides 175 striped spaces and can accommodate up to about 50 additional vehicles using stacked valet parking, which is used when parking demand is high. Thus, the Annex Employee Parking Lot can accommodate up to 225 parked vehicles. Access to and from this lot is provided through gates on 51st Street (entrance only), MLK Jr. Way (exit only), and 47th Street (exit only).
- South Lot – This surface lot is reserved for employees only and is located in the east and south portions of the NHB Project site, with a gated access on 52nd Street just east of Dover Street. The lot currently provides 48 parking spaces.
- Other Lots – The former residential buildings on 52nd, 53rd, and Dover Streets and the Family House on Dover Street also provide off-street parking facilities, such as garages or parking lots. Combined, these buildings provide about 30 off-street parking spaces that are primarily used by UCSF BCH Oakland staff.

The existing off-street parking demand was measured through driveway and parking occupancy counts at the major parking facilities described above. **Figure 4.11-4** shows the total parking demand at the UCSF BCH Oakland parking facilities on a typical weekday by time of day based on data collected in May 2023, and **Table 4.11-3** summarizes parking supply and peak demand at each parking facility.

The overall parking occupancy at the UCSF BCH Oakland parking facilities is generally above 85 percent between 9:30 AM and 3:30 PM. The overall peak demand for parking is about 935 spaces at around 2:45 PM which corresponds to about 91 percent occupancy. Parking demand at the Parking Garage, which provides the primary parking for both employees and patients/visitors, is typically above 90 percent between 9:00 AM and 3:00 PM.

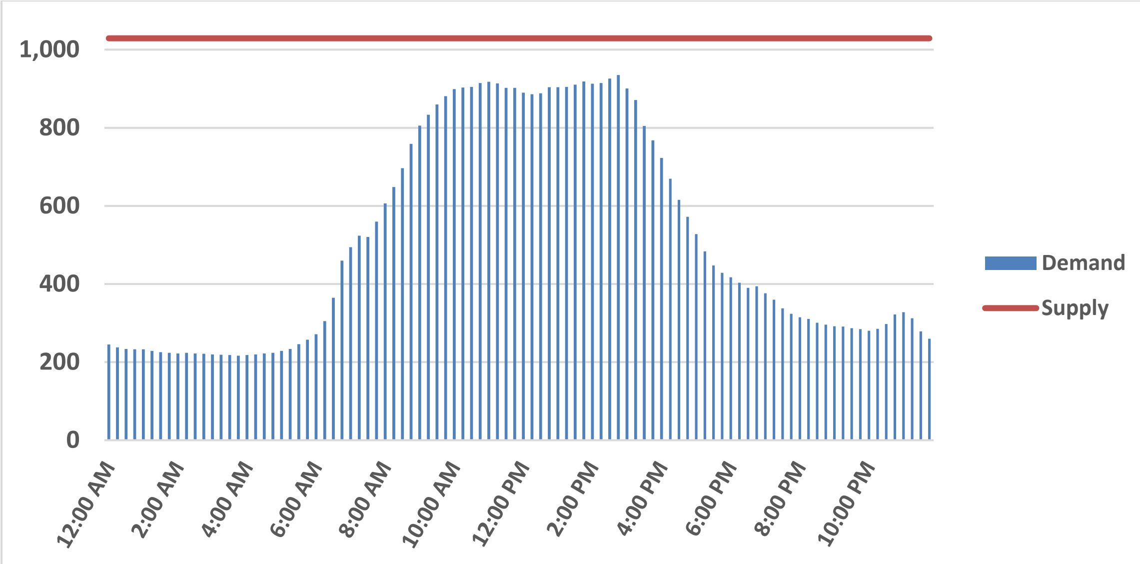


Figure 4.11-4
Typical Weekday On-Site Parking Demand by Hour of Day (May 2023)

TABLE 4.11-3
UCSF BCH OAKLAND PARKING SUPPLY AND DEMAND SUMMARY

Parking Facility	Supply [a]	Peak Demand [a, b]	Peak Occupancy
Parking Garage	700	705	101%
Church Lot	26	19	73%
Annex Employee Parking Lot [C]	225	169	75%
South Lot	48	39	81%
Other	30	30	100%
Total On-Site	**1,029**	**935**	**91%%**
Estimated On-Street	NA	325	NA
Estimated Total (On-site plus On-Street)	**NA**	**1,260**	**NA**

NOTES:
a. Based on data collected in May 2023.
b. Peak demand for each individual parking facility.
c. consists of 175 striped parking spaces and 50 valet parking spaces that are used when parking demand is high.
SOURCE: Fehr & Peers, 2023.

Although the number of UCSF BCH Oakland employees and patients/visitors using on-street parking cannot be directly measured, it can be estimated based on the results of the employee and patient/visitor commute surveys described earlier in the "Existing UCSF BCH Oakland TDM Measures" section. It is estimated that up to about 325 vehicles generated by the UCSF BCH Oakland campus site at peak times, use on-street parking. Thus, the total peak UCSF BCH Oakland parking demand, including both on-street and off-street parking, is about 1,260 spaces.

4.11.2 Regulatory Framework

University of California

The University of California Policy on Sustainable Practices

The University of California (UC) *Policy on Sustainable Practices* outlines sustainability goals and strategies for all UC campuses and medical centers and covers climate and energy, transportation, water, green building, waste, food, and operations. Aligned with State goals, UC has a requirement for all campuses, along with their associated health systems, to reduce to reduce GHG emissions from all scopes 90 percent by 2045 (from a 2019 baseline) and neutralize any remaining emissions through carbon removal. Accordingly, UC recognizes that single-occupant vehicle (SOV) commuting is a primary contributor to commute GHG emissions and localized transportation impacts, and has set the following goals related to transportation:

- By 2025, each location shall strive to reduce its percentage of employees and students commuting by SOV by 10 percent relative to its 2015 SOV commute rates.
- By 2050, each location shall strive to have no more than 40 percent of its employees and no more than 30 percent of all employees and students commuting to the location by SOV.
- By 2025, each location shall strive to have at least 4.5 percent of commuter vehicles be zero-emission vehicles (ZEV).
- By 2050, each location shall strive to have at least 30 percent of commuter vehicles be ZEV.
- Each location (campus) will develop a business-case analysis for any proposed parking structures serving University affiliates or visitors to the campus to document how a capital investment in parking aligns with each campus' Climate Action Plans and/or sustainable transportation policies.

UCSF

Each University of California system campus is required periodically to prepare a Long Range Development Plan (LRDP), which sets forth concepts, principles, and plans to guide future physical growth of the campus. Currently, development at all UCSF campus sites is guided by the *2014 UCSF Long Range Development Plan* (2014 LRDP), which includes campus-wide objectives applicable to all UCSF campus sites as well as specific policies related to future program development and space needs at each UCSF campus site. Since the 2014 LRDP does not include the BCH Oakland campus site, UCSF is proposing to amend the 2014 LRDP to include the BCH Oakland campus site. The following UCSF 2014 LRDP campus-wide objective relating to transportation are applicable to the NHB Project:

LRDP Objectives

1. **Respond to the City and Community Context**

   D. Incorporate pedestrian-friendly urban design principles to relate campus buildings to surrounding streetscape and neighborhoods.

4. **Promote Environmental Sustainability**

   C. Reduce the number of UCSF remote locations by consolidation of owned and leased sites, thereby reducing travel between sites.

D. Enhance the Transportation Demand Management program by developing adequate facilities and transportation demand reduction policies, to emphasize transportation alternatives that will lessen auto traffic in and around campus sites and to meet changing needs consistent with the City's Transit First policy.[78]

E. Continue to prioritize scarce parking for use by patients and essential healthcare providers.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible. City plans and regulations that are germane to the transportation impacts analysis are summarized below.

City of Oakland Public Transit and Alternative Modes Policy

The City of Oakland adopted the Public Transit and Alternative Modes Policy, also known as the "Transit-First Policy," in October 2006 (City Council Resolution 73036 C.M.S.). This resolution supports public transit and other alternatives to single occupant vehicles and directs the City's Land Use and Transportation Element (LUTE) to incorporate "various methods of expediting transit services on designated streets and encouraging greater transit use." The resolution also directs the City, in constructing and maintaining its transportation infrastructure, to resolve any conflicts between public transit and single occupant vehicles on City streets in favor of the transportation mode that provides the greatest mobility for people rather than vehicles giving due consideration to the environment, public safety, economic development, health, and social equity impacts.

City of Oakland Complete Streets Policy

The City of Oakland adopted the Complete Streets Policy to Further Ensure that Streets Provide Safe and Convenient Travel Options for all Users in January 2013 (City Council Resolution 84204 C.M.S.). This resolution, consistent with the California Complete Streets Act of 2008, directs the City of Oakland to plan, design, construct, operate, and maintain the street network in the City to accommodate safe, convenient, comfortable travel for all modes, including pedestrians, bicyclists, transit users, motorists, trucks, and emergency vehicles.

City of Oakland 2017 Pedestrian Master Plan

Oakland's Pedestrian Master Plan, *Oakland Walks!* was adopted June 27, 2017, and identifies policies and implementation measures that promote a walkable city. The plan's vision is built around four pillars – Safety, Equity, Responsiveness, and Vitality:

- **Holistic Community Safety –** Make Oakland's pedestrian environment safe and welcoming.

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78 As the 2014 LRDP is designed to address UCSF campus sites in San Francisco, the City's Transit First policy referenced here is the City of San Francico's policy related to transit. However, the City of Oakland also has a Transit First policy which UCSF will respond to when implementing and enhancing its TDM program for the UCSF BCH Oakland campus site.

- **Equity –** Recognizing a historical pattern of disinvestment, focus investment and resources to create equitable, accessible walking conditions to meet the needs of Oakland's diverse communities.
- **Responsiveness –** Develop and provide tools to ensure that Oakland creates and maintains a vibrant pedestrian environment.
- **Vitality –** Ensure that Oakland's pedestrian environment is welcoming, well connected, supports the local economy, and sustains healthy communities.

Within these four pillars *Oakland Walks!* strives for the following five outcomes:

- **Outcome 1** – Increase Pedestrian Safety
- **Outcome 2 –** Create Streets and Places that Promote Walking
- **Outcome 3 –** Improve Walkability to Key Destinations
- **Outcome 4 –** Engage the Oakland Community in Creating Vibrant Pedestrian Environments
- **Outcome 5 –** Improve Metrics, Evaluations, Funding, and Tools for Creating Pedestrian Environments

City of Oakland 2019 Bicycle Master Plan

The Oakland City Council adopted the Let's Bike Oakland Plan on July 9, 2019 and incorporated the plan into the adopted General Plan. The adopted plan includes four main goals regarding access, health and safety, affordability, and collaboration. Each goal outlines specific objectives and actions related to the goal. The following goals and actions are applicable to the Project:

> **Access Goal, Objective A:** Increase access to jobs, education, retail, park and libraries, schools, recreational centers, transit, and other neighborhood destinations.
>
> > ***Action A1:*** Build low-stress facilities that provide access to local destinations in every neighborhood in Oakland.
> >
> > ***Action A2:*** Increase the supply of bicycle parking at neighborhood destinations like schools, medical centers, grocery stores, and government offices.
>
> **Health & Safety Goal, Objective C:** Reduce air pollution, asthma rates and greenhouse gas emissions
>
> > ***Action C1:*** Build a bicycle network that encourages Oaklanders to choose modes of transportation other than driving by providing low-stress facilities and integrating bikes with transit.
>
> **Affordability Goal, Objective A:** Reduce the overall household costs for all Oaklanders.
>
> > ***Action A2:*** Build bikeways that provide first and last mile connections to public transit stations and major bus stops.

Affordability Goal, Objective B: Reduce long-term transportation. costs by reducing the need for vehicle ownership or for parking in new developments

Action B2: Revise the menu of Transportation Demand Management options to include bike share passes, fix-it stations and hydration stations.

Action B3: Update Oakland's Bicycle Parking Ordinance to determine whether it reflects the type and quantity of parking needed in new developments and major renovations.

Action B4: Update the Oakland Planning Code to require end-of-trip facilities such as showers and changing rooms in major non-residential developments.

City of Oakland Equitable Climate Action Plan

The City of Oakland adopted the Oakland 2030 Equitable Climate Action Plan (ECAP) in July 2020 (City Council Resolution 87397 C.M.S.), a comprehensive equity-focused plan to achieve the 2030 GHG reduction target and increase Oakland's resilience to the impacts of the climate crisis. Since cars and trucks account for two-thirds of local emissions in Oakland, the ECAP focuses on transportation and land use policies. The following actions are applicable to the Project:

Action TLU-4: Abundant, Affordable, and Accessible Public Transit. The City will work with public transit agencies to replace autos with public transit as a primary transportation mode for trips beyond walking distance, ensuring convenient, safe, and affordable public transit access within Oakland and to neighboring cities for all Oaklanders.

Action TLU-5: Create a Zero Emission Vehicle (ZEV) Action Plan. By 2021, develop a ZEV Action Plan to increase adoption of electric vehicles and e-mobility while addressing equity concerns and prioritizing investment in frontline communities. The plan must set ambitious targets for ZEV infrastructure and must be coordinated with other land use and mobility options so that ZEV ownership is not necessary for access to ZEV trips, and ZEVs increase as a percentage of all vehicles while overall vehicle miles traveled decreases. The plan must address the following sectors: medium and heavy-duty vehicle electrification, including trucks and delivery vehicles; personal vehicle charging infrastructure in multifamily buildings, including affordable buildings; curbside charging; school and transit buses; and coordination with private and public fleet operators.

Action TLU-8: Expand and Strengthen Transportation Demand Management (TDM) Requirements. Increase TDM performance requirements for new developments where feasible to support the mode shifts necessary to achieve a low carbon transportation system. Expand the TDM program to include requirements for existing employers. Fund ongoing monitoring and enforcement of TDM requirements.

4.11.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

b) Would the project conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b)?

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d) Result in inadequate emergency access?

e) Would project construction activities adversely affect travel conditions along sidewalks and roadways serving the project site?

Approach to Analysis

Consistent with the *CEQA Guidelines* and the City of Oakland's *Transportation Impact Review Guidelines* (TIRG), the transportation impact analysis in this EIR is primarily based on the evaluation of VMT per worker for the Project. The methodology and assumptions used to estimate the VMT metrics for the Project, followed by estimates of the trip generation and parking demand for the Project, are presented below.

VMT Estimation Approach

Many factors affect travel behavior, including density of development, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development that is located at a great distance from other land uses and in areas with poor access to non-single occupancy vehicle travel modes, generates more automobile travel compared to development located in urban areas, where a higher density of development, a mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, most of Oakland has lower VMT per capita and VMT per worker ratios than the nine-county San Francisco Bay Area region. Further, within the City of Oakland, some neighborhoods have lower VMT ratios than others.

Typically, VMT is estimated using travel demand models to fully capture the length of trips on the transportation network as well as the changes in VMT behavior that may occur with the introduction of the Project. This analysis uses the Alameda CTC Countywide Travel Demand Model, which is described below.

Alameda CTC Travel Model

The Alameda CTC Model represents neighborhoods in TAZs. The Alameda CTC Model includes approximately 369 TAZs within Oakland that vary in size from a few city blocks in the downtown core, to multiple blocks in outer neighborhoods, to even larger geographic areas in lower density areas in the hills.

The Alameda CTC Model uses various socio-economic variables, such as number of households and residents by household type, number of jobs by employment category at a TAZ level and transportation system characteristics such as street classification, number of lanes, major bicycle and pedestrian facilities, transit service capacity and frequency to forecast various travel characteristics, such as daily and peak-hour travel volumes and VMT.

The Alameda CTC Model uses a four-step modeling process that consists of trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and expected changes in the transportation network. The Alameda CTC Model assigns all predicted trips within, across, to, or from the nine-county San Francisco Bay Area region to the roadway network and transit system by mode (i.e., single-occupant or carpool vehicle, biking, walking, or transit) and transit carrier (i.e., bus, rail) for a given scenario. The VMT generated by each TAZ can be estimated by tracking the number of trips and the length of each trip generated by the TAZ.

The latest publicly available version of the Alameda CTC Model, released in May 2019, which incorporates land use data and transportation network improvements consistent with *Plan Bay Area 2040* (i.e., the Sustainable Communities Strategy), was used for this analysis.

The Alameda CTC Model outputs the home-work (i.e., commute) VMT per worker, which measures all of the worker commute VMT by a motor vehicle on a typical weekday between homes and workplaces. The home-work VMT per worker can be estimated by dividing the total commute VMT generated by the non-residential uses in a TAZ by the number of workers in that TAZ.

As a regional planning tool, the Alameda CTC Model was developed through an extensive model validation process. The Model is intended to replicate existing vehicular travel behavior and can provide a reasonable estimate of VMT generated in various geographic areas on a typical weekday. It also estimates future VMT that reflects planned local and regional land use and transportation system changes. Thus, the Alameda CTC Model was used to conduct the VMT assessment for this Project.

Trip Generation

Trip generation is the process of estimating the number of motor vehicles that would likely access the Project on a typical weekday. **Table 4.11-4** summarizes the daily and AM and PM peak hour vehicle trip generation for employees and patients/visitors on a typical weekday for the UCSF BCH Oakland campus site under Existing (2023) and Project Buildout (2032) conditions (2032 is the earliest year that Project Buildout could occur). **Appendix TRANS** provides the detailed trip generation calculations.

TABLE 4.11-4
UCSF BCH OAKLAND CAMPUS SITE MOTOR VEHICLE TRIP GENERATION SUMMARY

Scenario[a]	Total Population [b]	Daily	Weekday AM Peak Hour (7:30 to 8:30 AM)			Weekday PM Peak Hour (4:00 to 5:00 PM)		
			In	Out	Total	In	Out	Total
Existing (2023)	3,777	5,900	317	149	466	81	354	435
Project Buildout (2032)	4,513	6,860	369	173	542	94	412	506
Project	**736**	**960**	**52**	**24**	**76**	**13**	**58**	**71**

NOTES:
a. See Appendix TRANS for detailed calculations.
b. See Table 3-5 in Chapter 3, Project Description for details.

SOURCE: Fehr & Peers, 2023.

The Project would be operational in 2031, although the earliest Project buildout would occur would be 2032. The Existing (2023) and Project Buildout (2032) trip generation for the UCSF BCH Oakland campus site were estimated by developing trip generation rates based on the following data:

- Counts of motor vehicles entering and exiting the off-street parking facilities and the Main Plaza collected in May 2023;
- Data from the 2022 employee commute survey;
- Data from the 2021 patient/visitor commute survey; and
- Estimated existing and buildout populations as summarized in Table 3-5 in Chapter 3, *Project Description.*

Overall, the Project (i.e., the net new trips between Project Buildout (2032) and Existing (2023) conditions for the UCSF BCH Oakland campus site) is estimated to generate about 960 daily, 76 AM peak hour, and 71 PM peak hour vehicle trips on a typical weekday.

Parking Demand Estimates

Table 4.11-5 summarizes the peak parking demand generated by the UCSF BCH Oakland campus site on a typical weekday under Existing (2023) and Project Buildout (2032) conditions based on the forecasted increase in population. The parking demand estimates were developed using the same data sources and similar assumptions and methodology used to develop the trip generation estimates described above.

TABLE 4.11-5
UCSF BCH OAKLAND CAMPUS SITE PARKING DEMAND ESTIMATES

Scenario[a]	Peak Population [b]	Parking Demand			Off-Street Parking Supply	Percent Total Parking Demand Accommodated by the Off-Street Parking Supply
		On-Site	On-Street	Total Demand		
Existing (2023)	1,741	935	325	1,260	1,029 [c]	**82%**
Project Buildout (2032)	2,007	1,070	370	1,440	1,181-1,251 [d]	**82%-87%**
Net Project	+266	+135	+45	+180	152-222	

NOTES:

a. See Appendix TRANS for detailed calculations.
b. See Table 3-5 in Chapter 3, *Project Description* for details.
c. See Table 4.11-3 for the off-street parking supply by facility.
d. The Project Buildout conditions would consist of elimination of 48 parking spaces in the South Lot which would be demolished by the Project and addition of 200 to 270 parking spaces in the proposed parking garage.

SOURCE: Fehr & Peers, 2023.

Appendix TRANS provides the detailed parking demand calculations. The parking demand estimates represent the total peak parking demand generated by the UCSF BCH Oakland campus site under typical conditions and include employees and patients/visitors who use both the on-site parking facilities and on-street parking.

As shown in Table 4.11-5, the current off-street parking at the UCSF BCH Oakland campus site can accommodate about 82 percent of the typical peak parking demand generated by the campus site. Although, as described in the "Existing Parking Conditions" section earlier in this Section, the off-street parking facilities operate below capacity due to the use of on-street parking by employees and patients/visitors.

The Project would construct a new parking garage on the Project site, which would accommodate between 200 to 270 parking spaces. Considering that the Project would demolish the existing South Lot and eliminate 48 parking spaces, the Project would result in up to about 152 to 222 net new on-site parking spaces. In addition, the NHB Project would also eliminate the on-street parking along MLK Jr. Way adjacent to the NHB Project site (There are currently about 11 on-street parking spaces along this segment of MLK Jr. Way; the MLK Jr. Way Complete Streets Paving Project would eliminate six spaces and the NHB Project the remaining five).

The net increase in on-site parking supply would accommodate most or all of the increase in parking demand and may provide more spaces so that more cars which use on-street parking could choose to use the provided off-street parking. With the completion of the proposed parking garage, the off-street parking supply at the UCSF BCH Oakland campus site is estimated to accommodate between 82 to 87 percent of the typical peak parking demand generated by the UCSF BCH Oakland campus site under Project Buildout (2032) conditions.

Impact Analysis

Impact TRANS-1: Implementation of the NHB Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. (*Less than Significant*)

Consistency with UC Plans and Policies

Consistency with the UC Policy on Sustainable Practices. The Project is consistent with the transportation-related goals and policies in the UC P*olicy on Sustainable Practices*. As described earlier, the existing TDM measures implemented at the UCSF BCH Oakland campus site have resulted in a drive-alone mode share of 73 percent (see the *Existing UCSF BCH Oakland TDM Measures* section for more detail). This is a 10-percent reduction over the 2015 conditions and satisfies the UC *Policy on Sustainable Practices* goal to reduce the percentage of employees and students commuting by 2025 by SOV by 10 percent relative to its 2015 SOV commute rates.

By 2050, the UC *Policy on Sustainable Practices* strives to have no more than 40 percent of employees and no more than 30 percent of all employees and students commuting by SOV. UCSF BCH Oakland is striving to meet this goal as evidenced by meeting the 2025 goal through the TDM measures already implemented at the UCSF BCH Oakland campus site, which UCSF intends to continue and potentially expand and/or integrate with the TDM program at the other existing UCSF campuses. Although the Project would increase the overall parking supply at the UCSF BCH Oakland campus site, the total parking supply would continue to be less than the estimated peak demand (described above in more detail in the *Parking Demand Estimates* section).

Consistent with the requirements of the UC *Policy on Sustainable Practices*, UCSF will prepare a business-case analysis for the proposed parking structure.

Consistency with the 2014 LRDP. The Project is consistent with the transportation-related goals and policies in the 2014 LRDP. The Project would include elements to improve pedestrian access and circulation such as providing sidewalks along the new internal streets within the UCSF BCH Oakland campus site and improving the sidewalks along the adjacent public streets. In addition, as described above, UCSF would continue and potentially expand the existing TDM measures at the UCSF BCH Oakland campus site, which have been effective in reducing the percentage of employee drive-alone trips to/from the campus site and meeting the short-term SOV goals in the UC *Policy on Sustainable Practices* and the TDM Program included in the 2015 entitlement process for the Campus Master Plan.

The NHB Project would include a proposed parking garage, which would be located near the proposed Emergency Department (ED) entrances. Thus, consistent with the 2014 LRDP, parking in the proposed parking garage would be prioritized for the ED patients and health workers.

Based on the above, the Project would be consistent with the transportation-related goals and policies set forth in the UC *Policy on Sustainable Practices* and the 2014 LRDP*,* and the impact would be less than significant.

Mitigation: None required.

Consistency with Local Plans and Policies

Consistency with Oakland's Transit First and Alternative Modes Policy. The City's policy states a strong preference for encouraging the use of non-automobile transportation modes, including transit. The Project would encourage the use of transit by providing high-density employment and medical services in an urban environment served by multiple AC Transit bus lines, including Line 18 which operates adjacent to the Project along MLK Jr. Way and Line 6 which operates along Telegraph Avenue, about 0.3 mile east of the Project.

The Project would continue the current TDM measures at the UCSF BCH Oakland campus site, including free and frequent shuttle service to the MacArthur BART Station, which would continue to accommodate and encourage employees and patients/visitors to use BART. The Project would be implemented in a way that would continue to give people walking, biking, and using public transit priority in the public rights-of-way. The Project would not relocate any existing public transit bus stops in the Project site vicinity.

As shown in Table 4.11-4, the Project is estimated to generate fewer than 80 motor vehicle trips during the weekday peak hours. Some of these trips would use MLK Jr. Way and/or Telegraph Avenue, which are the primary bus corridors in the Project vicinity. However, these trips would be dispersed throughout the street network and are estimated to increase the peak hour traffic volumes on these streets by less than two percent, which is less than the typical fluctuation in day-to-day traffic. The congestion caused by the additional traffic generated by the Project is expected to have a less than noticeable effect on bus travel times and transit delays.

Therefore, the Project would not conflict with the City of Oakland's Transit First and Alternative Modes Policy and the Project would not have any significant impact on transit.

Consistency with Oakland's Complete Streets Policy, Pedestrian Master Plan, Bicycle Master Plan, and Equitable Climate Action Plan. These City policies state a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The Project would encourage the use of non-automobile transportation modes by providing high-density employment and medical services in a walkable environment with several destinations within walking distance of the site. The proposed Project is also near existing and planned bicycle facilities, would expand bicycle parking and amenities, is well served by local transit service, and connects to regional transit service through a free frequent shuttle service.

The proposed Project would continue and potentially expand the current TDM measures at the UCSF BCH Oakland campus site, which would continue to encourage the use of non-single occupant automobile travel modes and reduce the motor vehicle trips generated by the UCSF BCH Oakland campus site. Although the Project would increase the parking supply at the UCSF BCH Oakland campus site, the overall parking supply would continue to remain below the estimated peak parking demand generated by the Project, which would continue to discourage the use of single-occupant motor vehicles. Thus, the proposed Project is consistent with the City's *Equitable Climate Action Plan*'s goal for TDM.

The City's 2016 *Pedestrian Master Plan* does not identify any specific improvements adjacent to the Project site. The City's 2019 *Bicycle Master Plan* identifies 52nd Street as a future bikeway. Although no specific modifications are currently identified or designed for 52nd Street, the Project would not make major modifications to the public right-of-way and would not adversely affect installation of future facilities.

As described earlier in the *Existing and Planned Bicycle Network* section, the City of Oakland is currently designing the MLK Jr. Way Complete Streets Paving Project. Adjacent to the Project, the City's project would enhance the existing pedestrian crossing across MLK Jr. Way at 51st Street by installing a pedestrian hybrid beacon (PHB), curb extensions, and a widened median. The planned improvements would be adjacent to the reconfigured loading dock driveway for the Project. The loading dock driveway would be designed to accommodate the planned pedestrian improvements and would not conflict with the City's planned improvements at this location.

In addition to continuing to maintain the existing bicycle parking and amenities at the UCSF BCH Oakland campus site, the Project would also provide new short-term and long-term bicycle parking facilities, consistent with the City's *Bicycle Master Plan*.

Since the Project would not conflict with the City of Oakland's Complete Streets Policy, Pedestrian Master Plan, Bicycle Master Plan, or Equitable Climate Action Plan, the impact would be less than significant.

Mitigation: None required.

Impact TRANS-2: Implementation of the NHB Project would not conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b). (*Less than Significant*)

CEQA Guidelines Section 15064.3, subdivision (b) refers to the discontinuation of vehicle level of service (LOS) as an impact metric for transportation impact analysis and states that VMT is the most appropriate measure or metric that should be used to evaluate the transportation impacts of a proposed project in CEQA documents. A project would have a significant impact related to VMT if it would cause a substantial increase in VMT. To determine whether a project would cause a substantial increase in VMT, OPR's *Technical Advisory* recommends that the project's transportation efficiency (project VMT per resident for residential uses or VMT per worker for employment-based uses) be compared with the transportation efficiency of existing development in the project region (existing regional VMT per resident or worker) to determine whether the project would be more or less efficient than the overall existing development in the region. Since the NHB Project is an employment-based use, VMT per worker is used. If the project is sufficiently more efficient, it would result in a less than significant transportation impact. In order to be considered sufficiently more efficient and result in a less than significant impact, the project's VMT per worker must be at least 15 percent below the existing regional average VMT per worker. Conversely, a project would cause a substantial increase in VMT if it would exceed the regional VMT per worker minus 15 percent.

According to the OPR Technical Advisory, the applicable threshold for the Project, which is also consistent with the City of Oakland's guidelines, is:

- For office uses, a project would cause substantial increase in VMT if it exceeds the existing regional VMT per worker minus 15 percent.

Consistent with OPR Technical Advisory, screening criteria can be used to identify projects that can be expected to cause a less than significant impact without conducting a detailed evaluation. The OPR screening criteria applicable to the Project, which are also consistent with the City of Oakland's guidelines, are:

- ***Low-VMT Areas*** **–** The Project meets map-based screening criteria by being in an area that exhibits below-threshold VMT, or 15 percent or more below the regional average.
- ***Near Transit Stations*** **–** The Project is in a Transit Priority Area[79] or within a one-half mile of a Major Transit Corridor or Stop[80] and satisfies the following:
    - Has a floor area ratio (FAR) of more than 0.75.
    - Does not include more parking for use by residents, customers, or employees of the Project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site).
    - Is consistent with the applicable Sustainable Communities Strategy.

The application of the screening criteria to the NHB Project is discussed below:

- ***Low-VMT Areas***: **Table 4.11-6** shows the 2020 and 2040 home-work VMT per worker for TAZ 1439, the TAZ in which the Project is located, as well as the applicable VMT thresholds of 15 percent below the regional average. The 2020 and 2040 home-work VMT per worker in the Project TAZ are less than the regional averages minus 15 percent. Thus, the Project would meet this screening criterion.

TABLE 4.11-6
NHB PROJECT VMT SCREENING SUMMARY

Geographic Area	Home-Work VMT per Worker (2020)	Home-Work VMT per Worker (2040)
Project TAZ (Alameda CTC Model TAZ 1439)	13.1	14.0
Regional Average	18.1	18.2
Regional Average minus 15% (i.e., screening criterion)	15.4	15.5
Meet Screening Criterion?	Yes	Yes

NOTES:
a. Based on the results of the Alameda CTC Travel Demand Model as run by Fehr & Peers.
SOURCE: Fehr & Peers, 2023

[79] According to the California Public Resource Code (PRC), a Transit Priority Area is defined as a one-half mile area around an existing major transit stop or an existing stop along a high-quality transit corridor. PRC § 21064.3 defines major transit stop as a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of 15 minutes or less during the morning and afternoon peak commute periods. PRC, § 21155 defines a high-quality transit corridor as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

[80] See footnote 79 for definition of "Major transit stop" per PRC, § 21064.3.

- ***Near Transit Stations*** **–** AC Transit Line 6 operates along Telegraph Avenue with 12-minute intervals during peak commute periods. Since service intervals during peak commute periods are less than 15 minutes, Telegraph Avenue is considered a high-quality transit corridor. The nearest bus stops to the Project site along the corridor are on northbound Telegraph Avenue north of Claremont Avenue and on southbound Telegraph Avenue south of 52nd Street. Both bus stops are less than 0.5 miles from the Project site. As the Project is located less than 0.5 miles from a high-frequency transit corridor, it is in a Transit Priority Area. The Project would meet this criterion because it would meet the following three conditions:
  - After the completion of the Project, the Project site (area bounded by 52nd Street to the north, MLK Jr. Way to the west and SR 24 to the east) would have a FAR of 2.44, which is above 0.75. (Satisfied)
  - As shown in Table 4.11-3, after the completion of the proposed parking garage which would provide 200 to 270 parking spaces, the off-street parking supply at the UCSF BCH Oakland campus site is estimated to accommodate between 82 to 87 percent of the peak parking demand generated by the campus site under Project Buildout (2032) conditions. Thus, the UCSF BCH Oakland campus site would continue to provide fewer parking spaces than the estimated parking demand generated by the Project. (Satisfied)
  - The Project is located within the MacArthur Transit Village Priority Development Area (PDA) as defined by *Plan Bay Area* and is therefore consistent with the region's Sustainable Communities Strategy. (Satisfied)

Since the proposed Project would meet two of the screening criteria (Low VMT Areas and Near Transit Stations), it is presumed to not cause substantial increase in VMT, and therefore, would have a less than significant impact on VMT.

Mitigation: None required.

Impact TRANS-3: Implementation of the NHB Project would not 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*)

Primary access for the Project site would be provided through a north-south internal street on the east side of the site between the Project site and the freeway. The new internal street would extend between the existing South Lot driveway on 52nd Street about 50 feet east of Dover Street and the proposed parking garage at the south end of the site. In addition to serving the proposed parking garage, the internal street would also provide access to the ED drop-off area, on the west side of the internal street with a one-way counterclockwise access to and from the internal street. The internal street would also serve the proposed site support building located on the east side of the internal street, which would primarily serve as temporary truck loading for the Hospital during the construction of the proposed permanent loading docks in the new hospital building. Thus, the north-south internal street would be used by passenger vehicles traveling to the ED and/or the parking garage, as well as delivery trucks accessing the site support building, and ambulances accessing the ED.

A new east-west internal street, along the south frontage of the NHB Project, would extend between a new right-in/right-out only driveway on MLK Jr. Way and the north-south internal street. This internal street would provide access to the ambulance bays at the south side of the new hospital building and access would be limited to ambulances and emergency vehicles only.

The proposed parking garage would be located at the south end of the Project site and accessed through an entrance at the south end of the internal north-south street. The parking garage, which would provide between 200 to 270 parking spaces, would be served by one drive aisle with parking spaces on both sides of the aisle. Elevators and stairs would be located on the north side of the garage and connect to the new hospital building through marked crosswalks across the ambulance only area.

The Project would relocate the ambulance and public access points for the ED from the existing Plaza at the northwest corner of the existing Hospital to the south and east sides of the new hospital building, respectively. The existing Plaza would continue to serve as the main entrance for non-emergency uses at the Hospital. It would continue to be served by the existing driveways on MLK Jr. Way and 52nd Street. Fewer vehicles are expected to access the Plaza and these driveways since the Project would relocate the ED.

Accessible pedestrian pathways would be provided along the south and east sides of the new hospital building, providing pedestrian access between the new hospital building and the existing sidewalks along MLK Jr. Way, 52nd Street, and the proposed parking garage.

The internal streets within the Project site are designed and would be constructed consistent with the appropriate design standards to serve the various vehicles expected to use each facility.

The two Project site driveways connecting to the adjacent public streets are described in detail below.

Driveway on 52nd Street

Currently, a driveway on 52nd Street just east of Dover Street serves the 48-space South Lot and provides vehicular access to the east side of the existing Hospital. The Project would use this existing driveway as the main vehicular access for the new ED drop-off area on the east side of the Project site and the proposed parking garage at the south end of the Project site. The driveway is currently used by less than 20 vehicles per hour during the peak hours. After completion of the Project, up to about 80 vehicles per hour are estimated to use this driveway.

The Dover Street approach and the Dover Street extension approach (i.e., access to the new hospital building) at this intersection on 52nd Street are offset by about 50 feet and both approaches are controlled by stop signs, while the 52nd Street approaches are not controlled. All movements are currently allowed at this intersection. Both the Dover Street and Dover Street extension approaches at the intersection provide adequate sight distance of pedestrians on the adjacent sidewalks and vehicles in both directions of 52nd Street. The Project would increase traffic on the Dover Street extension approach of the intersection primarily due to the new ED drop-off area and the proposed parking garage.

Although the Project would increase vehicular traffic and pedestrian activity at this intersection, it would not modify the geometric design features of the intersection and the Hospital approach would continue to provide adequate sight distance between vehicles entering and exiting the driveway and the pedestrians on the sidewalks and vehicles in both directions of 52nd Street. Therefore, the impact is considered less than significant.

Driveway on MLK Jr. Way

The Project would include a new driveway on MLK Jr. Way north of the SR 24 Eastbound Off-Ramp. The proposed driveway would only be used by ambulances, and movements at the driveway would be limited to right-turns in and out of the driveway only. A sight distance assessment was conducted to assess the visibility of vehicles turning into and out of the driveway. This analysis evaluated the stopping sight distance between the proposed driveway on MLK Jr. Way and the SR 24 Eastbound Off-Ramp. Stopping sight distance is defined as the distance required by a driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the road becomes visible and in advance of reaching the object.

Based on a speed survey conducted in December 2022, the measured 85th percentile speed[81] on the SR 24 Eastbound Off-Ramp approach at MLK Jr. Way is 35 mph, which exceeds the posted speed limit of 30 mph on the Off-Ramp. According to the Caltrans *Highway Design Manual, Seventh Edition* (Table 201.1), the minimum required stopping sight distance for vehicles approaching the proposed driveway on the Off-Ramp traveling at the measured 85th percentile speed (i.e., 35 mph) is 250 feet. The Project would eliminate the existing on-street parking on MLK Jr. Way between the proposed driveway and the SR 24 Off-Ramp and no trees or tall landscaping would be provided along this segment of the street to ensure that a line-of-sight clear of all obstructions would be provided. The site plan for the Project shows that the stopping sight distance between a vehicle turning right in or out of the proposed driveway on MLK Jr. Way and a vehicle on the SR 24 Off-Ramp is about 260 feet. The sight distance is therefore adequate to afford the stopping sight distance required by the *Highway Design Manual* for vehicles turning right into or out of the proposed driveway on MLK Jr. Way based on the measured 85th percentile speed.

The Project would be designed based on appropriate design standards and would not substantially increase hazards due to geometric design features. In addition, the Project would continue to provide the same uses at the site and would not propose any incompatible uses. Therefore, the impact would be less than significant.

Mitigation: None required.

Impact TRANS-4: Implementation of the NHB Project would not result in inadequate emergency access. (*Less than Significant*)

Potential impacts on emergency access are assessed to determine whether the changes proposed by the Project would impair, hinder, or preclude adequate emergency vehicle access.

81 85th percentile speed is the speed at or below which 85 percent of all vehicles are measured to travel under free-flowing conditions.

Under existing conditions, emergency vehicles traveling to the Project site approach the site from MLK Jr. Way and/or 52nd Street. With the completion of the Project, emergency vehicles, consisting of both vehicles traveling to the ED and emergency vehicles responding to emergencies at the site, would continue to access the campus site from MLK Jr. Way and/or 52nd Street.

With the implementation of the Project, emergency vehicles would access the Project site through two driveways: The Dover Street extension on 52nd Street just east of Dover Street and a new driveway on MLK Jr. Way north of the SR 24 Eastbound Off-Ramp. Thus, if one driveway is blocked and cannot be used, emergency vehicles would be able to use the other driveway to access the Project site. In addition, the new internal streets within the Project site would accommodate the fire trucks that may need to access the Project site.

The existing driveway on 52nd Street would be extended south along the east side of the Project site and be used by patient/visitors accessing the ED drop-off area on the east side of the new hospital building, and employees and patient/visitors accessing the proposed parking garage that would be located at the south end of the Dover Street extension, as well as emergency vehicles accessing the ambulance drop-off area on the south side of the new hospital building. Considering that a typical passenger vehicle is between 6 and 7 feet wide, the 26-foot minimum width provided on this internal street would provide adequate width for passenger vehicles in both directions to pull to the side as required by the California Vehicle Code (CVC) and allow emergency vehicles through. In addition, if access for the proposed parking garage is controlled by gates, the gates would be located inside the garage to minimize potential vehicle queues from spilling back from the garage gates and onto the internal street and hindering emergency vehicles either accessing the ambulance bays or emergency vehicles responding to emergencies at the Project site.

On all streets serving the Project site, non-emergency vehicles would continue to yield the right-of-way to emergency vehicles, as required by the CVC. The Project would not modify these streets.

The Project would not make any changes to the adjacent public streets or include elements that would conflict with adopted codes regarding street widths and turning movements. Furthermore, the Project would not include any design features that would hinder or preclude emergency vehicle access. Therefore, implementation of the Project would not result in inadequate emergency access, and the impact would be less than significant.

Mitigation: None required.

Impact TRANS-5: Construction of the NHB Project could temporarily impact travel conditions along sidewalks and roadways serving the campus site. (*Potentially Significant; Less than Significant with Mitigation*)

The discussion of construction impacts is based on currently available information, as summarized in Chapter 3, *Project Description*; local and State regulations regarding use of the public right-of-way; and experience with typical construction practices in Oakland. As discussed in Chapter 3, the majority of NHB Project construction is expected to start in Summer 2024 and end in early 2031; the existing Hospital facilities on the Project site that would be retained under the Project would continue to operate during the construction period.

Most of the construction activity would occur within the Project site boundary; however, some Project elements may require construction of improvements directly adjacent to or nearby the Project site. This may include sidewalk and frontage improvements along MLK Jr. Way and 52nd Street, a new driveway curb cut on MLK Jr. Way, reconfiguration of the loading dock driveways on MLK Jr. Way, improvements at the Dover Street extension on 52nd Street just east of Dover Street, and off-site utility extensions and connections on 52nd Street and/or MLK Jr. Way. Most construction materials and construction staging is expected to be accommodated within or adjacent to, or near the Project site.

The potential sources for transportation impacts related to construction activity may be the temporary or permanent closure of facilities (e.g., parking lane or lot) to provide construction staging, temporary closures of travel lanes and/or sidewalks on 52nd Street and/or MLK Jr. Way, truck trips associated with the delivery of construction materials, the off-haul of demolition debris, excavated soil and construction wastes, and vehicle trips to and from the Project site by construction workers. These trips would have the potential to cause temporary disruptions to nearby streets, transit services, and pedestrian and bicycle facilities. No temporary bus stop relocations are expected at this time because construction activity would be limited to the Project site and the adjacent streets, and no bus stops are located along the Project frontages on 52nd Street or MLK Jr. Way.

Prior to start of construction, UCSF and the construction contractor(s) will meet with City of Oakland's Department of Transportation staff to develop and review truck routing plans, potential temporary lane or sidewalk closures or detours. The construction contractor will be required to obtain the necessary obstruction permits and traffic control plans and comply with the City's *Construction Activity in the Public Right-of-way Standard Condition of Approval* [82] for any work in the public right-of-way.

Although construction activities would be temporary, Project construction-phase transportation impacts would be considered potentially significant given the magnitude and duration of the construction and the need for on-going coordination and monitoring. **Mitigation Measure TRANS-5** would reduce this impact to a less than significant level.

Mitigation Measure TRANS-5: Construction Coordination and Monitoring Measures

In order to reduce potential conflicts between construction activities and pedestrians, bikes, buses, and autos during construction activities at the NHB Project site, UCSF shall require construction contractor(s) to coordinate with the relevant City of Oakland agencies to prepare Construction Transportation Management Plan to address the

82 Standard Condition of Approval #80 in the City of Oakland's *Standard Conditions of Approval* (https://cao-94612.s3.us-west-2.amazonaws.com/documents/Current-Standard-Conditions-of-Approval-September-2023.pdf)

following during the major phases of project construction (e.g., demolition, construction of new building, or renovation of existing buildings):

- Construction Traffic Control Plan to identify construction truck routes, coordinate feasible measures to reduce traffic congestion, reduce potential traffic, bicycle, and transit disruption and pedestrian circulation effects, potential detours for motor vehicles, bicycles, and pedestrians if necessary, and location of off-site construction staging areas for materials and equipment if necessary.

- Construction Worker Parking and Travel Management Plan to minimize parking demand and motor vehicle trips generated by construction workers and ensure that construction workers do not use the on-street parking in the nearby residential neighborhood. If parking demand for construction workers cannot be accommodated on-site, the Plan shall identify off-site parking facilities and if necessary, provide a shuttle service between the parking facility and the construction site.

- Notification procedures for nearby residences and businesses and public safety personnel regarding construction activities, peak construction vehicle activities (e.g., concrete pours, excavation), and travel lane closures, via a newsletter, website, and/or regular construction update meetings with neighbors.

- Coordination with the City of Oakland Department of Transportation to ensure that the final design and construction of the NHB Project and the City's MLK Jr. Way Complete Streets Paving Project, which are expected to overlap, do not conflict with each other, and minimize the potential combined effects of the two construction projects on circulation for various travel modes.

- If necessary, make repair to damages to the public right-of way, including streets and sidewalks, caused by project construction within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to the completion of construction.

Significance after Mitigation: Less than Significant.

Cumulative Impacts

Impact C-TRANS-1: Implementation of the NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to significant transportation impacts. (*Less than Significant*)

Cumulative transportation impacts consider those that would result from the implementation of the Project and with other future land use and transportation changes anticipated to occur within the UCSF BCH Oakland campus site or the areas around the campus site by 2040.

The Project's contribution to cumulative impacts would be considered considerable if it worsens or results in a significant cumulative impact. Cumulative transportation impacts in the project area may result from other land use development projects and/or transportation network changes that are reasonably expected to occur in the vicinity of the Project.

There are no major specific identified land use development projects in the vicinity of the Project site, which would result in traffic growth and/or changing travel patterns on transportation facilities within the vicinity of the project. As described in the "Existing and Planned Bicycle Network" section, the City of Oakland is currently designing the MLK Jr. Way Complete Streets Paving Project, which would generally eliminate one motor vehicle lane in each direction of MLK Jr. Way to accommodate a cycle track and other improvements. Construction of this project is expected to start in 2025 and be completed prior to the completion of the Project. As discussed under Impacts TRANS-1 and TRANS-3, the proposed Project and the planned improvements on MLK Jr. Way would not conflict with each other.

Therefore, the impacts presented in Impacts TRANS-1 through TRANS-4 above also represent the cumulative impacts of the proposed project. The analysis in those impacts provides the following findings:

- The Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- The Project would not result in a conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b). Regarding cumulative VMT impacts, OPR's *Technical Advisory* notes that "[a] project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less than significant project impact would imply a less than significant cumulative impact, and vice versa." As this Draft EIR uses an efficiency-based metric to analyze the effect of the NHB Project, a separate analysis of cumulative VMT impact is not required. Nonetheless, Impact TRANS-2 includes an estimate of home-work VMT per worker for the Project under 2040 conditions. As shown in Table 4.11-6, the home-work VMT per worker under 2040 conditions is below the impact threshold.
- The Project, in combination with past, present, and reasonably foreseeable future projects, would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- The Project, in combination with past, present, and reasonably foreseeable future projects would not result in inadequate emergency access.
- With respect to cumulative impacts from concurrent or overlapping construction projects, the construction of the NHB Project is expected to overlap with the City of Oakland's MLK Jr. Way Complete Streets Paving Project. Mitigation Measure TRANS-5 consists of preparation of a Construction Transportation Management Plan, which includes a provision to coordinate the construction of the two projects to ensure that they are consistent with each other, minimize the combined effects on circulation for various travel modes, and ensure that construction impacts do not cumulate to result in a significant impact. The Project's contribution to the cumulative impact would be rendered not considerable with the implementation of Mitigation Measure TRANS-5. The cumulative impact would be less than significant.

Mitigation: None required.

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4.12 Utilities and Service Systems

This section assesses the potential for the proposed NHB Project to result in significant impacts on utilities and service systems. The section includes a description of the existing environmental setting as it relates to utilities and service systems, and provides a regulatory framework that discusses applicable federal, State, and local regulations. The section presents the significance criteria used to evaluate impacts on utilities and service systems, and the results of the impact assessment, including any significant impacts and associated mitigation measures. Project impacts on all utilities are addressed in this section except those on the stormwater collection and drainage system, which are addressed in Section 4.8, *Hydrology and Water Quality*.

The section relies in part on the results of a Water Supply Evaluation (WSE) prepared for the NHB Project (see **Appendix WSE**). Additional information to inform the analysis was obtained from the East Bay Municipal Utility District's (EBMUD) *Urban Water Management Plan 2020* (UWMP) (EBMUD, 2021a) and California Department of Resources Recycling and Recovery (CalRecycle).

4.12.1 Environmental Setting

Water

The Project site is served by existing water supplies, treatment facilities, and distribution systems, which are operated and managed by EBMUD as described below.

Water Supply

EBMUD provides potable water to approximately 1.4 million people throughout portions of Alameda and Contra Costa Counties, including the City of Oakland. EBMUD obtains approximately 90 percent of its water from the Mokelumne River watershed and transports it through pipe aqueducts to temporary storage reservoirs in the East Bay hills. EBMUD has water rights and facilities to divert up to a daily maximum of 325 million gallons per day (mgd) from the Mokelumne River. However, this allocation may be constrained by several factors – including upstream water use by prior water right holders, downstream water use, and other downstream obligations, including protection of public trust resources, drought, or less-than-normal rainfall for more than a year, and emergency outage. The remaining 10 percent of EBMUD's water supply originates as runoff from the protected watershed lands in the East Bay area, and is stored in five terminal reservoirs within EBMUD's service area. The availability of water from local runoff depends on hydrologic conditions and terminal reservoir storage availability (EBMUD, 2021a).

EBMUD's water supply system consists of a network of reservoirs, aqueducts (pipelines), water treatment plants, pumping plants, and other distribution facilities and pipelines that convey Mokelumne River water to EBMUD customers. EBMUD's Mokelumne River supply is stored in the 2,260 acre-feet surface area, 209,950 acre-feet per year (AFY) permitted capacity Pardee Reservoir, located 38 miles northeast of the City of Stockton. From the Pardee Reservoir, water from the Mokelumne River travels 10 miles downstream to the 7,470-acre surface area, 431,500 AFY permitted capacity Camanche Reservoir. Water is then transported to the Pardee Tunnel for further transportation across the Sacramento-San Joaquin Delta (Delta) to the Mokelumne Aqueduct System, the Lafayette Aqueduct System, and then to EBMUD's water treatment plants or one of EBMUD's five terminal reservoirs for later treatment (EBMUD, 2021a).

While the number of accounts in EBMUD's service area has increased steadily since 1970, the average daily water demand has not increased correspondingly; outside of droughts, demand has remained relatively stable. In 2020, the annual average daily water demand was approximately 181 mgd. This number represents potable water demand, when adjusted for reductions provided by water conservation and recycled water programs. The total adjusted potable water demand is projected to increase to 209 mgd by 2045 (EBMUD, 2021a).

Despite EBMUD's aggressive conservation and water recycling programs, Mokelumne River and the local watershed supply are not enough to meet the projected 2045 customer demands during multi-year droughts without substantial water use reductions. To meet projected water needs and address deficient supply during severe droughts, EBMUD is working to identify supplemental water supplies and additional recycled water programs. New water supplies will come from water transfers, groundwater storage, and regional supply projects (EBMUD, 2021a).

Additionally, recycled water treatment facilities have been constructed at EBMUD's wastewater treatment plant, located at the foot of the San Francisco-Oakland Bay Bridge. EBMUD stores the recycled water in a 1.5-million-gallon storage tank at the wastewater treatment plant and uses another 2.4 mgd at the plant for various industrial processes as well as landscape irrigation. EBMUD's *Updated Recycled Water Master Plan* identifies additional implementation programs, including planned expansions of the San Ramon Valley recycled water project, the East Bayshore recycled water project, and a satellite recycled water project at the Diablo Country Club. These are expected to increase production use by approximately one mgd in 2025 (EBMUD, 2019).

In addition, EBMUD holds a water service contract with the U.S. Bureau of Reclamation (USBR) to receive water from the Central Valley Project (CVP) through the Freeport Regional Water Project in years when EBMUD's water supplies are relatively low. On February 28, 2020, EBMUD signed a contract with the USBR which "converted" its 2006 water service contract to a permanent repayment contract pursuant to the 2016 Water Infrastructure Improvements for the Nation Act (EBMUD, 2021b). Qualifying years for obtaining CVP water are those in which EBMUD's total stored water supply is forecast as of March 1, updated monthly through May 1, to be below 500 thousand acre-feet (TAF) on September 30 of that year. The contract enables EBMUD to receive up to 133 TAF of CVP water in a single qualifying year, not to exceed a total of 165 TAF over three consecutive qualifying years (EBMUD, 2021b). Because EBMUD relies on CVP deliveries during dry and critically dry periods, the CVP supply constitutes a critical component of EBMUD's water supply reliability.

Water Treatment Facilities

There are six water treatment plants in the EBMUD water supply and distribution system which have a treatment capacity of over 375 mgd. The Orinda Water Treatment Plant, which serves Oakland, including the Project site, has the largest output with a maximum capacity of 200 mgd.

All water delivered to customers is filtered through sand and anthracite. Each water treatment plant also provides disinfection, fluoridation, and corrosion control (EBMUD, 2022).

Water Distribution

After water is treated at one of the water treatment plants, it is distributed throughout EBMUD's service area, which is divided into 125 pressure zones ranging in elevation from sea level to 1,450 feet. Approximately 50 percent of treated water is distributed to customers purely by gravity. The EBMUD water distribution network includes 4,200 miles of pipelines, 131 pumping plants, and 167 water distribution reservoirs (EBMUD, 2021a).

The Project site is served by 6-inch water lines along Martin Luther King (MLK) Jr. Way, 52nd Street, and Dover Street.

Wastewater

The City provides citywide sanitary sewer collection services throughout Oakland, while EBMUD provides sewage transport, treatment, and discharge services. These services and existing infrastructure are described below.

Wastewater Collection

The City's sewer collection system is separated into 22 large basins and 228 sub-basins. Sewer discharge from buildings within Oakland flows through lateral lines to the City's sewer network, which is mostly gravity fed. Currently, the City operates and maintains approximately 930 miles of sewer lines, 29,000 structures, and seven pump/lift stations. The sewer network is connected directly to trunk lines that convey sewage flows to EBMUD wastewater interceptors and finally to the EBMUD Main Wastewater Treatment Plant (MWWTP) located in West Oakland. EBMUD wastewater interceptors consist of 29 miles of reinforced concrete pipes ranging from one to 9 feet in diameter.

Existing sewer lines in the vicinity of the Project site consist of 8-inch sanitary sewer lines along MLK Jr. Way and Dover Street.

Wastewater Treatment Facilities

EBMUD provides domestic, commercial, and industrial wastewater treatment services to approximately 685,000 people in a service district known as Special District No. 1, an 83-square-mile area of Alameda and Contra Costa Counties. EBMUD owns and operates a network of 15 wastewater pumping stations (with 0.5- to 54.7-mgd capacity) and eight miles of force mains that convey wastewater to the EBMUD MWWTP. Treated water is disinfected, dechlorinated, and discharged through an outfall 1.2 miles off the East Bay Shore into the Bay. Solids are pumped to digesters for stabilization and are then dewatered and hauled offsite. Methane generated by the digesters is used to produce renewable energy.

The MWWTP provides primary treatment for up to a peak flow of 320 mgd and secondary treatment for a maximum flow of 168 mgd. The average dry weather flow into the MWWTP from 2010 to 2019 was approximately 54 mgd. During peak wet weather flow conditions, storage basins provide plant capacity for a short-term hydraulic peak of 415 mgd. Wet weather flows in excess of the 320 mgd primary treatment capacity are stored on-site in an 11-million-gallon wet weather concrete storage basin and returned to the plant when flows subside. The remainder of the primary effluent is diverted around the secondary treatment system, disinfected, and blended with secondary effluent prior to de-chlorination and discharge to Central San Francisco Bay. This discharge occurs only when the maximum secondary treatment capacity of 168 mgd is exceeded. EBMUD also operates three wet weather treatment facilities that are used to store and manage flows during wet weather events.

EBMUD recycles water at its MWWTP and has done so since the early 1970s. Recycled water is suitable for land uses that do not require potable water sources, such as industrial uses and certain landscaped areas. According to the 2020 UWMP, EBMUD provided approximately 8.3 mgd of recycled water to customers in 2020 and aims to meet its 2040 goal of 20 mgd. Incentives used by EBMUD to encourage customers to utilize recycled water include subsidized costs and reduced rates on recycled water, long-term contracts, grants, and low-interest loans used to retrofit buildings so that they can accommodate recycled water.

Solid Waste

Municipal solid waste collection and disposal in Alameda County is a local government responsibility shared among 14 cities and two sanitary districts. Non-hazardous solid waste and green waste (e.g., yard trimmings) in the City of Oakland are collected by Waste Management of Alameda County (WMAC), a subsidiary of Waste Management Incorporated (WMI), while recycling services are provided by California Waste Solutions.

WMAC provides waste collection services for residential, commercial, and industrial customers, as well as public facilities (parks and public buildings) in Oakland. These waste materials are taken to the Davis Street Resource and Recovery Complex in San Leandro for processing, and then hauled to the landfills serving the City. In 2019, most of the solid waste (99 percent) generated in Oakland was disposed of at one of three landfills – the Altamont and Vasco Road landfills, both of which are in Alameda County near the City of Livermore, and the Potrero Hills Landfill in Solano County near the City of Suisun (CalRecycle, 2019).

The permitted capacity, daily acceptance, remaining capacity, and estimated closure date for each of the landfills presently serving the City of Oakland are shown in **Table 4.12-1.** As shown, based on remaining capacity, the landfills serving the City are expected to remain operational for the next 25 to 47 years.

TABLE 4.12-1
REGIONAL LANDFILLS SERVING OAKLAND

Landfill	Permitted Capacity (cubic yards	Daily Acceptance (tons per day	Remaining Capacity (cubic yards)	Estimated Closure Date
Altamont	124,400,000	11,500	65,400,000	2070
Vasco Road	40,207,100	2,518	11,560,000	2051
Potrero Hills	83,100,000	4,330	13,872,000	2048

SOURCE: CalRecycle, 2023

In 2020, Oakland disposed of approximately 277,117 tons (3.50 pounds per day per person, 7.70 pounds per day per employee) of solid waste at various disposal facilities, which is well within the recommended daily per-capita targets of 5.80 pounds per day per person, 15.30 pounds per day per employee, established by CalRecycle (CalRecycle, 2020).

Electric and Natural Gas Facilities

Pacific Gas and Electric Company (PG&E) provides electrical and natural gas service to the Project site. An underground duct bank, containing a 115 kilovolt (kV) line and communication cables, runs within a PG&E easement that extends east-west through the Project site.

Heating and Chilled Water Facilities

HVAC (heating, ventilating and air conditioning) systems are currently housed in the Central Utility Plant (CUP) located at the southwest corner of the existing main hospital. The CUP includes 10 boilers and two 750-ton water cooled chillers with two cells induced draft cooling towers and associated pumps.

Telecommunications Facilities

The Project site is currently supplied with telecommunications services through various private companies. Typical telecommunications systems on the Project site include voice frequency, digital, fiber optic, wireless, Ethernet video over Internet Protocol, and voice over Internet Protocol. The infrastructure is located underground in vaults and conduits and aboveground on overhead power lines with pole mounted cable and transformers.

4.12.2 Regulatory Framework

Federal

Clean Water Act

The Clean Water Act established the basic structure for regulating discharges of pollutants into the waters of the U.S. and gave the USEPA the authority to implement pollution control programs, such as setting wastewater standards for industry. The Clean Water Act sets water quality standards for all contaminants in surface waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Under Section 401 of the Clean Water Act, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards.

National Pollutant Discharge Elimination System

The National Pollution Discharge Elimination System (NPDES) is a nationwide program for permitting surface water discharges, including from municipal and industrial point sources. In California, NPDES permitting authority is delegated to and administered by the nine regional water quality control boards (RWQCB). The San Francisco Bay RWQCB has set standard conditions for each permittee in the Bay Area, including effluent limitation and monitoring programs.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), Subtitle D, contained in Title 42 of the U.S. Code Section 6901 et seq. contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills. The USEPA waste management regulations are codified in Title 40 of the Code of Federal Regulations (CFR) parts 239–282. The RCRA Subtitle D is implemented by Title 27 of the PRC, approved by the USEPA.

State

Urban Water Management Planning Act

California Water Code Section 10610 et seq. requires all public water systems that provide water for municipal purposes to more than 3,000 customers, or that supply more than 3,000 AFY, to prepare an UWMP. UWMPs are key water supply planning documents for municipalities and water purveyors in California. UWMPs must be updated at least every 5 years on or before July 1, in years ending in 5 and 0. Details of EBMUD's UWMP are described below.

Senate Bill 610

The State of California adopted Senate Bill 610 (SB 610) effective January 1, 2002. SB 610 requires cities and counties, when evaluating large development and redevelopment projects, to request an assessment of the availability of water supplies from the water supply entity that will provide water to a project. The Water Supply Assessment (WSA) is performed in conjunction with the land use approval process associated with a project and must include an evaluation of the sufficiency of the water supplies available to the water supplier to meet existing and future demands, including the demand for a project over a 20-year time period that includes normal, single-dry, and multiple dry years. When a new development project is accounted for in the demand projections of an UWMP, the WSA can refer to the UWMP and no further analysis is necessary.

Water Code Section 10910 and 14 CCR 15155 (entitled "City or County Consultation with Water Agencies") apply only to cities and counties. Water Code Section 10910(a) states: "Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part."

Porter-Cologne Water Quality Control Act Permits

The Porter-Cologne Water Quality Control Act authorizes the SWRCB, which, in turn, delegated certain authority to the several Regional Water Quality Control Boards (RWQCB) to issue and enforce NPDES permits. In addition, the SWRCB develops water quality standards and performs other functions to protect California's waters. The RWQCBs, pursuant to their delegated powers, carry out the SWRCB regulations and standards as well as issue and enforce permits. The

EBMUD MWWTP and Interceptor Conveyance System is covered by a NPDES permit CA0037702 (RWQCB Order No. R2-2020-0024) adopted by the San Francisco Bay RWQCB in September 2020. The EBMUD wet weather facilities are covered by a NPDES permit CA00388440 (RWQCB Order No. R2-2020-0003) adopted by the San Francisco Bay RWQCB in February 2020.

See also Section 4.8, *Hydrology and Water Quality* for a discussion of relevant NPDES permits related to stormwater.

Senate Bill X7-7 (Water Conservation Act of 2009)

The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009 and requires that all water suppliers increase their water use efficiency. Water Code Section 10608 et seq. requires urban retail water suppliers to set and achieve water use targets that would help the State achieve a 20 percent per capita reduction in urban water use by December 31, 2020. SB X7-7 requires each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill is intended to promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in California Water Code Section 10631 as part of UWMPs.

Executive Orders B-29-15 and B-37-16

In April 2015, Governor Brown issued Executive Order B-29-15, which called for mandatory water use reductions. The executive order requires cuts for public landscaping and institutions that typically use large amounts of water (e.g., golf courses), banned new landscape irrigation installation, and requires municipal agencies to implement conservation pricing, subsidize water-saving technologies, and implement other measures to reduce the State's overall urban water use by 25 percent. The order also requires local water agencies and large agricultural users to report their water use more frequently.

In May 2016, Governor Brown issued Executive Order B-37-16, which made the mandatory water use reduction of 25 percent permanent and directed the California Department of Water Resources and SWRCB to strategize further water reduction targets. The order also made permanent the requirement that local agencies report their water use monthly. Additionally, certain wasteful practices such as sidewalk hosing and runoff-causing landscape irrigation were permanently outlawed, while local agencies must prepare plans to handle droughts lasting 5 years.

Senate Bill 606 and Assembly Bill 1668

SB 606 and AB 1668 set new requirements for urban water agencies to continue to increase water efficiency beyond the 2020 water use targets developed under SB X7-7. SB 606 and AB 1688 establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which were required to be in place by 2022. The two bills strengthen the State's water resiliency in the face of future droughts with provisions that include:

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers, comprised of indoor residential water use, outdoor residential water use, commercial, industrial and institutional (CII) irrigation with dedicated meters, water loss, and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and providing recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

Executive Order N-7-22

On March 28, 2022, Governor Newsom issued Executive Order (EO) N-7-22 in response to intensifying drought conditions. Among other requirements, EO N-7-22 limits a county, city or other public agency's ability to permit modified or new groundwater wells and instructs the SWRCB to consider (1) requiring certain water conservation measures from urban water suppliers and (2) banning non-functional or decorative grass at businesses and institutions.

California Green Building Standards Code

Water and Wastewater

Part 11 of the Title 24 Building Energy Efficiency Standards is referred to as the California Green Building Standards Code (CALGreen Code). The CALGreen Code is intended to encourage more sustainable and environmentally friendly building practices, conserve natural resources, and promote the use of energy-efficient materials and equipment. Since 2011, the CALGreen Code has been mandatory for all new residential and non-residential buildings constructed in the State. Mandatory measures related to water conservation include water-conserving plumbing fixture and appliance requirements, including flow rate maximums, compliance with State and local water-efficient landscape standards for outdoor potable water use in landscape areas, and recycled water systems, where available. The CALGreen Code was most recently updated in 2022 to include new mandatory measures for residential and non-residential uses; the 2022 amendments to the CALGreen Code became effective January 1, 2023. Updates include more stringent requirements for residential metering faucets, and a requirement that all residential and non-residential developments adhere to a local water efficient landscape ordinance or to the State of California's Model Water Efficient Landscape Ordinance, whichever is more stringent.

Solid Waste

As amended, the CALGreen Code (California Code of Regulations Title 24, Part 11) requires that readily accessible areas for recycling be provided to occupants of newly constructed non-residential buildings for the deposit, storage and collection of non-hazardous materials for recycling, including (at minimum) paper, corrugated cardboard, glass, plastics, organic waste and metals. The CALGreen Code also requires that non-residential building projects recycle and/or salvage for reuse a minimum of 65 percent of their non-hazardous construction and demolition waste or comply with a local construction and demolition waste management ordinance, whichever is more stringent (Section 5.408.1).

Assembly Bill 939 (California Integrated Waste Management Act)

AB 939, enacted in 1989 and known as the California Integrated Waste Management Act (Public Resources Code Section 40050 et seq.), requires each city and county in the State to prepare a Source Reduction and Recycling Element to demonstrate a reduction in the amount of waste being disposed in landfills. The act required each local agency to divert at least 50 percent of all solid waste (from 1990 levels), beginning January 1, 2000, and at least 75 percent by 2010. Diversion includes waste prevention, reuse, and recycling. In 2006, SB 1016 revised the reporting requirements of AB 939 by implementing a per capita disposal rate based on a jurisdiction's population (or employment) and its disposal. The new per capita disposal and goal measurement system moves the emphasis from an estimated diversion measurement number to an actual disposal measurement number, along with an evaluation of program implementation efforts.

The Integrated Waste Management Act requires local agencies to maximize the use of all feasible source reduction, recycling, and composting options before using transformation (incineration of solid waste to produce heat or electricity) or land disposal. The act also resulted in the creation of the State agency now known as CalRecycle. Under the Integrated Waste Management Act, local governments develop and implement integrated waste management programs consisting of several types of plans and policies, including local construction and demolition ordinances. The act also set in place a comprehensive statewide system of permitting, inspections, and maintenance for solid waste facilities, and authorized local jurisdictions to impose fees based on the types and amounts of waste generated.

In 2011, AB 341 amended AB 939 to declare the policy goal of the State that no less than 75 percent of solid waste generated would be source reduced, recycled, or composted by the year 2020, and annually thereafter.

Regional

EBMUD Urban Water Management Plan

As described above, EBMUD is required by the California Water Code to update and adopt an Urban Water Management Plan and submit a completed plan to the Department of Water Resources every five years. The EBMUD *UWMP 2020* provides an assessment of EBMUD's water supply and demand, an overview of the recycled water and conservation programs, compliance with the Water Conservation Act of 2009, and includes EBMUD's Water Shortage Contingency Plan (WSCP 2020). The UWMP is part of the EBMUD's long-term planning to ensure water supply reliability for EBMUD customers, especially during drought periods. The EBMUD Board of Directors adopted the final *UWMP 2020* and *WSCP 2020* on June 22, 2021.

EBMUD's UWMP presents estimates of projected future water demand within EBMUD's service area in five-year increments, between the years 2025 and 2050. The water demand projections in the UWMP reflect historical water use, expected population increase and other growth, climatic variability, and other assumptions.

The *WSCP 2020* describes EBMUD's actions to implement and enforce regulations and restrictions for managing a water shortage when it declares a water shortage emergency under the authority of the Water Code. It also describes EBMUD's planned actions to manage supply and demand before and during a water shortage to ensure a reliable water supply.

EBMUD's water supply assessment is included in EBMUD's *WSCP 2020*. The assessment compares the total water supply sources available to EBMUD with the long-term total projected water use over the next 30 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive years. As there is substantial uncertainty in forecasting into the future, EBMUD also considers a variety of scenarios in its long-term planning, including base condition, high water demand scenario, extreme drought scenario and five-year historical dry period.

Regional Private Sewer Lateral Ordinance

In 2009, the USEPA and the RWQCB ordered the EBMUD, six East Bay cities, and one sewer district to fix old, cracked sanitary sewer pipes. Many of these pipes needed repair to prevent infiltration of rainwater, which can overwhelm wastewater pipes and treatment facilities and cause partially treated wastewater to be released into the Bay. EBMUD and its partners have been required to adopt a Regional Private Sewer Lateral Ordinance beginning in 2011 in order to meet the requirements of the Municipal Regional Permit (MRP) and federal consent decree (EBMUD, 2011). The Regional Private Sewer Lateral Ordinance requires private lateral sewer owners to comply with the replacement and testing requirements to eliminate inflow and infiltration (I/I) from older sewer laterals. For new or redevelopment, the ordinance requires the installation and testing of sewer laterals to document that no stormwater is entering the wastewater flows through I/I.

UCSF

UC Policy on Sustainable Practices

The UC *Policy on Sustainable Practices*, developed in 2004 and updated as recently as July 2023, establishes goals in 13 areas of sustainable practices for both individual building projects and overall facilities operations: green building design; clean energy; climate protection; sustainable transportation; sustainable building and laboratory operations for campuses; zero waste; sustainable procurement; sustainable foodservices; sustainable water systems; sustainability at UC Health; general sustainability performance assessment; health and well-being; and diversity, equity, inclusion and justice (UCOP, 2023). Most relevant to this discussion are the goals and policies related to energy use (i.e., green building design, clean energy, sustainable operations), solid waste (i.e., zero waste), water supply (i.e., sustainable water systems), and sustainability at UCSF locations.

Specifically, with regard to green building design, UCSF is committed to meeting UC system–wide goals of achieving LEED Gold certification or better for all new buildings[83] and LEED Silver or better for new parking structures.[84] The policy also requires that all new non-acute care

[83] For all building projects submitting Preliminary Drawings after January 1, 2024. Projects submitted prior to that date have the option to follow the old standard of achieving LEED Silver and striving for Gold. Please note the preliminary drawings for the proposed Project would not be submitted before January 1, 2024.

[84] For all building projects submitting Preliminary Drawings after January 1, 2024.

facilities or major renovation projects outperform California Energy Code, Title 24, requirements by at least 20 percent and strive to outperform the requirements by 30 percent. UCSF saves millions of gallons of potable water annually through implementation of a comprehensive Water Action Plan, which outlines the campus's methods for reducing dependence on potable water and identifies broader opportunities for water conservation. Development on the UCSF BCH Oakland campus site must comply with the goals set forth in the Water Action Plan. The UC *Policy on Sustainable Practices* identifies the goal of a 20 percent reduction in growth-adjusted potable water consumption by 2020 and 36 percent by 2025 (compared to a 3-year average baseline of FY 2005–06, FY 2006–07, and FY 2007–08) (UCOP, 2023).

The UC produces an annual report to track its progress toward achieving the system-wide goal of sustainability by 2025. The annual report outlines ongoing progress of the UC's comprehensive sustainability program, including advancement in all areas of the UC *Policy on Sustainable Practices*; research and education; Presidential Initiatives; and student, faculty, and staff engagement.

City of Oakland

UCSF is not subject to local land use regulation whenever using land under its control in furtherance of its educational mission. However, it is UCSF policy to be generally consistent with applicable local plans, policies and regulations to the extent feasible. City plans and regulations that are germane to the impacts analysis of utilities and service systems are summarized below.

City of Oakland General Plan

The City of Oakland General Plan serves as the guiding document for the City's planning and future development. It includes goals, policies, and implementation measures that reflect the community priorities, values, and vision. The Land Use and Transportation Element (LUTE) and the Open Space, Conservation and Recreation (OSCAR) Element of the General Plan includes the following policies related to utilities and service systems.

The following objectives and policies within the Neighborhoods section of the LUTE apply citywide and are relevant to the proposed Project (City of Oakland, 2007):

> ***Policy N12.4: Undergrounding Utility Lines.*** Electrical, telephone, and related distribution lines should be underground in commercial and residential areas, except where special local conditions such as limited visibility of the poles and wires make this unneeded. They should also be underground in appropriate institutional, industrial, and other areas, and generally along freeways, scenic routes, and heavily traveled streets. Programs should lead systematically toward the eventual undergrounding of all existing lines in such places. Where significant utility extensions are taking place in these areas, such as in new subdivisions, utilities should be installed underground at the start.

The following objectives and policies within the OSCAR apply citywide and are relevant to the proposed Project (City of Oakland, 1996):

> ***Policy CO-4.1: Water Conservation.*** Emphasize water conservation and recycling strategies in efforts to meet future demand.

Policy CO-4.2: Drought-Tolerant Landscaping. Require use of drought-tolerant plants to the greatest extent possible and encourage the use of irrigation systems which minimize water consumption.

Policy CO-4.3: Use of Reclaimed Water. Promote the use of reclaimed wastewater for irrigating landscape medians, cemeteries, parks, golf courses, and other areas requiring large volumes of non-potable water.

Policy CO-13.1: Reliable Energy Network. Promote a reliable local energy network which meets future needs and long-term economic development objectives at the lowest practical cost.

Policy CO-13.3: Construction Methods and Materials. Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.

Policy CO-13.4: Alternative Energy Sources. Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

Oakland Green Building Ordinance

The City of Oakland adopted mandatory green building standards for private development projects on October 19, 2010. All buildings or projects must comply with all requirements of the 2013 California Building Energy Efficiency Standards and subsequent updates to those standards, as well as meet a variety of checklist requirements. These standards indirectly reduce water consumption through design features lowering building water use.

4.12.3 Impacts and Mitigation Measures

Significance Criteria

Would implementation of the NHB Project:

a) 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?

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

c) 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?

d) 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?

e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Approach to Analysis

The environmental impact analysis for utilities and service systems begins with an assessment of existing utility use and infrastructure services at the Project site. The projected demands for utilities and infrastructure services generated by the proposed Project are then calculated and compared to existing usage to estimate the net increase resulting from implementation of the proposed Project. Typically, utility assessments focus on supply, treatment or generation capacity and distribution or collection infrastructure requirements. For each utility, the analysis compares the net increase resulting from implementation of the proposed Project against the significance criteria set forth above. If the impact would be significant, the analysis identifies feasible mitigation measures that would eliminate the impact or reduce it to a less-than-significant level.

As UCSF is neither a city nor a county it is not subject to SB 610. However, UCSF has voluntarily elected to prepare a WSA-like document, a Water Supply Evaluation (WSE), to determine and demonstrate the sufficiency of the EBMUD's water supplies to satisfy the water demand of the Project (see Appendix WSE). The proposed Project's impact on water supply discussed below is based on the analysis in the WSE.

Impact Analysis

Impact UTIL-1: Implementation of the proposed NHB Project would require or result in the construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or telecommunications facilities, the construction or relocation of which would not cause significant environmental effects. (*Less than Significant*)

The proposed Project would develop additional hospital facilities on the Project site and would result in an increase in the number of patients, visitors and employees who would be on the campus site daily, and there would be an accompanying increase in water use as well as wastewater generated on the campus site. As discussed under Impact UTIL-2 below, the proposed Project's water demand is estimated to be about 0.08 mgd. This demand would represent less than 0.001 percent of existing water treatment capacity at EBMUD's Orinda Water Treatment Plant, which has a capacity of 200 mgd. With respect to wastewater generation, as discussed under Impact UTIL-3 below, the MWWTP has adequate capacity to handle the additional flows generated by the campus site as a result of the proposed Project. For these reasons, implementation of the proposed Project would not require expansion of existing water and wastewater treatment systems.

Utility improvements and/or extensions to serve the proposed Project would include domestic water, fire water, wastewater, stormwater, electrical, emergency fuel, telecommunications, steam and condensate, chilled water, and heating hot water. The utility infrastructure improvements required to serve the proposed Project are summarized in Chapter 3, *Project Description.* All of the utility infrastructure improvements would occur on the project site or within the street right-of-way immediately adjacent to the Project site. No off-site improvements would be required.

Construction activities associated with the utility improvements described above would have the potential to result in significant or potentially significant impacts. However, implementation of mitigation measures and compliance with other construction-related regulatory requirements discussed in other sections of this EIR, including Section 4.1, *Air Quality*; Section 4.2, *Biological Resources*; Section 4.3, *Cultural Resources, including Tribal Cultural Resources*; Section 4.5, *Geology and Soils*; Section 4.7, *Hazards and Hazardous Materials*; Section 4.8, *Hydrology and Water Quality*; Section 4.10, *Noise and Vibration*; and Section 4.11, *Transportation*, would reduce construction-related effects associated with the utility improvements to a less-than-significant level. (It should be noted that while in Section 4.10 a significant and unavoidable construction noise impact is identified for Project nighttime construction, the installation of NHB Project utilities would not occur during nighttime hours.) As a result, the impacts associated with the construction of new utilities to serve the proposed Project would be less than significant.

Mitigation: None required.

Impact UTIL-2: Sufficient water supply would be available from the EBMUD to serve the NHB Project and reasonably foreseeable future development under normal, dry and multi-dry years. EBMUD would address the anticipated shortfalls through rationing and conservation programs and/or develop new or expanded water supply facilities to address shortfalls during multiple dry years. (*Less than Significant*)

Construction

Construction of the proposed Project would result in a temporary demand for water at the Project site. This would include water needed for purposes such as dust control, certain construction processes (e.g., shoring batch plant operations, application of fireproofing), hydrostatic testing of systems, initial landscaping installation, general cleaning, and worker restrooms and drinking water. This temporary water demand would be comparable to that of other similarly sized construction projects of this nature. Given this would be a temporary demand for water, it would not have any long-term effect on available water supplies and as a result, the impact of this temporary demand would be considered less than significant.

Operation

Implementation of the proposed Project would result in an increased operational demand for water at the Project site, which is supplied by EBMUD. The analysis herein evaluates whether: (1) sufficient water supplies are available to serve the proposed Project and reasonably foreseeable future development in normal, dry, and multiple dry years, and (2) the proposed Project would require substantial conservation, rationing and/or the development of new or expanded water supply facilities, the construction of which would have significant environmental impacts.

EBMUD's water supply, primarily from the Mokelumne River system, far exceeds the potential demand of any single development project in EBMUD's service area. No single development project alone in EBMUD's service area would require the development of new or expanded water supply facilities or require EBMUD to take other actions, such as imposing a higher level of rationing across its service area in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis instead considers whether the proposed Project in combination with both existing development and projected growth in the EBMUD service area through 2045 would be served by existing and planned supplies or would require new or expanded water supply facilities, the construction or relocation of which could have significant cumulative impacts on the environment.

Estimated Existing Water Demand

Table 4.12-2 summarizes the estimated existing water demand at the Project site which includes water demand associated with operation of the existing Patient Tower, D&T Building, Cardiac Catheterization Lab, Western Expansion Building, Cafeteria, Central Utility Plant and Chiller Building, A/B and B/C Wings, the Bruce Lyon Memorial Research Laboratory and Addition, and the temporary trailers and existing helistop structure. Water distribution systems experience a degree of water loss over the course of transmission from the source to the customer, which was also accounted for. The existing water demand at the Project site is estimated at approximately 106 AFY, or about 0.09 mgd.

TABLE 4.12-2
EXISTING ESTIMATED WATER DEMAND AT NHB PROJECT SITE

Land Use	Water Demand (AFY)
Existing Buildings	
Patient Tower, D&T Building, Cardiac Catheterization Lab Western Expansion Building, Cafeteria, Central Utility Plant and Chiller Building	75.5
A/B and B/C Wings	14.8
Bruce Lyon Memorial Research Laboratory and Addition	3.2
Temporary Trailers and Helistop Structure	0.61
Total Existing Buildings Demand	94
Other	
Landscape Irrigation	1
Distribution System Losses	11
Project Annual Water Demand	**106**

NOTE: Added values reflect rounding
SOURCE: ESA, 2023

Estimated Project Water Demand

Table 4.12-3 summarizes the Project water demand at full buildout. Please see Appendix WSE for a detailed discussion of the methodology used to estimate Project water demand.[85]

TABLE 4.12-3
ESTIMATED NHB PROJECT WATER DEMAND

Land Use	Water Demand (AFY)
New Building Construction	
New Hospital Building	52.7
Parking Garage with Rooftop Helistop	0.12
Site Support Building	0.06
Total New Construction Demand	53
Existing Buildings to Remain under Project	
Patient Tower, D&T Building, Cardiac Catheterization Lab Western Expansion Building, Cafeteria, Central Utility Plant and Chiller Building	42
Total Existing Buildings Demand	42
Other	
Landscape Irrigation	1.6
Distribution System Losses	13
Total Other	15
Buildings/Structures to be Demolished/Removed under Project	
A/B and B/C Wings	-14.8
Bruce Lyon Memorial Research Laboratory and Addition	-3.2
Temporary Trailers and Helistop Structure	-0.61
Total Demolition/Removal Demand	-19
Project Annual Water Demand	**91**

NOTE: Added values reflect rounding
SOURCE: EKI, 2023

The proposed Project includes three new buildings: a new hospital building with 128 inpatient beds, a parking garage, and a site support building. The water demand associated with operation of the proposed new hospital building was estimated based on a water demand factor per proposed inpatient bed, along with water demand factors used for the proposed medical support, and general and clinical support uses that would occupy some of the spaces in the new hospital. The water demand for the loading operations in the proposed site support building and in the new hospital building were also separately estimated. In addition, incidental water demand associated with regular cleaning of the proposed parking structure was also estimated. As shown in Table

85 Please note that following completion of the WSE, the Project's proposed parking garage was reduced in size by over 53,000 square feet. As such, since the water demand associated with the parking garage (limited to cleaning of the facility) as assessed in the WSE would be incrementally higher than that generated by the parking garage as currently proposed, the WSE analysis is conservative and did not require revision.

4.12-3, these proposed facilities would generate an estimated water demand of about 53 AFY at full buildout.

Six existing buildings would remain in place as part of the proposed Project, including the Patient Tower, D&T Building, the Cafeteria, the Western Expansion Building, the Central Utility Plant, and the Chiller Building. Under Project buildout, 95 of the existing 177 inpatient beds in the existing hospital facilities would relocate to the proposed new hospital building. The water demand for the 82 inpatient beds that would remain in the existing hospital facilities under the proposed Project, along with supporting medical, general and clinical uses, and cafeteria, was estimated and is reflected in Table 4.12-3. The operation of the Central Utility Plant and Chiller Building would add a negligible additional water demand. The existing buildings to remain on the Project site under the Project were estimated to have a water demand of 42 AFY.

Water demand associated with landscaping on the Project site was also estimated and is reflected in Table 4.12-3. It was conservatively assumed that all pervious areas on the Project site, amounting to approximately 0.7 acres, would require irrigation. Thus, it is estimated that the total annual water use for the proposed landscaping would be approximately 1.6 AFY. It is estimated that distribution system losses for the proposed Project would be approximately 13 AFY.

Lastly, several existing buildings and structures on the Project site would be demolished or removed as part of the proposed Project, including the A/B Wing, the B/C Wing, the Bruce Lyon Memorial Research Laboratory and Addition, the existing helistop structure, and temporary trailers. The total water demand associated with the demolished or removed structures is estimated to be approximately 19 AFY, and accordingly, this demand was subtracted from total projected water demands to show the net water demand associated with the proposed Project.

As shown in Table 4.12-3, it is estimated that the net annual water demand associated with the buildout and occupancy of the proposed Project would be approximately 91 AFY, or about 0.08 mgd. This reflects a 15 AFY (0.01 mgd) decrease from the estimated existing annual water demand at the Project site of 106 AFY and is due to the fact that although 33 additional inpatient beds would be provided under the Project, the water demand associated with the new beds would be less than the water demand that would be eliminated with the removal of A/B and B/C Wings and the Bruce Lyon Memorial Research Laboratory and Addition, which are older structures that are less water efficient than newer buildings. Nevertheless, as a worst-case assessment for addressing Project impacts on water supply, the impact analysis below is based on the estimated full Project water demand of 91 AFY.

Impact Analysis

As indicated above, the proposed Project includes three new buildings, including a new hospital building that would increase the inpatient bed count by 33 new beds – increasing from 177 to 210 beds at the Project site (128 in the new hospital building, and 82 in existing facilities), a parking garage, and site support building; demolition or removal of a number of existing buildings and structures; and renovation of existing buildings.

As discussed in Chapter 3, *Project Description*, a prior hospital expansion at the campus site was proposed and analyzed under CEQA, but was never built. That proposal similarly included a new hospital that would increase the bed count to 210 beds, add medical and other supporting offices and a new parking garage at the Project site, and included demolition of several buildings and structures; and thus, was similar to the current proposal, though it would have involved less square footage. A WSA prepared by EBMUD for that prior proposal concluded that project's water demand of 145 AFY was accounted for in EBMUD's water demand projections in EBMUD's 2010 UWMP. Accordingly, an increase in water demand on the order of 145 AFY due to an expansion of the hospital at UCSF BCH Oakland was contemplated and accounted for in EBMUD's water projections. As noted above, the estimated water demand of the proposed Project would be about 91 AFY, which is lower than the prior estimate for a similar project at the UCSF BCH Oakland campus site. Therefore, it is reasonable to assume that the water demand associated with the proposed Project is already accounted for in EBMUD's current water demand projections.

EBMUD UWMPs do not explicitly list every major water user within the district's service area; water demand of all commercial, industrial and institutional (CII) users is combined and presented in the UWMP as CII demand. UCSF BCH Oakland's existing water demand is accounted for within the existing CII demand in the *UWMP 2020*. According to EBMUD's *UWMP 2020*, CII demand in the district's service area is projected to increase by approximately 50 percent between 2020 and 2045, which corresponds to a net CII demand increase of 8,961 AFY. If the proposed Project's water demand of 91 AFY is compared to the projected CII demand increase of 8,971 AFY, the Project's demand would account for approximately 1.3 percent of the projected net CII growth. Based on this, it is reasonable to assume that the Project's water demand is within the projected growth in CII water demand anticipated by EBMUD in the *UWMP 2020* (EKI, 2023).

The EMBUD *UWMP 2020* projects that with demand reduction actions and conservation, available water supplies will be sufficient to meet the demands under normal year, single dry, and multiple dry year hydrologic conditions through 2045. In response to anticipated future dry-year shortfalls, EBMUD has developed a WSCP that systematically identifies ways in which EBMUD can reduce water demands during dry years. The overall reduction goals in the *WSCP 2020* are established for six drought stages ranging from 10 percent to greater than 50 percent shortfalls (EKI, 2023).

As discussed in Section 4.12.2, *Regulatory Setting*, SB 606/AB 1688 set new requirements for urban water agencies to continue to increase water efficiency beyond the 2020 water use targets developed under the Water Conservation Act of 2009 (SB X7-7). Beginning in 2023, agencies will be required to report on and comply with "annual water use objectives." The specific standards that will be used to determine an agency's annual water use objectives are currently under development but are expected to result in continued increases in efficiency for all urban water suppliers in the state. In addition, SB 606/AB 1668 add new requirements related to drought planning and WSCPs, including requirements for agencies to: (1) conduct a drought risk assessments as part of their future UWMPs to assess water supply reliability for a period of drought lasting five consecutive water years (CWC §10635(b)), and (2) conduct annual water supply and demand assessments of its water supply reliability for the current year and one dry year. These elements are included in EBMUD's *WSCP 2020*. During the 2015/2016 drought, EBMUD was subject to the SWRCB's mandatory water reduction target of 20 percent between June 2015 and June 2016.[86] During this period, EBMUD surpassed its reduction targets and achieved an average water demand reduction of 24 percent compared to its water use in 2013 (EKI, 2023).

On 26 April 2022, in response to EO N-7-22 and calls for water conservation from the SWRCB, EBMUD entered into Shortage Level 2 of its WSCP and implemented a Drought Stage 2 surcharge on 10 May 2022 (8 percent on each unit of potable water delivered on or after 1 July 2022). In 2022, EBMUD's average water use was reduced by 8.0 percent compared to the District's water use in 2020 (EKI, 2023).

EBMUD is also striving to increase the water supply portfolio through: (1) investment in water conservation, (2) conjunctive use and groundwater banking (i.e., Bayside Groundwater Project and Eastern San Joaquin County Groundwater Banking/Exchange), (3) water transfers with various agencies (i.e., Placer County Water Agency, Yuba County Water Agency, Sycamore Mutual Water Company), (4) expansion of surface water storage, (5) the Bay Area Regional Desalination Project, (5) Bay Area Regional Partnerships (i.e., Bay Area Regional Reliability Project), and (6) infrastructure improvements (i.e., Upper San Leandro Water Treatment Plan [WTP] Reliability Project, Orinda WTP Disinfection Improvements, Sobrante WTP Reliability Project, Walnut Creek WTP Pre-Treatment Project, and Interties with Other Agencies) (EKI, 2023).

Water conservation efforts discussed above would require changes to how businesses operate, changes to water use behaviors (e.g., shorter and/or less-frequent showers), and restrictions on irrigation and other outdoor water uses (e.g., car washing), all of which could lead to undesirable socioeconomic effects. However, any such effects would not constitute physical environmental impacts under CEQA. As for the remaining projects listed above, each project would undergo separate environmental review for their potential effects on the environment, and if necessary, mitigation would be proposed to reduce each project's effects on the environment to the maximum extent feasible.

Finally, it should be noted that the estimated water demand associated with the proposed Project is conservative as the Project would comply with the applicable UC *Policy on Sustainable Practices*, as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development, which would reduce overall water demand.

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86 On 5 May 2015, the SWRCB adopted Resolution 2015-0032 that mandated minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation goal to each water supplier based on their R-GPCD. The Resolution was adopted pursuant to EO B-29-15 that directed SWRCB to impose mandatory restrictions on urban water suppliers to achieve a statewide 25 percent reduction in potable urban water usage to address California's severe drought conditions. Based on its R-GPCD, EBMUD was required to reduce water use by 16% relative to its 2013 water use; however, EBMUD decided to adopt a 20 percent reduction standard instead. EBMUD exceeded their mandatory savings targets by June 2016.

Therefore, based on the information provided above, with demand reduction actions and conservation, sufficient water supply would be available from EBMUD to serve the Project and reasonably foreseeable future development under normal, dry and multi-dry years, and this impact would be less than significant.

Mitigation: None required.

Impact UTIL-3: The wastewater treatment provider would have adequate wastewater treatment capacity to serve the NHB Project. (*Less than Significant*)

Construction

Construction of the Project would temporarily generate wastewater at the Project site that would require treatment. As described in Chapter 3, *Project Description*, in areas where deep excavation occurs, limited and temporary dewatering may be required during construction. Water from the dewatering activities would be discharged to the City's sanitary sewer system, after treatment, if necessary. Other sources of wastewater during construction that would be discharged to the City's sanitary sewer system would be associated with hydrostatic testing of systems, general cleaning, and construction worker restrooms. Given this would be a temporary generation of wastewater, it would not have any long-term effect on wastewater treatment capacity, and as a result, the impact associated with construction-phase wastewater discharge would be considered less than significant.

Operation

Operation of the proposed Project would result in an increase in wastewater discharged from the Project site compared to existing conditions. Using the full Project water demand estimate from the WSE, and assuming wastewater generation as 90 percent of water usage, the net increase in wastewater resulting from the proposed Project would be approximately 0.07 mgd. All wastewater generated under the proposed Project would be discharged to the City's sanitary sewer system and conveyed southwest to EBMUD's MWWTP for treatment. The MWWTP has a primary treatment capacity of 320 mgd and a secondary treatment capacity of 168 mgd, and the average dry weather flows treated at the MWWTP at the present time are approximately 54 mgd. Wastewater generated by the proposed Project would represent less than 0.02 percent of the MWWTP's primary treatment capacity and 0.04 percent of the secondary treatment capacity. The Project flows would therefore be accommodated by the existing MWWTP, which is currently operating at approximately 17 percent of its primary treatment capacity and 32 percent of the secondary treatment capacity. As a result, the proposed Project would not result in a determination by EBMUD that it has inadequate dry weather capacity to serve the Project, and the impact would be less than significant.

Mitigation: None required.

Impact UTIL-4: The NHB Project would not 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*)

Construction

Based on waste rates for nonresidential construction and renovation provided by the USEPA, the proposed Project would result in an estimated 21,644 tons of construction waste (USEPA, 2009).[87] Construction debris would be transported by a registered transporter to a registered facility that must recover for reuse or recycling and divert from landfill at least 65 percent of all received construction and demolition debris. As a result, construction associated with the proposed Project would generate an estimated 7,684 tons of waste that would require disposal at a landfill.

Given the amount of remaining capacity at the landfills serving the City where solid waste is disposed, Project construction activities would not result in solid waste generation that exceeds the permitted capacity of the regional landfills that serve the campus site. Therefore, this impact would be less than significant.

Operation

Operation of the proposed Project would increase the amount of solid waste generated at the Project site by approximately 357 tons[88] of solid waste per year or 0.98 tons per day. Employees, visitors and patients would continue to participate in UCSF's recycling and composting programs and other efforts to reduce the total amount of waste produced and/or requiring landfill disposal. UCSF has consistently increased its landfill diversion rate, rising from 64 percent in 2013 to 78 percent in 2018, as it strives to meet the UC *Policy on Sustainable Practices* goal of zero waste. As a result, if the latest diversion rate of 78 percent is applied, the proposed Project would generate approximately 76 tons of solid waste per year or 0.2 tons per day that would require disposal in regional landfills.

As previously discussed, the Davis Street Transfer Center has a maximum capacity of 5,600 tons of waste per day. The 0.2-ton per day increase in waste generation resulting from the proposed Project represents less than 0.004 percent of the total capacity of the Davis Street Transfer Center. In addition, the permitted daily capacity of the landfills that serve the City of Oakland range from 2,518 to 11,500 tons per day, and thus the projected increase in waste generated by the proposed Project would also be less than 0.008 percent of each facility's permitted daily capacity. Finally, the landfills serving the City are not expected to cease operation for at least 25 years. For these reasons, the proposed Project would not generate solid waste in excess of local infrastructure and this impact would be less than significant.

Mitigation: None required.

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87 Generation rates of 4.34 lb/ft^2 for new nonresidential construction, 12.7 lb/ft^2 for nonresidential renovation, and 158 lb/ft^2 for nonresidential demolition were used for this calculation. Construction: 435,600 new square feet * 4.34 lb/ft^2 / 2,000 lb/ton = 945 tons. Renovation: 30,000 gsf * 12.7 lb/ft^2/ 2,000 lb/ton = 191 tons. Demolition (buildings plus asphalt/concrete) = 259,600 sq. ft. * 158 lb/ ft^2 / 2,000 lb/ton = 20,508 tons.

88 Operation: (325,953 net new building gsf * 6 lb/1,000 sf per day) * 365 days per year/2,000 lb/ton = 357 tons.

Impact UTIL-5: The NHB Project would comply with applicable management and reduction statutes and regulations related to solid waste. (*Less than Significant*)

The proposed Project would be required to comply with federal, State, and local solid waste standards identified above in Section 4.12.2, *Regulatory Setting*, such as the California Integrated Waste Management Act, AB 939, the CALGreen Code, AB 341 and AB 1826, and SB 1383. Furthermore, medical waste generated on the Project site would be removed and disposed of in accordance with existing regulations. As a result, construction and operation of the proposed Project would not conflict with applicable waste reduction policies and the impact regarding compliance with solid waste regulations would be less than significant.

Mitigation: None required.

Cumulative Impacts

Impact C-UTIL-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the UCSF BCH Oakland campus site, would not result in significant cumulative impacts related to utilities and service systems. (*Less than Significant*)

Utility Infrastructure

The proposed Project, when combined with foreseeable growth on and in the vicinity of the UCSF BCH Oakland campus site, could increase the demand for utilities and service systems. As the vicinity of the campus site is a densely developed urban area, development in the vicinity of the site would occur as replacement or in-fill on otherwise built-out sites. City utility systems that serve the area have sufficient capacities to serve those sites and the proposed Project. To the extent that cumulative demands on water, wastewater or stormwater conveyance systems from reasonably foreseeable growth in the City would require the construction of new or expansion of existing conveyance systems, such construction may have the potential to cause environmental impacts. However, in general, impacts would be limited to temporary construction effects and would be minimized by best practices and standard conditions of approval that are routinely imposed by the City on all development, including infrastructure projects. As discussed above, with mitigation and compliance with construction-related regulatory requirements, construction-related effects associated with utility improvements needed to serve the proposed Project would be reduced to less than significant. As a result, the cumulative impact on utility infrastructure would be less than significant.

Water Supply

As described above, the analysis conducted in Impact UTIL-2, and the WSE it is based on, is a cumulative analysis of the Project's water demand within the context of the overall cumulative water demand within EBMUD's service area. As noted in Impact UTIL-2, with conservation and demand reduction actions, sufficient water supply would be available from EBMUD to serve the proposed Project and reasonably foreseeable future development within its service area under normal, dry, and multi-dry years, and thus the cumulative impact with regard to water supply would be less than significant.

Wastewater Treatment

The proposed Project, when combined with foreseeable growth on and in the vicinity of the UCSF BCH Oakland campus site, would increase the demand for the wastewater treatment facilities. Reasonably foreseeable cumulative projects would need to meet the wastewater pre-treatment requirements of EBMUD and SWRCB. The areas served by the MMWTP are largely built out. Any future development in the service area would likely consist of replacement or in-fill on otherwise built-out sites. As stated above under Impact UTIL-3, the MMWTP is currently operating at 17 percent of its primary treatment capacity and 32 percent of the total secondary treatment capacity, and thus there is enough capacity to serve development envisioned under the proposed Project and reasonably foreseeable future redevelopment and infill development in the service area. Therefore, cumulative impacts with regard to wastewater treatment capacity would be less than significant.

Solid Waste Disposal

The proposed Project, when combined with foreseeable growth on and in the vicinity of the campus site, would increase demand for solid waste disposal. Increased waste generation from reasonably foreseeable cumulative projects would be partially offset by existing State and local ordinances and policies regarding waste reduction. As discussed above, based on remaining capacity, the landfills serving the City are not expected to cease operation for at least 25 years, and thus there is enough capacity to serve development envisioned under the proposed Project and reasonably foreseeable future development. Therefore, cumulative impacts regarding solid waste disposal capacity would be less than significant.

Mitigation: None required.

4.12.4 References

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4.13 Effects Found Not to Be Significant

According to *CEQA Guidelines* Section 15128, an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.

This section presents information for certain environmental topic areas that, based on review by UCSF, were determined to have no Project impact, including Agriculture and Forestry Resources; Mineral Resources; and Wildfire; or a less than significant impact in the issues of Population and Housing, and Shadow. The following sections present brief summaries of the Project effects that were found not to be significant, including a discussion of reasons why they would not be significant. Please also refer to the impact sections in Chapter 4 of this EIR for other environmental impacts that were found not to be significant.

4.13.1 Agriculture and Forestry Resources

The California Department of Conservation (DOC), Division of Land Resource Protection, has established the Farmland Mapping and Monitoring Program (FMMP), which monitors the conversion of the state's farmland to and from agricultural use. Four categories of farmland – Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance – are considered valuable, and are collectively titled Important Farmland. The Project site is designated for urban uses and no agricultural uses are located on the site. As a result, no land on the Project site is designated as Important Farmland on maps prepared pursuant to the FMMP (DOC, 2023). Thus, the Project would have no impact related to conversion of Important Farmland to a nonagricultural use. In addition, no portion of the Project site is zoned for agricultural use; as a result, the Project would not conflict with any zoning for agricultural use, and there would be no impact in this regard.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, enables local governments to designate agricultural preserves and enter into contracts with private landowners for restricting specific parcels of land to agricultural, or related open space use. The Project site and its vicinity are not under any Williamson Act contracts or within any agricultural preserve.

With respect to forestry resources, no forest land or existing timber harvest uses are located on or in the vicinity of the Project site. No areas of the Project site are zoned for timberland. As such, the Project would not result in the loss of forest land or conversion of forest land to non-forest uses, or conflict with existing zoning for timberland, and therefore would have no impact on forest land or timberland.

4.13.2 Mineral Resources

The Project is located on land classified by the DOC Division of Mines and Geology as Mineral Resource Zone 1 (MRZ-1), an area where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight (DOC 1987; 2000). There are no known significant mineral resources in the Project site or in the vicinity of the Project site. Additionally, there are no areas designated or zoned as mineral resource zones by the City's General Plan.

No mineral extraction activities currently occur or have historically occurred on the Project site, and mineral extraction is not included within the Project's design. The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; and would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. As a result, approval of the Project would not interfere with any mineral extraction operations and would not result in the loss of land designated for mineral resources. Therefore, no impact to mineral resources would occur.

4.13.3 Population and Housing

The proposed Project would include the construction of a new hospital building with a rooftop helistop, a site support building, a new parking structure; renovation and/or structural retrofitting of existing buildings, and other supporting improvements. The proposed Project would not include new homes or businesses and would not result in the extension of new roads or other major infrastructure, such that direct population growth would result due to the Project. The proposed Project would add an estimated 135 staff, vendors and volunteers, 32 faculty, and 16 students and fellows to the UCSF BCH Oakland campus site by 2032. The Association of Bay Area Governments (ABAG) projects that total population and job growth within Oakland will increase by 35.5 percent (or 170,355 residents) and 8.1 percent (or 19,930 jobs), respectively, between 2020 and 2035 (MTC/ABAG 2018). The proposed Project's employment would represent less than one percent of this growth at Project completion.

The growth in employment at the Project site would not represent significant unplanned growth because as noted above, the increase in Project employment would be within the projections for population and employment growth identified by ABAG. While it is likely that some of the new employees would already be living in the Bay Area at the time that they are hired by UCSF BCH Oakland, some of the new employees potentially could be new to the area and may move into the Bay Area communities to work at the campus site. As the number of employees added by the proposed Project is small and housing is distributed throughout the Bay Area communities, the population associated with the proposed Project would be served by the existing and planned housing supply. Furthermore, as there are no residential units located on the Project site, the proposed Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. For these reasons, the proposed Project's impact on population and housing would be less than significant.

4.13.4 Public Services

Fire Protection

The Oakland Fire Department (OFD) currently provides fire protection services to the UCSF BCH Oakland campus site, including the Project site. The nearest OFD fire station is Oakland Fire Station 8, located approximately 0.30 miles east of the campus site at 463 51st Street. Other fire stations in proximity to the campus site include Station 5 at 934 34th Street (0.9 miles southwest of the campus site), Station 19 at 5776 Miles Avenue (1.1 miles northeast of the campus site), and Station 15 at 455 27th Street (1.4 miles southeast of the campus site. In the event of a major emergency at the campus site, at a minimum, four fire engines and two ladder trucks will be dispatched. Every nearby station houses an engine company; ladder trucks are housed at Stations 8 and 15 (Smith, 2023).

Development under the proposed Project would result in an increase in on-site population and building space and an incremental increase in demand for fire protection services at the Project site. However, the population increase associated with the proposed Project would be small in comparison to the population served by the existing fire stations near the campus site. In addition, the increase in calls for fire protection would not be substantial considering the existing demand and capacity for fire protection in the City. The Project site is in an urban area and would not extend demand for the OFD beyond the current limits of its service area. Finally, the OFD has indicated that it can provide fire protection services to the proposed Project (Smith, 2023). For these reasons, the anticipated population and building space increase associated with the proposed Project would not adversely affect OFD service standards nor require an increase in OFD staff and/or equipment that would require the construction of new fire protection facilities.

Furthermore, the proposed Project would be designed and constructed to comply with building and fire codes and include appropriate fire safety measures and equipment, including but not limited to, use of fire-retardant building materials, inclusion of emergency water infrastructure (e.g., fire hydrants and sprinkler systems), installation of smoke detectors and fire extinguishers, emergency response notification systems, and provision of adequate emergency access ways for emergency vehicles.

As such, the existing fire stations in the vicinity of the campus site would be adequate to meet the increases in demand for fire protection services associated with the proposed Project, and no additional new or physically altered facilities would be necessary. Therefore, implementation of the proposed Project would have a less than significant impact regarding the construction of new or physically altered fire protection facilities.

Police Protection

The UC Police Department (UCPD) provides police protection services to the UCSF BCH Oakland campus site, including the Project site. The UCPD is headquartered at 654 Minnesota Street in San Francisco, approximately 8.5 miles from the Project site. The UCPD also operates a patrol station at the UCSF BCH Oakland campus site. In addition, the Oakland Police Department (OPD) provides police protection services in the vicinity of the UCSF BCH Oakland campus site. The OPD is headquartered at 455 7th Street, approximately 2.6 miles south of the campus site.

The increase in daily population associated with the proposed Project could increase demand for UCPD and OPD services. It is both UCPD's and OPD's practice to review staffing levels and to provide necessary staffing to meet standard response times (less than 3 minutes for emergency/in-progress calls and less than 5 minutes for normal service). Due to the small increase in campus site daily population, it is unlikely that a substantial number of additional police officers and/or other UCPD and OPD staff would be needed. Furthermore, the increase in UCPD and OPD staff would be accommodated in existing facilities. In summary, population growth due to the proposed Project is not anticipated to substantially increase demand for UCPD and OPD services, and no new facilities would be required, the construction of which could result in significant environmental impacts. For these reasons, impacts to police protection services would be less than significant.

Schools

The proposed Project does not include housing, and therefore, would not result in new school age children. As a result, the proposed Project would have no impact on schools.

Parks and Recreation

The area near the campus site, including the Project site, is served by two community parks, three neighborhood parks, one active mini-park, one passive mini-park, two linear parks, and one swimming pool/arts studio complex. Dover Street Park, an approximately one-acre park that includes a play structure, community garden, benches, and lawn areas, is located about five blocks to the north of the campus site. In addition, Helen McGregor Plaza Park is located immediately northwest of the campus site, across Martin Luther King Jr. Way. This approximately quarter-acre park consists of a plaza with concrete seating areas utilized by people waiting for the bus, and landscaped trees.

The proposed Project does not include any housing and would therefore not increase residential population in the project area that could increase the use of local parks. New employees at the Project site could incrementally increase the use of these parks as they access the facilities on their breaks or before or after their shifts; however, the increase in employment on the site is minor, and the additional Project employment would not be expected to increase the use of these facilities such that physical deterioration would occur or be accelerated, and this impact is less than significant.

Other than a small play area for patients, the proposed Project does not include any recreational facilities. As a result, it does not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment, and no impact would occur.

Other Facilities

The proposed project does not include housing, and therefore, would not result in an increase in residential population. As a result, the proposed Project would have no impact on other facilities, such as libraries and community centers.

4.13.5 Wildfire

Wildfire was added in the update to the *CEQA Guidelines* as an environmental topic for consideration with regard to impacts that could occur in areas in or near State Responsibility Areas (SRA) or lands classified as very high fire hazard severity zones.

The UCSF BCH Oakland campus site, including the Project site, is in a Local Responsibility Area (LRA) and a non-Fire Hazard Severity Zone (CAL FIRE 2023). As such, the Project is not located in or near a SRA or lands classified as very high fire severity zones and is not susceptible to wildfires. The Project site is not immediately upstream of notably sloped or hillside areas, and thus would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, because of runoff, post-fire slope instability, or drainage changes. For these reasons, no impact would occur with respect to wildfire.

4.13.6 References

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CHAPTER 5
CEQA Statutory Sections

5.1 Introduction

Section 15126 of the *CEQA Guidelines* requires that when evaluating a project's impact on the environment all phases of the project must be considered, including planning, construction, and operation, taking account of the impacts both in the short-term and long-term. More specifically, Section 15126.2 requires disclosure of (1) Significant Environmental Effects Which Cannot be Avoided if the Proposed Project is Implemented [*CEQA Guidelines* Section 15126.2(c)], (2) Significant Irreversible Environmental Changes Which Would be Caused by the Proposed Project Should it be Implemented [*CEQA Guidelines* Section 15126.2(d)], and (3) Growth-Inducing Impact of the Proposed Project [*CEQA Guidelines* Section 15126.2(e)]. In addition, Section 15128 of the *CEQA Guidelines* also notes that "an EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR."

Chapter 2, *Summary*, and Chapter 4, Sections 4.1 through 4.12 provide a comprehensive presentation of the potential environmental effects that could result from implementation of the proposed NHB Project, proposed mitigation measures, and conclusions regarding the level of significance of each impact before and after mitigation, and Section 4.13 presents those impacts that were determined not to be significant and were therefore not discussed in detail in the EIR. Other CEQA-required analyses described above are presented below.

5.2 Significant and Unavoidable Impacts

Section 15126.2(c) of the *CEQA Guidelines* requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed Project on various aspects of the environment are discussed in detail in Chapter 4, *Environmental Setting, Impacts, and Mitigation Measures*. Significant impacts of the proposed Project that cannot be avoided if it is approved as proposed are summarized in **Table 5-1**, below.

Section 15126.2(c) also requires: "Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and reasons why the project is being proposed, notwithstanding their effect, should be described." The discussion of the feasibility of alternatives to address significant impacts of the proposed Project is found in Chapter 6, *Alternatives*.

TABLE 5-1
SIGNIFICANT AND UNAVOIDABLE IMPACT OF THE PROPOSED NHB PROJECT

Impacts
Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity could result in significant cumulative health risk impacts.
Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources.
Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

5.3 Significant Irreversible Environmental Effects

Under CEQA, an EIR must analyze the extent to which a project's primary and secondary effects would commit future generations to the allocation of nonrenewable resources and to irreversible environmental damage (*CEQA Guidelines* Section 15126.2(d)). Specifically, Section 15126.2(d) states:

> 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 project would involve a large commitment of nonrenewable resources;
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy); and/or
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project.

With respect to the potential of the proposed Project to commit future generations to similar uses, the UCSF BCH Oakland campus site is an operating children's hospital that provides a broad range of inpatient and outpatient services to infants, children, teens, and young adults, and is developed with hospital and other clinical facilities. The proposed Project would not alter the types of land uses and activities conducted at the campus site.

With respect to the commitment of non-renewable resources, and consumption of resources, these would occur during both construction and operation of the proposed Project. Construction of the proposed Project would require the use of fossil fuels, construction materials, and water. During operation, the proposed Project would also require an irreversible commitment of energy, primarily in the form of fossil fuels for heating and cooling of buildings, for vehicle fuel, and for energy production, as well as potable and non-potable water for consumption, landscaping, and other uses.

However, as discussed in Section 4.4, *Energy*, the University would be required to adhere to all relevant UC Policy on *Sustainable Practices* provisions that are designed to conserve and reduce energy consumption. These provisions require new construction and renovation projects to have energy performance that is at least 20 percent better than California Code of Regulations Title 24, and to strive to achieve 30 percent improvement. The new hospital building would pursue a minimum level of LEED Gold Certification. Also, in keeping with the UC *Policy on Sustainable Practices*, UCSF BCH Oakland intends to purchase net zero carbon electricity, either from the UC Regents through the Direct Access Program, or from an alternative provider such as East Bay Community Energy. The UC Regents program is referred to as the UC Clean Power Program and contributes to achieving carbon neutrality in indirect emissions through the purchase of carbon-free electricity. As of 2019, the UC Clean Power Program became 100 percent carbon free. The UC Policy on Sustainable Practices now has a policy goal that each campus and health location obtain 100 percent clean electricity by 2025. In addition, activities under the proposed Project would be conducted in a manner that supports UCSF's achievement of goals set forth in the adopted Carbon Neutrality Initiative (CNI), which has goals more stringent than the statewide target of achieving 80 percent below 1990 emission levels by 2050. Campus programs that are implemented to achieve the CNI goals would have the effect of reducing overall energy usage. As such, the consumption of resources would not be unjustified or involve the wasteful use of energy.

As described further in Section 4.11, *Transportation*, future average daily vehicle miles traveled (VMT) per worker under the proposed Project would be substantially lower than the San Francisco Bay Area average. The VMT rates would be supported by the University's Transportation Demand Management program. Lower VMT would result in lower mobile fuel use per worker and per resident than the regionwide and countywide average. Therefore, the consumption of resources would not be unjustified or involve the wasteful use of nonrenewable resources. In addition, as described in Section 4.6, *Greenhouse Gas Emissions*, the operation of the NHB Project would not result in a significant increase in greenhouse gas (GHG) emissions. The new hospital building would have no natural gas infrastructure and all new facilities would be entirely powered by electricity to meet the building energy use needs; as such, the Project would comply with BAAQMD's GHG threshold related to building design. Secondly, the Project is being designed and developed to minimize its environmental impact and to support the health of its occupants and the well-being of the local community with a focus on reducing air pollutant and GHG emissions and water use, and conserving energy; consequently, the Project would avoid wasteful, inefficient or unnecessary electrical use. Third, the Project would provide 122 EV capable spaces,[89] of which 40 spaces would include Electric Vehicle Supply Equipment (EVSE); as such the Project would comply with BAAQMD's GHG threshold related to EV charging infrastructure. Lastly, the Project VMT generated per worker would be 36 percent below the

89 An EV capable space is a vehicle space with electrical panel space and load capacity to support a branch circuit and necessary raceways, both underground and/or surface mounted, to support EV charging.

regional average VMT per capita; therefore, the Project would outperform the 15 percent below regional average requirement stipulated in BAAQMD's GHG threshold related to VMT. As the Project complies with all four BAAQMD thresholds for GHG, the Project would not generate GHG emissions that would have a significant impact on the environment. In addition, as discussed in Section 4.6, the Project would be consistent with the core strategies of both CARB's 2022 Scoping Plan and *Plan Bay Area 2040* and thus would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With respect to irreversible damage that could result from an environmental accident associated with the proposed Project, the potential for such effects is discussed in detail in Section 4.7, *Hazards and Hazardous Materials*. As discussed there, the proposed Project would involve the transport, handling, storage and disposal of varied quantities of hazardous materials, including biohazardous materials, chemical materials, and low-level radioactive waste. If not handled appropriately, upset and accident conditions could result in releases of hazardous materials or wastes that could result in adverse effects to residents, workers, the public or the environment. However, compliance with hazardous storage and transportation regulations, and continuation of the programs and controls currently in place to manage hazardous materials, as mandated by State and federal laws, the potential impact to workers, residents, visitors, or the environment would be reduced to a less-than-significant level and no irreversible damage would result.

5.4 Growth-Inducing Effects

As required under CEQA, an EIR must include a discussion of the ways in which the proposed Project could directly or indirectly foster economic or population growth, or the construction of additional housing and how that growth would, in turn, affect the surrounding environment (*CEQA Guidelines* Section 15126.2(e)). Growth can be induced in a number of ways, including the elimination of obstacles to growth, or through the stimulation of economic activity within the region. The discussion of removal of obstacles to growth relates directly to the removal of infrastructure limitations or regulatory constraints that could result in population growth or development unforeseen at the time of project approval. Under CEQA, growth is not necessarily considered beneficial, detrimental, or of little significance to the environment.

5.4.1 Direct Employment Growth

The proposed Project does not include any housing so there would not be an increase in the number of residents residing in the project area as a result of the Project. The Project would result in an expansion of the hospital facilities at the UCSF BCH Oakland campus site and there would be an associated increase in the number of persons employed at the hospital. The proposed Project would add an estimated 135 staff, vendors and volunteers, 32 physicians/faculty, and 16 students and fellows for a total of 183 employees to the UCSF BCH Oakland campus site by Project buildout.

Implementation of the proposed Project would increase the number of employees in Oakland and the broader Bay Area. However, the employment growth would not be substantial in comparison to the growth that is projected and planned for Alameda County (315,000) and the Bay Area counties (1.4 million) between 2015 and 2050 (ABAG, 2021).

The potential physical environmental impacts associated with the employment growth at the UCSF BCH Oakland campus site as a result of the proposed Project are evaluated in the environmental analysis sections of this EIR (e.g., Section 4.1, *Air Quality*; Section 4.4, *Energy*; Section 4.11, *Transportation*; and Section 4.12, *Utilities and Service Systems*). As the analysis in those sections shows, the environmental impact of the projected employment growth would be less than significant or less than significant with mitigation.

5.4.2 Indirect Economic Growth

In addition to the employment growth generated by the proposed Project, additional local employment could be generated through what is commonly referred to as the "multiplier effect." The multiplier effect refers to the secondary economic effects caused by spending of the project-related employees.

The multiplier effect also calculates induced employment. Induced employment follows the economic effect of employment beyond the expenditures of the project employees to include jobs created by the stream of goods and services necessary to construct or operate the proposed Project. For example, when a manufacturer buys products or sells products, the employment associated with those inputs or outputs is considered induced employment. As an additional example, when an employee associated with the Project goes out to lunch, the person who serves the employee lunch holds a job that was indirectly caused by the proposed Project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered induced.

The multiplier effect tends to be greater in regions with larger diverse economies (such as the Bay Area) due to a decrease in the requirement to import goods and services from outside the region, as compared to the effects of spending in smaller economies where goods and services must be imported from elsewhere.

The number of indirect and induced jobs generated by an institution is commonly calculated by applying a ratio, or job multiplier, to the number of jobs provided directly by the institution. As noted above, the projected increase in jobs under the proposed Project is approximately 183 staff and faculty positions.[90] Using a job multiplier of 0.73[91], at full implementation of the NHB Project, an additional 134 jobs could be indirectly caused by or induced in the Bay Area by the proposed Project. This indirect and induced employment growth is also well within the job growth projections for the Bay Area in *Plan Bay Area 2050.*

[90] Staff, vendors and volunteers; faculty physicians, and students and fellows.

[91] Multipliers identified in studies of other college campuses range from 0.33 to 1.36 (Stanford, 2017). At 0.73 indirect and induced workers per University of San Francisco (USF) worker, the study conducted for USF may provide the best "order of magnitude" estimate for regional impacts of the proposed Project, as it is in the same Bay Area region with the same range of available local goods and services.

5.4.3 Environmental Effects of Indirectly Caused and Induced Growth

The residence locations of people working in indirect and induced jobs is unknown. It would be speculative to state where such workers would reside or be employed in the Bay Area (or beyond), or to determine any associated environmental effects.

Employment growth induced by the proposed Project would likely affect the greater Bay Area region. As noted above, the precise nature, location, and magnitude of effects of indirect and induced growth cannot be determined. However, the proposed Project would likely have a very small increase in overall demand for housing, commercial and industrial space, and associated infrastructure in the region. Potential effects could include: increased traffic congestion; increased air pollutant emissions; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing. An sufficient increase in housing demand in the Bay Area region could also require governmental services including, but not limited to, schools, libraries, and parks to serve new commercial and residential development.

Given the limited scale of the proposed Project, indirect and induced employment and population growth would not contribute to the loss of open space through conversion of undeveloped land to urban uses for housing, commercial space, and infrastructure.

5.4.4 Removal of Obstacles to Growth

The elimination of physical obstacles to growth is considered a growth-inducing effect. The proposed Project would result in additional hospital facilities on the UCSF BCH Oakland campus site. The proposed Project would include infrastructure improvements designed to only accommodate growth associated with the Project. Proposed improvements include underground pipelines, electrical transmission lines, water supply infrastructure, roadway modifications, pathways, and other similar types of improvements to serve the Project. The infrastructure improvements undertaken would be sized and designed to serve the planned development on the campus site and would not be designed to support growth outside the UCSF BCH Oakland campus site, and thus the proposed Project would not remove an obstacle to growth in the City of Oakland.

5.5 References

Association of Bay Area Governments (ABAG), 2021. Forecasts & Projections 2050. Available: https://abag.ca.gov/our-work/land-use/forecasts-projections. Accessed: October 20, 2023.

Stanford University, 2017. *2018 General Use Permit Application*, Technical Data to Address Population and Associated Housing Demand, July 25, 2017.

CHAPTER 6
Alternatives

6.1 Introduction

An EIR must describe a range of reasonable alternatives to the proposed project that might feasibly accomplish most of the basic objectives of the proposed project and can avoid or substantially lessen one or more of the project's significant effects. This chapter describes the CEQA requirements for an alternatives analysis, presents the proposed NHB Project objectives, summarizes the significant effects of the proposed Project that cannot be avoided or reduced to a less than significant level with mitigation, and describes the alternatives, including those that were considered but dismissed from further evaluation. The chapter then presents the comparative effects of each of the alternatives relative to those of the proposed Project and evaluates the ability of the alternatives to meet most of the project objectives. As required under Section 15126.6(e) of the State *CEQA Guidelines*, an environmentally superior alternative is identified at the end of this chapter.

6.1.1 CEQA Requirements for Alternatives Analysis

CEQA requires that an EIR describe and evaluate a range of reasonable alternatives to the proposed project, or to the location of the proposed project, and evaluate the comparative merits of the alternatives (*CEQA Guidelines* Section 15126.6(a), (d)). The "range of alternatives" is governed by the "rule of reason," which requires the EIR to describe and consider only those alternatives necessary to permit informed public participation, and an informed and reasoned choice by the decision-making body (*CEQA Guidelines* Section 15126.6(a), (f)).

The range of alternatives must include alternatives that could feasibly attain most of the basic objectives of the project and could avoid or substantially lessen any of the significant effects of the project (*CEQA Guidelines* Section 15126.6(a)-(c)). CEQA generally defines "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. In addition, the following may be taken into consideration when assessing the feasibility of alternatives: site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and the ability of the proponent to attain site control (*CEQA Guidelines* Section 15126.6(f)(1)). If the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR (*CEQA Guidelines* Section 15126.6(f)(2)(B)).

The description or evaluation of alternatives does not need to be exhaustive, and an EIR need not consider alternatives for which the effects cannot be reasonably determined and for which implementation is remote or speculative. An EIR need not describe or evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project (*CEQA Guidelines* Section 15126.6(d)).

The "no project" alternative must be evaluated. This analysis is required to include a discussion of the continuation of the existing conditions, as well as what could be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services (*CEQA Guidelines* Section 15126.6(e)(2)). When the project is the revision of an existing land use plan, the no project alternative will be the continuation of the existing plan into the future.

CEQA also requires that an environmentally superior alternative be selected from among the alternatives analyzed in the EIR. The environmentally superior alternative is the alternative with the fewest or least severe adverse environmental impacts. If the "no project" alternative is the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives (*CEQA Guidelines* Section 15126.6(e)(2)).

6.2 Alternatives Selection

As noted above, the selection of alternatives for consideration in an EIR depends on whether the possible alternative can feasibly meet most of the basic objectives of the project and avoid or substantially lessen any significant impacts of the project. The project objectives presented in Chapter 3, *Project Description,* and the significant unavoidable impacts of the proposed Project identified in Chapter 4, *Environmental Setting, Impact, and Mitigation Measures* are listed below.

6.2.1 Project Objectives

The key objectives for the proposed NHB Project are as follows:

Fundamental Objectives

- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as a premier children's hospital, educational, research, and clinical institution.
- Modernize the aging UCSF BCH Oakland campus to maintain and enhance its place as nationally recognized teaching hospital, providing accredited residency education in general pediatrics and fellowship education to pediatricians seeking subspecialty training.
- Modernize the UCSF BCH Oakland campus to address challenges that affect the long-term viability of the institution, such as aged, functionally obsolete, undersized and inefficient facilities.
- Meet seismic requirements of California Senate Bill 1953 by redeveloping a new, seismically-sound, state-of-the-art and sustainable inpatient facility.
- Maintain UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center with continued emergency service access via helicopter.

- Address the existing shortage of capacity and access to pediatric care by increasing the number of inpatient beds at UCSF BCH Oakland.
- Address the current unmet need for adolescent mental health care and services by providing behavioral health inpatient beds that meet code requirements, including required outdoor space, at UCSF BCH Oakland and providing such services.
- Address the current unmet need for ED patient services by increasing the size of the ED.
- Site and develop a new inpatient facility in a way that optimizes operational activities and maintains critical adjacencies with other clinical facilities on the site, such as the existing Patient Tower, the Ford D&T Center and Cardiac Catheterization Lab, and critical support functions.
- Develop a new inpatient facility that is optimized in its spatial layout for functionality in terms of workflow and wayfinding, and efficiency so as not to increase operational costs.

Development Objectives

- Develop a new inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards of contemporary hospitals, such as construction codes, sizes of operating rooms, ratio of operating rooms to pre-and post-recovery areas, space for privacy and infection control issues.
- Develop a new inpatient facility that has sufficient space to accommodate patient satisfaction requirements of contemporary hospitals such as private patient rooms, patient rooms of sufficient size to accommodate family overnight stays, and outdoor space for children.
- Develop a new inpatient facility that has sufficient space to accommodate modern technology, including telemedicine, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment, all requiring substantial infrastructure and space.
- Optimize the existing Patient Tower by making non-structural performance improvements and renovating it to continue to provide inpatient beds and necessary clinical and support functions.
- Develop a parking structure to meet the needs of essential healthcare providers and other staff, at a location that provides direct and safe access to patient facilities.
- Develop parking facilities to address patient parking needs, in particular ED patient parking.
- Maintain existing hospital operations throughout construction.

6.2.2 Summary of Significant and Unavoidable Environmental Effects of the Proposed NHB Project

As described above, alternatives to the proposed Project must substantially lessen or avoid one or more of the significant project-level and/or cumulative environmental impacts. **Table 6-1**, below, summarizes the significant and unavoidable impacts identified in Chapter 4 of this EIR.

TABLE 6-1
SIGNIFICANT AND UNAVOIDABLE IMPACTS OF THE PROPOSED NHB PROJECT

Impacts
Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity could result in significant cumulative health risk impacts.
Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources.
Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

6.3 Alternatives Selected for Further Evaluation

The alternatives identified for detailed evaluation and designed to inform public participation and reasoned choice by decision-makers are:

Alternative 1: No Project

Alternative 2: New Hospital Project per the 2015 CHRCO CMP

Alternative 3: Modified Hospital Design Project

Alternative 4: Reduced Project

Table 6-2, below, provides a summary comparison of the principal differences in characteristics of the proposed Project and the alternatives, and the sections that follow describe each alternative, how its impacts would differ from those of the Project, and whether the alternative would or would not achieve most of the Project's objectives.

6.3.1 Alternative 1: No Project

Description

The No Project Alternative assumes that the proposed Project, which includes a 332,523 gross square foot (gsf) new hospital building with a rooftop helistop, a 96,912 gsf new parking structure, 6,100 gsf site support building, 30,000 gsf of building renovations, and related improvements, would not be constructed, and none of the existing buildings on the Project site would be demolished. State law (SB 1953) requires that the existing inpatient facilities that are non-compliant (A/B and B/C Wings) undergo seismic retrofit if their use as inpatient facilities is to be continued. UCSF has determined that the A/B and B/C Wings cannot be retrofitted to accommodate patient care in a manner that would meet the California Department of Health Care Access and Information (HCAI) seismic classifications. As indicated in Chapter 3, *Project Description*, under *Project Need*, UCSF has concluded that the A/B and B/C Wings are obsolete and cannot reasonably be retrofitted and renovated to meet modern requirements for a clinical care facility.

TABLE 6-2
COMPARISON SUMMARY OF PROPOSED NHB PROJECT AND ALTERNATIVES CHARACTERISTICS

	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative4: Reduced Project
NHB Project Development					
New Building Construction					
New Hospital Building	332,523 gsf 8 stories	0 gsf	5-story Patient Pavilion (101,000 gsf) and 5-story Link Building (43,500 gsf)	332,523 gsf 11 stories	220,000 gsf 6 stories
Parking Structure	96,912 gsf 4 stories up-to-270 spaces	0 gsf	114,900 gsf 4 stories 334 spaces	96,912 gsf 4 stories up-to-270 spaces	64,600 gsf 3 stories up-to-178 spaces
Site Support Building	6,100 gsf	0 gsf	0 gsf	6,100 gsf	4,070 gsf
Total Inpatient Beds on Project Site	210 beds	177 beds	210 beds	210 beds	199 beds
Building Demolition	110,697 gsf	0 gsf	57,575 gsf	65,520 gsf	110,697 gsf
Retain A/B Wing	No	Yes	Yes	Yes	No
Building Renovation	30,000 gsf	0 gsf	21,542 gsf	75,177 gsf	30,000 gsf
Revisions to UCSF 2014 LRDP					
Include BCH Oakland Campus Site in LRDP	Yes	No	Yes	Yes	Yes

It is therefore assumed that under the No Project alternative, seismic retrofit in compliance with SB 1953 would not be completed and the existing acute care functions currently located in A/B and B/C Wings would be relocated elsewhere on the campus site or off-site. Further, UCSF has determined that it would also not be cost effective to complete a seismic retrofit of A/B and B/C Wings in compliance with the UC *Seismic Safety Policy*. Therefore, such a seismic retrofit would not occur, and the spaces would not be backfilled with non-acute care uses. Due to the potential for these buildings to experience structural damage as a result of a major earthquake, the vacated buildings would be modified to structurally separate from them from adjoining buildings and would be mothballed. It is assumed any minor exterior modifications to the A/B Wing would be conducted in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards), as applicable.

Comparison of Effects of No Project Alternative to the Proposed NHB Project

Air Quality

No new construction or demolition activities or operations associated with the proposed Project development would occur on the Project site under this alternative. Consequently, this alternative would avoid significant and unavoidable cumulative health risk impacts associated with the emission of toxic air contaminants (TACs) during the construction and operation of the Project. Furthermore, this alternative would avoid the less than significant project and cumulative impacts of the Project related to the generation of criteria pollutants during construction and operation. For the same reasons, this alternative would also avoid less than significant project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations during construction and operation of the Project. Finally, the less than significant impact associated with the Project's conflict with or obstruction of implementation of the *2017 Clean Air Plan* would not occur under this alternative.

Biological Resources

No new construction or demolition activities associated with the proposed Project development would occur on the Project site under this alternative. As a result, this alternative would avoid the significant but mitigable project and cumulative construction-related effects on special-status plant and wildlife species associated with the Project. In addition, this alternative would avoid the significant but mitigable project and cumulative impacts associated with potential resident and migrating bird strikes during operation identified for the Project. Finally, less than significant effects associated with damage to or removal of protected trees under the Project would also not occur under this alternative.

Cultural Resources, including Tribal Cultural Resources

No building demolition activities associated with the proposed Project would occur at the Project site under this alternative. Accordingly, this alternative would avoid the significant and unavoidable project impact associated with the demolition of the A/B Wing. Furthermore, since any minor exterior modifications to the A/B Wing to separate the building from the adjoining buildings would be conducted in compliance with the Secretary of the Interior's Standards, these modifications would have a less than significant impact on this historic resource. Furthermore, this alternative would avoid the less than significant project impact on the 55th and Dover Residential District. Since no ground disturbing activities associated with the construction of the proposed Project would occur at the Project site under this alternative, it would avoid the significant but mitigable project and cumulative impacts to previously unknown archaeological resources, human remains, and tribal cultural resources that would occur under the Project.

Energy

No construction or demolition activities associated with the proposed Project would occur at the Project site under this alternative. As a result, no energy would be consumed during construction under this alternative. In addition, no increase in building space and related population increases associated with the proposed Project would occur at the Project site under this alternative. Consequently, this alternative would not result in an increase in operational energy use. As such, the alternative would avoid the less than significant project and cumulative Project impacts associated with the consumption of energy resources, and a conflict with a state or local plan for renewable energy or energy efficiency.

Geology and Soils

No ground disturbing activities, or new building construction associated with the proposed Project, would occur at the Project site under this alternative. As a result, this alternative would avoid the significant but mitigable project and cumulative impacts to previously unknown paleontological resources. In addition, this alternative would avoid the less than significant project and cumulative impacts associated with strong seismic ground shaking, liquefaction or otherwise unstable soils, expansive soils, and erosion for the same reason.

Greenhouse Gas Emissions

No new construction or demolition activities associated with the proposed Project would occur at the Project site under this alternative. In addition, no increase in building space and related population and traffic increases associated with the proposed Project would occur at the Project site under this alternative. Accordingly, this alternative would avoid the less than significant greenhouse gas (GHG) emissions impact of the Project. Furthermore, this alternative would not conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions for the same reasons.

Hazards and Hazardous Materials

No new construction or demolition activities associated with the proposed Project would occur at the Project site under this alternative. In addition, this alternative would not increase building space on the Project site. Consequently, this alternative would avoid the significant but mitigable project and cumulative impacts associated with the potential for encountering soil and groundwater contamination onsite during construction. In addition, this alternative would avoid the less than significant project and cumulative impacts associated with routine transport, use, or disposal of hazardous materials; potential accidental release of hazardous materials; and emission and handling of hazardous materials within one-quarter mile of an existing or proposed school for the same reasons.

Hydrology and Water Quality

No new construction or ground disturbing activities associated with the proposed Project would occur at the Project site under this alternative. In addition, this alternative would not result in an increase in impervious surface on the Project site, or operational changes in the amount or quality of stormwater runoff at the Project site. Accordingly, this alternative would avoid the significant but mitigable project and cumulative impacts related to the potential to violate water quality standards or waste discharge discharges requirements and to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. In addition, this alternative would avoid less than significant project and cumulative impacts related to sustainable groundwater management, the alteration of drainage patterns which could lead to flooding, erosion and siltation, and an exceedance of the capacity of stormwater drainage systems, and polluted runoff for the same reasons.

Land Use and Planning

No new development associated with the proposed Project would occur at the Project site under this alternative, and furthermore, this alternative does not propose amendments to the UCSF 2014 LRDP that would affect land use. As a result, the less than significant project and cumulative impacts associated with a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, or incompatibility with adjacent land uses, would not occur under this alternative.

Noise and Vibration

No new construction or demolition activities associated with the proposed Project would occur at the Project site under this alternative. Consequently, this alternative would avoid the significant and unavoidable project impact associated with construction noise that would occur under the Project, the less than significant cumulative construction noise impact, as well as the significant but mitigable project and cumulative impacts associated with construction vibration that would occur. Furthermore, no increase in operational permanent noise sources, such as noise from stationary sources, loading docks, ambulances, and a relocated helistop, would occur at the Project site under this alternative. As a result, this alternative would avoid the less than significant project and cumulative impacts related to these sources that would occur under the Project. Finally, no Project-related increase in operational traffic would occur under this alternative, and thus this alternative would avoid the less than significant project and cumulative impacts related to a permanent increase in ambient noise levels from traffic that would occur under the Project.

Transportation

This alternative would not result in additional building space or an increase in population on the Project site, and thus there would be no associated increase in vehicular and non-vehicular trips to the Project site. As a result, this alternative would avoid significant but mitigable temporary project and cumulative impacts during construction of the Project. Furthermore, the less than significant project and cumulative impacts associated with a conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, would not occur under this alternative. This alternative would also not generate additional vehicle miles traveled (VMT), and thus, the less than significant project and cumulative impacts associated with VMT would not occur. Finally, potential less than significant project and cumulative impacts associated with a substantial increase in hazards due to a geometric design feature or incompatible uses and inadequate emergency access would not occur under this alternative.

Utilities and Service Systems

This alternative would not result in additional building space or an increase in population on the Project site, and thus there would be no associated increase in utility demand at the Project site. Accordingly, this alternative would avoid the less than significant project and cumulative impacts that would occur under the Project associated with the construction of new or expanded utility infrastructure, the availability of water supply during normal, dry and multiple dry years, the availability of wastewater treatment capacity; and the availability of solid waste disposal capacity and compliance with federal, state and local statutes and regulations related to solid waste.

Relationship of No Project Alternative to Project Objectives

This alternative would not achieve any of the fundamental objectives for the proposed Project, including modernizing the aging UCSF BCH Oakland campus to maintain and enhance its place as a premier children's hospital, educational, research, and clinical institution, and as a nationally recognized teaching hospital; and address challenges that affect the long-term viability of the institution. Furthermore, this alternative would not serve to meet the fundamental objectives of meeting State seismic requirements for hospitals (SB 1953); maintaining UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center; addressing the existing shortage of capacity and access to pediatric care; addressing the current unmet need for adolescent mental health care and services; providing inpatient beds and associated facilities for behavioral health services; optimizing operational activities and maintaining critical adjacencies with other clinical facilities on the site, and optimizing spatial layout to enhance functionality and efficiency.

Similarly, this alternative would not achieve any of the proposed Project's development objectives for a new inpatient facility, including developing a new inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards, and patient satisfaction requirements of, contemporary hospitals; and has sufficient space to accommodates modern technology.

Furthermore, this alternative would not meet the Project's development objectives to develop spaces for clinical and translational research and learning in or adjacent to clinical areas where patients are located. This alternative would also not optimize the existing Patient Tower by making non-structural performance improvements and renovating it to continue to provide inpatient beds and necessary clinical and support functions. Lastly, this alternative would not develop a parking structure to meet the parking needs of essential healthcare providers, other staff, or patients and visitors.

6.3.2 Alternative 2: New Hospital Project per the 2015 CHRCO CMP

Description

This alternative represents a hospital project on the Project site that would be similar to that previously proposed to be developed as part of the 2015 Children's Hospital and Research Center Oakland (CHRCO) Campus Master Plan (CMP) and analyzed in the CHRCO CMP Project FEIR for its environmental impacts. Under this alternative, the same total number of inpatient beds (210) would be provided at the campus site as under the Project. However, less existing building space would be demolished, and a smaller amount of new building space would be constructed, under this alternative compared to the Project. Notably, this alternative would not demolish the A/B Wing that is proposed to be demolished under the Project, although, as indicated in Chapter 3, *Project Description*, under *Project Need*, UCSF has concluded that the A/B and B/C Wings are obsolete and cannot reasonably be retrofitted and renovated to meet modern requirements for a clinical care facility nor used for non-acute care services.

New building construction under this alternative would include a 5-story Patient Pavilion/ Hospital (101,000 gsf), a 5-story Link Building (43,500 gsf) plus rooftop helistop, and a 4-story parking structure (114,900 gsf) for a total of 259,400 gsf (a reduction in new building construction of 176,185 gsf compared to the proposed Project, or approximately 40 percent less). As planned under the 2015 CHRCO CMP, the Patient Pavilion would provide space for acute care services, including medical/surgical beds and associated family and patient amenities. The Link Building would provide space for material management, facility planning, family resources, and other support departments.

The height of the 5-story Patient Pavilion under this alternative would be approximately 68.5 feet above ground level (agl) to the top of the roof, and approximately 105 feet to the top of the elevator machine room roof (versus 118 feet and 170.5 feet, respectively, for the proposed 8-story new hospital building under the Project). The height of the 5-story Link Building under this alternative would be approximately 90 feet agl as measured to the helistop platform. The height of the parking structure under this alternative would be similar to that of the parking structure proposed under the Project.

The existing A/B Wing and loading dock, both proposed to be removed under the Project, would be retained under this alternative. Due to the potential for the A/B Wing to experience structural damage as a result of a major earthquake, the vacated building would be modified to structurally separate it from adjoining buildings and would be mothballed. It is assumed any minor exterior modifications to the A/B Wing would be conducted in compliance with the Secretary of the Interior's Standards, as applicable.

Demolition under this alternative would include the B/C Wing, Bruce Lyons Memorial Research Laboratory and Bruce Lyon Addition, remaining on-site trailers, and existing helistop structure, and relocation off-site of the MRI trailer, which would together amount to 64,883 gsf of space. This would be approximately 41 percent less than the 110,697 gsf of existing building space and structures that would be demolished or relocated under the proposed Project.

Existing building renovation assumed under this alternative would include the existing Emergency Department and other clinical space, and amount to approximately 21,500 gsf, which is less than the 30,000 gsf of existing building renovation proposed under the Project.

Comparison of Effects of New Hospital Project per 2015 CHRCO CMP Alternative to the Proposed NHB Project

Air Quality

This alternative would result in less new building space and less demolition on the Project site compared to the Project, and thus less construction activity. Furthermore, as this alternative would add less new building space and would continue the use of existing buildings, operational activity associated with this alternative would be expected to be about same or less than under the proposed Project. As a result, lower emissions of criteria pollutants and TACs would be generated under this alternative during construction than under the proposed Project and similar or lower emissions of criteria pollutants and TACs would be generated under this alternative during operation than under the Project. Therefore, the proposed Project's less than significant project and/or cumulative impacts related to construction–generated criteria pollutant emissions would be reduced under this alternative given the reduction in the emission of criteria pollutants. Operational emissions impacts would be comparable. Similarly, less than significant project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations during construction and operation of the Project would be reduced under this alternative given the reduction in the emissions of TACs. Finally, the less than significant impact associated with conflict with or obstruction of implementation of the *2017 Clean Air Plan* would be the same or less than that under the proposed Project. All of these impacts of the alternative are consistent with the conclusions in the CHRCO CMP Project FEIR.

However, unlike the conclusion reached in the CHRCO CMP Project FEIR, significant and unavoidable cumulative health risk impacts associated with the construction and operation of the Project would still occur under this alternative as the reduction in emissions of TACs under this alternative would not be enough to reduce the impact to a less-than-significant level and the same mitigation measures would still be required.

Biological Resources

This alternative would result in less construction and a smaller increase in building space on the Project site compared to the proposed Project. As a result, overall, the extent of construction and development-related impacts to biological resources under this alternative would be less than that associated with the Project, and thus, like the proposed Project, this alternative would have the same significant but mitigable project and/or cumulative construction-related effects on special-status plant and wildlife species. Furthermore, the potential for resident and migrating bird strikes from new buildings would be incrementally less under this alternative as two of the proposed structures would be shorter. As a result, project and/or cumulative impacts associated with potential resident and migrating bird strikes would be similarly mitigated to less than significant with implementation of bird safe building treatment measures. Finally, as with the proposed Project, project and/or cumulative impacts related to damage to, or removal of, protected trees would also remain less than significant under this alternative.

Cultural Resources, including Tribal Cultural Resources

This alternative would not result in the loss of historical resources eligible for listing in the National Register, California Register, and/or as a City of Oakland Landmark or Designated Historic Property because the A/B Wing would not be demolished under this alternative. As a result, this alternative would avoid the significant and unavoidable project impact associated with the demolition of this structure under the Project. Furthermore, since any minor exterior modifications to the A/B Wing to separate it from the adjoining buildings would be conducted in compliance with the Secretary of the Interior's Standards, these modifications would have a less than significant impact on this historic resource. This alternative would also result in the same less than significant impacts on the 55th and Dover Residential District because the alternative would be implemented in a manner consistent with the Secretary of the Interior's Standards for Rehabilitation. However, there remains the potential for construction of this alternative to result in a significant impact to a historical resource (A/B Wing) resulting from construction-related vibrations within close proximity to the A/B Wing. This construction vibration impact would be mitigated by the implementation of a mitigation measure as discussed under *Noise and Vibration*, below, that would ensure that vibrations associated with the construction of the alternative would be within acceptable levels, and the A/B Wing would not be adversely affected.

Furthermore, the building footprint under this alternative would be somewhat smaller, and thus the amount of ground disturbance, including excavation, under this alternative would be less compared to that which would occur for the Project. Consequently, there would be less potential to uncover previously unknown archaeological resources and human remains. This alternative would also be required to implement the same Project mitigation measures that are designed to protect archaeological resources by requiring intensive pre-construction study and construction-period monitoring, and establishing steps to take if unknown archaeological resources or humans remains are found. These mitigations would support a conclusion that potential project and/or cumulative impacts to archaeological resources and human remains would be reduced to a less-than-significant level. Therefore, like the proposed Project, with the same mitigation, this alternative would result in the same less-than-significant impacts to unknown archaeological resources and human remains.

Finally, the impact related to the potential to uncover undiscovered or buried tribal cultural resources under this alternative would be less than significant for similar reasons (smaller footprint). Implementation of the same mitigation measures that are designed to protect archaeological resources and human remains would also reduce potential project and/or cumulative impacts to tribal cultural resources to a less-than-significant level.

Energy

This alternative would result in less new building space and demolition on the Project site compared to the Project, and thus less construction activity. Furthermore, as this alternative would involve less new building space, operational activity associated with this alternative would be expected to be the same or less than under the proposed Project. As a result, less energy would be consumed during the construction of this alternative than under the proposed Project and the same amount or less energy would be consumed during operation of this alternative than under the proposed Project. Accordingly, as with the proposed Project, less than significant impacts with respect to the consumption of energy resources during construction and operation and conflicts with state or local plan for renewable energy or energy efficiency would remain the same or would be reduced under this alternative.

Geology and Soils

Given that the building footprint under this alternative would be somewhat smaller than under the proposed Project, this alternative would result in less ground disturbance during construction. As a result, as with the proposed Project, potential project and/or cumulative impacts related to effects of seismic ground shaking, liquefaction or unstable soils, expansive soils, and erosion from ground disturbance during construction would remain less than significant under this alternative. Furthermore, there would be less potential to uncover previously unknown paleontological resources, and as under the proposed Project and with the same mitigation, and like the conclusion reached in the CHRCO CMP Project FEIR, project and/or cumulative impacts related to previously unknown paleontological resources would remain less than significant.

Greenhouse Gas Emissions

This alternative would result in less new building space and demolition on the Project site compared to the Project, and thus less construction activity. Furthermore, as this alternative would involve less new building space, operational activity associated with this alternative would be expected to be the same or less than under the proposed Project. As a result, lower GHG emissions would be generated during the construction of this alternative than under the proposed Project and similar or lower GHG emissions would be generated during the operation of this alternative than under the proposed Project. As with the proposed Project, the GHG impact of this alternative would be less than significant provided the new hospital and garage include no natural gas infrastructure; are energy efficient; and include an adequate number of electric vehicle charging facilities in compliance with CalGreen. Furthermore, the less than significant impact related to a conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions would also be the same or somewhat reduced under this alternative for the same reason. The less than significant impact conclusions related to this alternative are consistent with the conclusions reached in the CHRCO CMP Project FEIR.

Hazards and Hazardous Materials

This alternative would result in a smaller increase in new building space on the Project site, thus resulting in a smaller increase in hazardous materials use on the site than would occur under the proposed Project. As a result, project and/or cumulative impacts associated with the routine transport, use, or disposal of hazardous materials; potential accidental release of hazardous materials; and emitting and handling of hazardous materials within one-quarter mile of an existing or proposed school, would remain less than significant under this alternative, as with the proposed Project. As the amount of ground disturbance under this alternative would be less due to a smaller footprint, there would be less potential for risks from encountering legacy contamination in soil and groundwater. As a result, as with the proposed Project and with the same mitigation, project and/or cumulative impacts related to contamination in soil and groundwater would be less than significant under this alternative.

Hydrology and Water Quality

This alternative would have a smaller building footprint than the proposed Project. However, the total area that would be graded on the Project site under this alternative would be the same as that under the proposed Project. As a result, impacts related to violation water quality standards or waste discharge requirements and conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan under this alternative would be the same as under the proposed Project, and the same mitigation measures would be required. Furthermore, for the same reasons, project and/or cumulative impacts related to sustainable groundwater management, alternation of drainage patterns, which could lead to flooding, erosion, and siltation, and an exceedance of the capacity of stormwater drainage systems, and polluted runoff would also be less than significant under this alternative, as under the proposed Project.

Land Use and Planning

This alternative would result in a smaller increase in new building space on the Project site compared to the Project. As a result, as with the proposed Project, this alternative would also result in less than significant project and/or cumulative impacts with respect to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, and incompatibility with adjacent land uses.

Noise and Vibration

This alternative would result in less construction and a smaller increase in new building space on the Project site compared to the proposed Project. As a result, the overall extent of construction and development-related impacts related to stationary noise sources under this alternative would be less than that associated with the Project. However, the overall extent of development-related impacts related to traffic noise would be the same as the proposed Project because the same number of new beds would be provided under this alternative as under the proposed Project.

As with the proposed Project, the project impact associated with construction noise would remain significant and unavoidable under this alternative, even with the implementation of the same mitigation measures, as it is assumed that work beyond the 7:00 PM daytime construction workday restriction would similarly be occasionally required. However, unlike the Project, since the A/B Wing would be retained under this alternative, construction of this alternative would have the potential to result in a significant impact to a historical resource, from construction-related vibrations within proximity to the A/B Wing. This construction vibration impact would be mitigated by the implementation of a vibration analysis that would establish thresholds of levels of vibration that would avoid damage to the historical building and identify the means and methods of construction that would be used to maintain acceptable vibration levels. This mitigation would include retaining a historic preservation architect and structural engineer to establish baseline conditions of the building; monitoring of the condition of the building during construction and use of corrective measures if needed to prevent damage to the building, and establishment of a training program for construction workers emphasizing the protection of historic resources. Implementation of this mitigation would ensure construction vibration levels at this historic resource would be within acceptable levels, and the impact would be less than significant.

Furthermore, as this alternative would include a smaller New Hospital, it would result in fewer and/or less intense new permanent noise sources, such as noise from stationary sources, loading docks, ambulances, and a relocated helistop. With less development, the less than significant project and/or cumulative impacts related to permanent increases in ambient noise levels would be less than with the Project.

While this alternative would result in less new building space on the Project site compared to the Project, the population and associated generation of vehicular and non-vehicular trips is expected to be the same as with the proposed Project as the same number of new beds would be provided under this alternative. As a result, project and/or cumulative impacts of this alternative related to a permanent increase in ambient noise levels due to traffic noise would remain less than significant.

Transportation

Again, while this alternative would result in less new building space on the Project site compared to the Project, the population and associated generation of vehicular and non-vehicular trips would be the same as with the proposed Project as the same number of new beds would be provided. Consequently, as with the proposed Project, the project and/or cumulative transportation impacts associated with a conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities would remain less than significant under this alternative. Like the proposed Project, the alternative would meet two of the City of Oakland's screening criteria (Low VMT Areas and Near Transit Stations), and therefore, would have a less than significant impact on VMT. Furthermore, the significant but mitigable temporary project and/or cumulative impacts during construction would also be the same as under the proposed Project for the same reasons. Finally, as with the proposed Project, less than significant project and/or cumulative impacts associated with a substantial increase in hazards due to a geometric design feature or incompatible uses and inadequate emergency access would be the same under this alternative.

Utilities and Service Systems

While this alternative would result in less new building space on the Project site compared to the Project, the population and associated demand for utilities would be the same as with the proposed Project as the same number of new beds would be provided. Accordingly, as with the proposed Project, the less than significant project and/or cumulative utility impacts, including those associated with construction of new or expanded utility infrastructure; the availability of water supply during normal, dry and multiple dry years; the availability of wastewater treatment capacity; the availability of solid waste disposal capacity; and compliance with federal, state and local statutes and regulations related to solid waste, would remain the same.

Relationship of New Hospital Project per the 2015 CHRCO CMP Alternative to Project Objectives

This alternative would achieve some fundamental objectives, such as meeting the State seismic requirements for new hospitals (SB 1953) and maintaining the hospital's designation as the Bay Area's Level I pediatric trauma center with continued emergency service access via helicopter.

However, because space requirements for modern hospitals have increased since approval of the 2015 CHRCO CMP, this alternative would not fully meet many of the other fundamental objectives of the proposed Project, including the need to modernize the campus to address challenges of undersized and inefficient facilities that affect the long-term viability of the institution; address the existing shortage of capacity and access to pediatric care; address the current unmet demand for adolescent mental health care services; and adequately support ED patient volumes. It would not meet the objective of developing a new hospital that is optimized in its spatial layout to enhance functionality in terms of workflow and wayfinding, and efficiency so as to not increase operational costs, because the new hospital would not be connected to the Ford D&T Building, one of the two existing inpatient facilities.

With respect to the development objectives, this alternative would optimize the existing Patient Tower by making non-structural performance improvements and renovating it to continue to provide inpatient beds and necessary clinical and support functions; and develop a parking structure to meet the parking needs of essential healthcare providers, other staff, or patients and visitors. However, this alternative would not develop a new inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards and patient satisfaction requirements of contemporary hospitals; and accommodate modern technology.

6.3.3 Alternative 3: Modified Hospital Design Project

Description

Under this alternative, the proposed new hospital building would be redesigned, such that the A/B Wing would be retained, although, as indicated in Chapter 3, *Project Description*, under *Project Need*, UCSF has concluded that the A/B and B/C Wings are obsolete and cannot reasonably be retrofitted and renovated to meet modern requirements for a clinical care facility nor retrofitted for non-clinical uses. This alternative assumes the same approximate amount of new building space (i.e., 435,585 gsf, when accounting for new hospital building, site support building and parking structure) would be developed on the Project site. However, because the area occupied by the A/B Wing would not be used for the construction of the new hospital, the height of the proposed new hospital building would be increased to provide the needed hospital space within a smaller building footprint (i.e., an increase of 3 stories), and an additional mechanical floor would be needed for the air handling units (AHU) that would serve the lower levels which would not be able to accommodate air handling equipment due to the narrow building footprint. Due to the smaller footprint of this alternative, two important departments, the Emergency Department and Operating Suite, would be required to be split across two floors. The splitting of these departments across two floors would require duplicate support spaces to be built. In order to provide the duplicate support spaces on two floors for these departments without increasing building size and construction costs, space planned for other programs would need to be reduced under this alternative. The total number of inpatient beds (210) that would be provided at the Project site under this alternative would be the same as under the proposed Project.

Other than the retention of the A/B Wing that would occur under this alternative, all other existing buildings and structures proposed to be demolished (loading dock, B/C Wing, Bruce Lyons Memorial Research Laboratory and Bruce Lyon Addition, on-site trailers, and existing helistop structure) or relocated (MRI Trailer) would be the same as under the proposed Project. Accordingly, the demolition/relocation under this alternative would involve about 65,520 gsf less space than the proposed Project. This would amount to approximately 41 percent less than the 110,697 gsf of existing building space and structures that would be demolished or relocated under the proposed Project.

As noted under the No Project alternative, the A/B Wing cannot be cost effectively retrofitted in compliance with SB 1953 or UC *Seismic Safety Policy* and therefore cannot be used for acute care or non-acute care services. Due to the potential for the A/B Wing to experience structural damage as a result of a major earthquake, the vacated building would be modified to structurally separate it from adjoining buildings and would be mothballed. It is assumed any minor exterior modifications to the A/B Wing would be conducted in compliance with the Secretary of the Interior's Standards, as applicable. With the preservation of the A/B Wing, the total existing building renovation would be approximately 75,000 gsf. All of the other supporting elements (i.e., transportation, infrastructure, and landscape improvements) that would be developed for this alternative are assumed to be similar to that which would occur under the proposed Project.

Comparison of Effects of Modified Hospital Design Alternative to the Proposed NHB Project

Air Quality

This alternative would result in the same amount of new development on the Project site as the Project, and thus emissions of criteria pollutants and TACs during construction and operation under this alternative would remain the same as under the proposed Project. Consequently, significant and unavoidable cumulative health risk impacts associated with the construction and operation of the Project would be the same under this alternative, and the same mitigation measures would be required. Furthermore, less than significant project and/or cumulative impacts of the Project related to construction–generated criteria pollutants and net increases of operational criteria pollutant emissions would be the same. Next, for the same reasons, less than significant project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations during construction and operation of the Project would be the same under this alternative. Finally, the less than significant impact associated with the Project's conflict with or obstruction of implementation of the *2017 Clean Air Plan* would be the same under this alternative.

Biological Resources

Although the building footprint under this alternative would be smaller, the total area that would be graded on the Project site under this alternative would be the same as that under the proposed Project. As a result, project and/or cumulative construction-related effects on plant and wildlife species under this alternative would be the same as that under the proposed Project. However, the New Hospital would be taller under this alternative, and thus the potential for resident and migrating bird strikes would increase under this alternative compared to the Project. However, as under the proposed Project and with the same mitigation, project and/or cumulative impacts associated with potential resident and migrating bird strikes would be reduced to a less than significant level. Finally, similar to the proposed Project, project and/or cumulative impacts related to damage to or removal of protected trees would be less than significant under this alternative.

Cultural Resources, including Tribal Cultural Resources

This alternative would not result in the loss of historical resources eligible for listing in the National Register and/or California Register as the A/B Wing would not be demolished under this alternative. As a result, this alternative would avoid the significant and unavoidable project impact associated with the demolition of this structure under the proposed Project. Furthermore, since any minor exterior modifications to the A/B Wing to separate it from the adjoining buildings would be conducted in compliance with the Secretary of the Interior's Standards, these modifications would have a less than significant impact on this historic resource. In addition, this alternative would also result in the same less than significant impacts on the 55th and Dover Residential District because the alternative would be implemented in a manner consistent with the Secretary of the Interior's Standards for Rehabilitation. Furthermore, the building footprint under this alternative would be smaller, and thus the area that would be excavated for the new hospital under this alternative would be less compared to that which would be excavated for the Project. Accordingly, there would be a reduced potential to uncover previously unknown archaeological resources and human remains. However, the same mitigation would still be required, and project and/or cumulative impacts related to previously unknown archaeological resources and human remains would remain less than significant, as with the proposed Project. Finally, the potential to uncover previously unknown or buried tribal cultural resources under this alternative would be less than that under the proposed Project for similar reasons (smaller footprint), and with the same mitigation, project and/or cumulative impacts related to undiscovered or buried tribal cultural resources would be less than significant, as under the proposed Project.

Energy

This alternative would result in the same amount of new development on the Project site compared to the Project, and thus the same amount of energy would be consumed during construction and operation of this alternative as under the proposed Project. Consequently, less than significant impacts with respect to the consumption of energy resources during construction and operation and conflicts with state or local plan for renewable energy or energy efficiency would remain the same under this alternative, as with the proposed Project.

Geology and Soils

Although the New Hospital under this alternative would have a smaller building footprint than under the proposed Project, and consequently there would be less excavation under this alternative, project and/or cumulative impacts related to seismic ground shaking, liquefaction or unstable soils, expansive soils, and erosion from ground disturbance during construction under this alternative would be comparable to those under the proposed Project. Due to the smaller footprint of the building, there would be less potential to uncover previously unknown paleontological resources. However, the impact would still be potentially significant, and the same mitigation would be required to reduce project and/or cumulative impacts related to previously unknown paleontological resources to a less than significant level.

Greenhouse Gas Emissions

This alternative would result in the same amount of new building space on the Project site compared to the Project, and thus GHG emissions during construction and operation under this alternative would be the same as under the proposed Project. As with the proposed Project, the GHG impact of this alternative would be less than significant provided the new hospital and garage include no natural gas infrastructure; are energy efficient; and include an adequate number of electric vehicle charging facilities in compliance with CalGreen. Furthermore, the less than significant impact related to a conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions would also be the same under this alternative.

Hazards and Hazardous Materials

This alternative would result in the same amount of new building space on the Project site as the Project, thus resulting in the same amounts of hazardous materials being stored and used on the Project site as under proposed Project. As a result, project and/or cumulative impacts associated with the routine transport, use, or disposal of hazardous materials; potential accidental release of hazardous materials; and emitting and handling of hazardous materials within one-quarter mile of an existing or proposed school, would remain less than significant under this alternative. However, the amount of ground excavation under this alternative would be less as the New Hospital would have a smaller footprint. As a result, there would be a reduced potential for exposure to legacy contamination in soil and groundwater. The potential impact would still be significant, and the same mitigation would be required to reduce project and/or cumulative impacts related to legacy contamination to a less than significant level.

Hydrology and Water Quality

This alternative would involve a smaller building footprint than under the proposed Project. However, the total area that would be graded on the Project site under this alternative would be the same as that under the proposed Project. As a result, impacts related to violation of water quality standards or waste discharge requirements and conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan under this alternative would be the same as under the proposed Project and the same mitigation measures would be required. Furthermore, for the same reasons, project and/or cumulative impacts related to sustainable groundwater management, alternation of drainage patterns, which could lead to flooding, erosion, and siltation, and an exceedance of the capacity of stormwater drainage systems, and polluted runoff would also be less than significant under this alternative, as under the proposed Project.

Land Use and Planning

While this alternative would result in a substantially taller structure compared to the Project, the height of the taller facility would remain consistent with UC and Oakland plans and policies as there are no height restrictions that apply to the Project site's zoning designation of Medical Center (S-1). Accordingly, the less than significant project and/or cumulative impacts associated with this alternative with respect to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, and incompatibility with adjacent land uses, would be the same as those under the proposed Project.

Noise and Vibration

This alternative would involve a similar amount of construction as the Project. As a result, the project impact associated with construction noise would also be significant and unavoidable under this alternative. However, unlike the Project, since the A/B Wing would be retained under this alternative, construction of this alternative would have the potential to result in a significant impact to a historical resource resulting from construction-related vibrations within proximity to the A/B Wing. This construction vibration impact would be mitigated by the implementation of a vibration analysis that would establish thresholds of levels of vibration to avoid building damage and identify the means and methods of construction that shall be used to maintain acceptable vibration levels. This mitigation would include retaining a historic preservation architect and structural engineer to establish baseline conditions of the building; monitoring of the condition of the building during construction and use of corrective measures, if needed, to prevent damage to the building, and establishment of a training program for construction workers emphasizing the protection of historic resources. Implementation of this mitigation would ensure potential construction vibration levels experienced at this historic resource would be within acceptable levels, and the impact would be less than significant.

As the New Hospital under this alternative would provide the same amount of building space, it would result in the same number of permanent sources of noise, such as HVAC equipment, loading docks, and ambulances. The location of the helistop at a higher elevation under this alternative than under the Project could result in incrementally less noise associated with helicopter arrival/departures at the helistop, although the number of helicopter operations would be same. Therefore, the alternative would further reduce the less than significant helicopter noise impact of the proposed Project. As with the proposed Project, project and/or cumulative impacts associated with permanent increase in ambient noise levels due to stationary sources are expected to remain less than significant under this alternative.

This alternative would generate the same amount of traffic as the Project as the same amount of building space and patient beds would be provided. As a result, as with the proposed Project, project and/or cumulative impacts of this alternative related to a permanent increase in ambient noise levels due to traffic noise would also be less than significant.

Transportation

This alternative would result in the same amount of new building space on the Project site as the Project, and thus the same amount of population and associated generation of vehicular and non-vehicular trips as under the Project. Consequently, as with the proposed Project, the less than significant project and/or cumulative transportation impacts associated with a conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities would remain less than significant under this alternative. Furthermore, like the proposed Project, the alternative would meet two of the City of Oakland’s screening criteria (Low VMT Areas and Near Transit Stations), and therefore, would have a less than significant impact on VMT. Finally, like the Project, potential less than significant project and/or cumulative impacts associated with a substantial increase in hazards due to a geometric design feature or incompatible uses and inadequate emergency access would be the same under this alternative.

Utilities and Service Systems

This alternative would result in the same amount of new building space on the Project site as the Project, and thus the same increase in population and associated demand for utilities as under the Project. Therefore, this alternative would have the same less than significant project and/or cumulative impacts, including those associated with construction of new or expanded utility infrastructure; the availability of water supply during normal, dry and multiple dry years; the availability of wastewater treatment capacity; the availability of solid waste disposal capacity; and compliance with federal, state and local statutes and regulations related to solid waste.

Relationship of Modified Hospital Design Alternative to Project Objectives

This alternative would achieve many of the fundamental objectives of the proposed Project, such as modernizing the aging UCSF BCH Oakland campus to maintain and enhance its place as a premier children's hospital, educational, research, and clinical institution; maintain its place as a nationally recognized teaching hospital; and address challenges that affect the long-term viability of the institution, since this alternative would meet the space requirements for modern hospital. Furthermore, this alternative would meet the fundamental objectives of meeting State seismic requirements for hospitals (SB 1953); maintain UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center; address the existing shortage of capacity and access to pediatric care; and support current ED patient volumes by increasing the size of the ED. This alternative would not meet the fundamental objective of addressing the current unmet need for code compliant inpatient adolescent mental health care and services. It would also not meet the objective of developing a new hospital that is optimized in its spatial layout to enhance functionality in terms of workflow and wayfinding, and efficiency so as to not increase operational costs, because the new hospital under this alternative would not be directly connected to the Ford D&T Building, one of the two existing inpatient facilities.

This alternative would also not meet several of the development objectives of the proposed Project due to the smaller hospital building floorplate which would result in space inefficiencies. Specifically, as a result of the smaller footprint of this alternative, two important departments would be required to be split across two floors. These departments are the ED (currently slated for Level 1) and the Operating Suite (currently slated for Level 3). The splitting of these departments across two floors would require duplicate support spaces to be built out and staffed on multiple floors, driving up both the cost of construction as well as ongoing costs to operate. More importantly, the splitting of these departments would make them less efficient to operate and not recommended from a patient care and best practice perspective. To provide the duplicate support spaces on two floors for ED and Operating Suite without increasing building size and construction costs, space planned for other programs would need to be reduced under this alternative.

Other departments that would be impacted by the narrowing of the footprint of the new building would be the Neonatal Intensive Care Unit (NICU) (currently slated for Level 4) and Behavior Health (currently slated for Level 5). The proposed NICU floor would need to be reduced to accommodate the narrower floorplate which would result in the need to shift to more shared rooms rather than private rooms. Provision of private rooms for the NICU department is a key project goal and best practice to improve patient outcomes and better support families and staff. Behavioral Health would also be compromised with the narrower footprint, which likely would not enable this floor to include the code required outdoor space as part of its program.

Other impacts of this narrowed footprint would be that the new hospital would likely only be able to connect to the existing Patient Tower at Level 1 rather than Levels 1 through 3 as planned under the proposed Project and direct connections to the Ford D&T Building would not be feasible. This would result in less efficient travel through the facility as a whole for both people and materials and create wayfinding challenges. In fact, hospital operations would become infeasible with the loss of connections on Levels 2 and 3. Therefore, the alternative would not meet the objectives of siting and developing a new inpatient facility in a way that optimizes operational activities with other clinical facilities on the site; developing a new inpatient facility that is optimized in its spatial layout to enhance functionality and efficiency; and developing spaces for clinical and translational research and learning in or adjacent to clinical areas where patients are located.

6.3.4 Alternative 4: Reduced Project

Description

Under this alternative, the proposed Project would be reduced by approximately one-third in development size. As such, it is assumed that the overall size of the new hospital building under this alternative would be reduced by one-third or about 111,000 gsf, to approximately 222,000 gsf (compared to the approximately 333,000 gsf new hospital building proposed under the Project). It is also assumed that the new hospital building under this alternative would maintain approximately the same building footprint as that proposed under the Project, and the new hospital building would be reduced by approximately two floors.

It is further assumed all hospital services with the smaller new hospital building, including inpatient and support, diagnostic and treatment, clinical support and general support services associated with the new hospital building under this alternative would be reduced proportionally. As such, the proposed increase in inpatient beds would be reduced by one-third, amounting to an increase of 22 inpatient beds over existing conditions, for a total of approximately 199 inpatient beds at the Project site under this alternative (compared to 210 inpatient beds under the proposed Project).

The parking structure developed under this alternative would also be reduced by approximately one-third in size, with up to 178 parking stalls (as opposed to up to 270 parking stalls under the Project). It is also anticipated that under this alternative, the parking structure would be reduced by one floor (to 3 stories). (However, if a helistop were developed as a variant atop the 3-story parking structure, then the helistop structure would be constructed to provide a similar landing height as that proposed under the Project.) It is assumed that the site supporting building under this alternative would also be reduced in size by approximately one-third.

All existing building and structures proposed to be demolished (Loading Dock, A/B Wing, B/C Wing, Bruce Lyons Memorial Research Laboratory and Bruce Lyon Addition, on-site trailers, and existing helistop structure) or relocated (MRI Trailer) under this alternative would be the same as under the Project. Accordingly, the demolition/relocation under this alternative would amount to approximately 110,697 gsf of space, same as the Project.

All of the other supporting elements (i.e., transportation, infrastructure, and landscape improvements) that would be developed for this alternative are assumed to be similar to that which would occur under the proposed Project, although sized accordingly.

Comparison of Effects of Reduced Project Alternative to the Proposed NHB Project

Air Quality

This alternative would result in less new building space on the Project site compared to the Project, and thus less construction and operational activity. Consequently, significant cumulative health risk impacts associated with the construction and operation of the Project would be proportionally reduced under this alternative, but still would be significant, and the same mitigation measures would be required. The cumulative impact would still remain significant and unavoidable. Furthermore, less than significant project and/or cumulative impacts of the Project related to construction–generated criteria pollutants and operational criteria pollutant emissions would be reduced. For the same reasons, less than significant project impacts related to the exposure of sensitive receptors to substantial pollutant concentrations during construction and operation of the alternative would also be reduced. Finally, the less than significant impact associated with the Project's conflict with or obstruction of implementation of the *2017 Clean Air Plan* would be less under this alternative.

Biological Resources

This alternative would result in less construction and a smaller increase in building space associated with the new hospital compared to the proposed Project. However, the overall extent of construction and development-related impacts to biological resources under this alternative would be similar to the Project as the same amount of ground disturbance would occur. Accordingly, this alternative would have the same significant but mitigable project and/or cumulative construction-related effects on plant and wildlife species as the proposed Project. However, the potential for resident and migrating bird strikes from new development would be less under this alternative as the proposed hospital would be shorter. Nonetheless, the impact would still be significant and the same mitigation measures would be required. Project and/or cumulative impacts associated with potential resident and migrating bird strikes would be similarly mitigated to less than significant with implementation of bird safe building treatment measures. Finally, project and/or cumulative impacts related to damage to or removal of protected trees would remain less than significant under this alternative, as with the proposed Project, as the same amount of ground disturbance would occur under this alternative.

Cultural Resources, including Tribal Cultural Resources

This alternative would result in similar physical alteration of historical resources eligible for listing in the National Register and/or California Register as under the proposed Project. Under both this alternative and the Project, the A/B Wing would be demolished to accommodate the new hospital and despite mitigation, the significant and unavoidable project impact would remain. Furthermore, as the new hospital under this alternative would occupy the same building footprint as that under the proposed Project, this alternative would result in the same amount of ground disturbing activity, including excavation, compared to that which would occur for the Project. Thus, like the proposed Project, potentially significant project and/or cumulative impacts to previously unknown archaeological resources, and human remains under this alternative would be mitigated to a less than significant level with the same mitigation measures. Potential effects to previously unknown or buried tribal cultural resources under this alternative would also similarly be mitigated to a less than significant level, as under the proposed Project.

Energy

This alternative would result in less construction activities compared to the Project and as a result, would have a reduced construction energy use impact compared to the proposed Project. This alternative would involve less new building space than the Project. In addition, this alternative proposes fewer inpatient beds at the Project site than under the proposed Project. Consequently, this alternative would be expected to have less operational energy use than the Project. As such, the alternative would have lesser project and/or cumulative impacts associated with consumption of energy resources than the Project and the impacts would be less than significant. The alternative would also have a less than significant impact related to a conflict with a state or local plan for renewable energy or energy efficiency.

Geology and Soils

Given that the new hospital under this alternative would occupy the same building footprint as that under the proposed Project, this alternative would result in the same amount of ground disturbance during construction. As a result, this alternative would have the same potential project and/or cumulative impacts as the Project as it relates to effects of seismic ground shaking, liquefaction or unstable soils, expansive soils, and erosion from ground disturbance during construction. Furthermore, like the Project, potentially significant project and/or cumulative impacts to previously unknown paleontological resources under this alternative would be mitigated to a less than significant level with the same mitigation measure.

Greenhouse Gas Emissions

This alternative would result in less new building space on the Project site compared to the Project, and thus less construction and operational activity. Accordingly, there would be a smaller increase in GHG emissions during construction and operation of the alternative than the increase that would occur under the proposed Project. As with the proposed Project, the GHG impact of this alternative would be less than significant provided the new hospital and garage include no natural gas infrastructure; are energy efficient; and include an adequate number of electric vehicle charging facilities in compliance with CalGreen. Furthermore, the less than significant impact related to a conflict with applicable plans, policies or regulations adopted for the purpose of reducing GHG emissions would also be the same under this alternative.

Hazards and Hazardous Materials

This alternative would result in a smaller increase in building space on the Project site, resulting in a smaller increase in hazardous materials use on the site than with the Project. Thus, with adherence to existing regulations, project and/or cumulative impacts associated with the routine transport, use, or disposal of hazardous materials; potential accidental release of hazardous materials; and emitting and handling of hazardous materials within one-quarter mile of an existing or proposed school would remain less than significant under this alternative, as with the proposed Project. Furthermore, the amount of ground disturbance would be the same under this alternative as the new hospital would have the same footprint. As a result, with the same mitigation, project and/or cumulative impacts with respect to legacy contamination in soil and groundwater would remain less than significant for both the alternative and the Project.

Hydrology and Water Quality

As the new hospital under this alternative would occupy the same building footprint as that under the proposed Project, this alternative would result in the same amount of ground disturbance and new impervious surface on the Project site as the Project. Consequently, this alternative would result in the same significant but mitigable project and/or cumulative impacts related to the potential to violate water quality standards or waste discharge requirements and to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. For the same reasons (same amount of ground disturbance and impervious surface), this alternative would also result in the same less than significant project and/or cumulative impacts related to sustainable groundwater management, alteration of drainage patterns, which could lead to flooding, erosion, and siltation, and exceedance of the capacity of stormwater drainage systems, and polluted runoff, as under the proposed Project.

Land Use and Planning

This alternative would result in a smaller increase in building space on the Project site compared to the Project. As result, this alternative would also result in less than significant project and/or cumulative impacts with respect to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect, and incompatibility with adjacent land uses.

Noise and Vibration

This alternative would involve less new construction and a reduced duration of construction compared to the Project. As a result, under this alternative noise impacts would be reduced compared to the proposed Project. However, like the Project, the project impact associated with construction noise would remain significant and unavoidable under this alternative, even with the implementation of the same mitigation measures, as work beyond the 7:00 PM daytime construction workday restriction would be occasionally required. Similarly, construction vibration impacts would be reduced compared to the proposed Project; however, mitigation would still be required to reduce project and/or cumulative construction vibration impacts to a less-than-significant level, as under the proposed Project.

As this alternative would include a smaller new hospital, it would result in fewer and/or less intense new permanent noise sources, such as noise from stationary sources, loading docks, ambulances. With less development, the less than significant project and/or cumulative impacts related to permanent increases in ambient noise levels would be less than those under the proposed Project.

Finally, this alternative would generate less traffic compared to the Project. As a result, project and/or cumulative impacts related to a permanent increase in ambient noise levels due to traffic noise would be less than the impacts of the Project, and similarly, would be less than significant.

Transportation

This alternative would result in less new building space on the Project site compared to the Project, and thus less population and traffic compared to the proposed Project. As a result, the significant but mitigable temporary project and/or cumulative impacts during construction of the alternative would be less than under the proposed Project. Furthermore, potential less than significant project and/or cumulative transportation impacts associated with a conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, would be less as well under this alternative. VMT generated under this alternative would be similar to the Project. Furthermore, like the proposed Project, the alternative would meet two of the City of Oakland's screening criteria (Low VMT Areas and Near Transit Stations), and therefore, would have a less than significant impact on VMT. Finally, potential less than significant project and/or cumulative impacts associated with a substantial increase in hazards due to a geometric design feature or incompatible uses, especially at the driveways on 52nd Street and along MLK Jr. Way, and inadequate emergency access would be the same under this alternative.

Utilities and Service Systems

This alternative would result in less new building space on the Project site compared to the Project, and thus less population and associated demand for utilities compared to the Project. Accordingly, this alternative would further reduce the less than significant project and/or cumulative impacts of the Project, including those associated with construction of new or expanded utility infrastructure; the availability of water supply during normal, dry and multiple dry years; the availability of wastewater treatment capacity; the availability of solid waste disposal capacity; and compliance with federal, state and local statutes and regulations related to solid waste.

Relationship of the Reduced Project Alternative to Project Objectives

This alternative would modernize the aging UCSF BCH Oakland campus, although would provide one third less new building space than the Project. As such, this alternative would only partially meet the fundamental objectives of the Project as it relates to maintaining and enhancing UCSF BCH Oakland's place as a premier children's hospital, educational, research, and clinical institution; maintaining its place as a nationally recognized teaching hospital; and addressing challenges that affect the long-term viability of the institution. This alternative would achieve the fundamental objectives of meeting State seismic requirements for hospitals (SB 1953);

maintaining UCSF BCH Oakland's designation as the Bay Area's Level I pediatric trauma center with continued emergency service access via helicopter; and developing a new inpatient facility in a way that optimizes operational activities with other clinical facilities on the site. However, this alternative would not fully meet the fundamental objectives of addressing the existing shortage of capacity and access to pediatric care since it would provide a smaller increase in inpatient beds at UCSF BCH Oakland than the NHB Project; would not fully meet projected ED patient volumes; and would not fully address the pressing, current unmet need for adolescent inpatient mental health care and services.

Due to its reduced size, this alternative would not meet many of the development objectives of the Project, including the objective to develop an inpatient facility that has sufficient space to accommodate modern regulatory requirements and industry standards of contemporary hospitals, such as construction codes, sizes of operating rooms, ratio of operating rooms to pre-and post-recovery areas, space for privacy and infection control issues; develop a new inpatient facility that has sufficient space to accommodate modern technology, including telemedicine, and new diagnostic, imaging, testing, treatment, surgery and laboratory equipment, all requiring substantial infrastructure and space; and develop a new inpatient facility that has sufficient space to accommodate patient satisfaction requirements of contemporary hospitals, as fewer private patient rooms and patient rooms of sufficient size to accommodate family overnight stays would be provided.

6.4 Alternatives Considered but Dismissed from Detailed Evaluation

CEQA Guidelines Section 15126.6(c) requires an EIR to identify and briefly discuss any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process. In identifying alternatives for detailed evaluation, primary consideration was given to alternatives that could reduce significant impacts while still meeting most of the basic project objectives. Alternatives that did not reduce impacts or did not meet most of the basic project objectives were dismissed from detailed evaluation.

6.4.1 Locate Proposed Parking Structure on Annex Parking Lot

This alternative would locate the proposed parking structure on the existing UCSF BCH Oakland-owned annex parking lot located across from the Project site at 4701 MLK Jr. Way, which currently provides approximately 175 parking spaces for employee use only, with valet parking up to 225 vehicles. Assuming that the garage would cover the entire parking lot, a 270-space parking garage would be a 2-level structure. However, this alternative was rejected from further analysis for a number of reasons. To begin, the residential neighborhood to the west of the parcel consists of 1- and 2-story single-family residential uses, and a proposed 2-level parking structure could be objectionable to the immediate neighbors. Furthermore, existing surface parking on the annex parking lot would need to be replaced. The most likely option to accomplish this would be to add the displaced parking to the proposed parking structure, if financially feasible, thus increasing its height to a 4-level parking structure, which could make it further objectionable to immediate neighbors. If the existing parking was not replaced, this would cause employees to search for parking in surrounding neighborhoods, thus resulting in increased competition with neighbors for limited on-street parking. In addition, placement of the parking garage on this parking lot would result in all pedestrians, both visitors and staff, using the at-grade crossings across MLK Jr. Way which would not be desirable. Note that a pedestrian bridge was considered and rejected in the CHRCO CMP Project FEIR as the BART tracks make a such crossing infeasible. Furthermore, UCSF 2014 LRDP has a policy to prioritize parking for ED and health workers. Locating the parking garage at the annex parking lot site would locate the parking further away and would not be consistent with that policy. This alternative would also lead to all vehicles turning on to 51st and 47th Streets to access the parking structure, and thus increasing traffic on neighborhood streets. Finally, this alternative would remove the 175 existing parking spaces during the construction of the garage, resulting in a shortfall of parking at the campus site for the duration of the garage construction.

6.4.2 Helistop Alternate Location

As discussed in Section 4.10, *Noise and Vibration*, noise generated by helistop operations on the roof of the proposed New Hospital or on the roof of the proposed parking structure under the Project variant would not result in significant impacts to nearby sensitive receptors. However, an alternative to place the helistop off-site to reduce noise impacts to the surrounding community was considered to see if noise from helistop operations could be further reduced or avoided. Both off-site and on-site (i.e., a location somewhere other than the proposed location on top of the proposed New Hospital or proposed parking structure) were rejected from further analysis for the reasons stated below.

All of the existing hospitals in the Oakland area were contacted and none of them currently have an on-site helipad that could be used in place of the proposed helistop. The nearest hospitals with a helipad include John Muir Medical Center in Walnut Creek and Eden Medical Center in Castro Valley. The use of these existing helipads or the facilities at Oakland International Airport, was rejected from further analysis because for the hospital to provide adequate care, the helicopter landing location needs to be as close as possible to emergency facilities as patients arriving by helicopter are typically in critical condition, and the use of these distant facilities for this function would result in delays due to travel time and congestion on the area freeways, especially during commute hours. Any location for the helistop that is not on the same site as the emergency care facilities would add additional ground transport time and increase the risks to the patient. In addition, UCSF BCH Oakland is the Bay Area’s only California State-designated Level 1 pediatric trauma center. Removal of the helistop from the Project site would result in the inability of this facility to operate in this capacity.

Relocating the helistop to another parcel on the UCSF BCH Oakland campus site was also rejected from further analysis based on current site constraints and concerns related to increased noise impacts to the community. The only undeveloped site on the campus site where it would be feasible relocate the helistop would be on the existing annex parking lot located across MLK Jr. Way from the Project site. As discussed above, a residential neighborhood is located directly to the west of this parcel, and the impact of noise generated by helistop operations on this site on nearby residences would be more severe than under the proposed Project.

6.4.3 Off-Site Alternative

A few potential alternatives were considered for an off-site location for continued operation and expansion of hospital facilities. Considerations included potential expansion or relocation of wards/patient rooms to UCSF Benioff Children's Hospital on the UCSF Mission Bay campus site or to locations at UC Berkeley. An off-site alternative to develop the proposed Project at the UCSF BCH Mission Bay campus site was rejected for further analysis for the following reasons. The UCSF Mission Bay campus site does not have adequate space to accommodate UCSF BCH Oakland's program. UCSF's 2014 LRDP envisioned Phase 2 of the Medical Center at Mission Bay to accommodate future demand for adult and children's inpatient services there. The NHB Project, if located at Mission Bay, would consume nearly all of the available capacity for future expansion of adult and children's inpatient service in San Francisco. In addition, the proposed Project is meant to serve the pediatric emergency needs of children in the East Bay and placing the proposed Project across the bay would defeat this fundamental purpose. There are no locations at UC Berkeley that can accommodate UCSF BCH Oakland and that campus is already impacted in finding space for both educational programing and student housing. Moreover, locating the NHB Project away from the other services provided by the existing UCSF BCH Oakland buildings would not meet any of the project's fundamental objectives.

6.5 Summary Comparison of Alternatives

Table 6-3 provides a summary of comparison of impacts of the proposed NHB Project and the alternatives evaluated in detail and indicates whether the impacts of the alternatives would be more or less severe than those of the proposed Project. For more information about the methodology used to evaluate potential impacts of the Project and an explanation of the resulting impact conclusions, please see Chapter 4*, Environmental Setting, Impacts, and Mitigation Measures*.

6.6 Environmentally Superior Alternative

Section 15126.6(e)(2) of the *CEQA Guidelines* requires the identification of an environmentally superior alternative to the proposed project. If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

6.6.1 Alternative 1: No Project

Of the alternatives evaluated in this EIR, the environmentally superior alternative would be the No Project Alternative. The No Project Alternative would not involve demolition of any existing structures (including the A/B Wing, a historical resource), or new construction at the UCSF BCH Oakland campus site related to the new hospital building, parking structure, site support building and related improvements. As a result, there would be no increase in inpatient beds at the campus site under this alternative over existing conditions.

TABLE 6-3
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
4.1 Air Quality					
Impact AIR-1: Implementation of the NHB Project would not conflict with or obstruct implementation of the 2017 Clean Air Plan.	LTS	- NI	=/- LTS	= LTS	- LTS
Impact AIR-2: Implementation of the NHB Project would not 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.	LTS	- NI	=/- LTS	= LTS	- LTS
Impact AIR-3: Implementation of the NHB Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	- NI	=/- LTS	= LTS	- LTS
Impact C-AIR-1: The health risk from the NHB Project combined with health risk impacts from other sources in the Project vicinity would result in significant cumulative health risk impacts.	SU	- NI	=/- SU	= SU	- SU
4.2 Biological Resources					
Impact BIO-1: Implementation of the NHB Project could 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.	LTSM	- NI	= LTSM	= LTSM	= LTSM
Impact BIO-2: Implementation of the NHB Project could 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.	LTSM	- NI	- LTSM	+ LTSM	- LTSM
Impact BIO-3: Implementation of the NHB Project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or exceed the LRDP EIR standard of significance by damaging or removing heritage or landmark trees or native oak trees of a diameter specified in a local ordinance.	LTS	- NI	= LTS	= LTS	= LTS
Impact C-BIO-1: Implementation of the NHB Project could result in cumulatively considerable impacts on biological resources, in combination with past, present and reasonably foreseeable future projects in the vicinity of the Project site.	LTSM	- NI	= LTSM	= LTSM	= LTSM

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
4.3 Cultural Resources and Tribal Cultural Resources					
Impact CUL-1: Implementation of the NHB Project would result in a substantial adverse change in the significance of known historical resources.	SUM	- NI	- LTS	- LTS	= SUM
Impact CUL-2: Implementation of the NHB Project would not result in significant impacts to the 55th and Dover Residential District.	LTS	- NI	= LTS	= LTS	= LTS
Impact CUL-3: Implementation of the NHB Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines* Section 15064.5.	LTSM	- NI	- LTSM	- LTSM	= LTSM
Impact CUL-4: Implementation of the NHB Project could disturb human remains, including those interred outside of dedicated cemeteries.	LTSM	- NI	- LTSM	- LTSM	= LTSM
Impact CUL-5: Implementation of the NHB Project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 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.	LTSM	- NI	- LTSM	- LTSM	= LTSM
Impact C-CUL-1: Implementation of the NHB Project could result in cumulatively considerable impacts on cultural and/or tribal cultural resources, in combination with past, present and reasonably foreseeable future projects.	LTS/LTSM	- NI	- LTS/LTSM	- LTS/LTSM	= LTS/LTSM
4.4 Energy					
Impact ENE-1: Implementation of the NHB Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	- NI	=/- LTS	= LTS	- LTS
Impact ENE-2: Implementation of the NHB Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	- NI	=/- LTS	= LTS	- LTS
Impact C-ENE-1: The NHB Project, combined with cumulative development in the BCH Oakland campus site vicinity and citywide, would not result in significant cumulative energy impacts.	LTS	- NI	=/- LTS	= LTS	- LTS
4.5: Geology and Soils					
Impact GEO-1: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	LTS	- NI	- LTS	- LTS	= LTS

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
Impact GEO-2: Construction and operation of the NHB Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic related ground failure, including liquefaction.	LTS	- NI	- LTS	- LTS	= LTS
Impact GEO-3: Construction and operation of the NHB Project would not have the potential to result in substantial erosion or the loss of topsoil.	LTS	- NI	- LTS	- LTS	= LTS
Impact GEO-4: The NHB Project would not 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.	LTS	- NI	- LTS	- LTS	= LTS
Impact GEO-5: The NHB Project would be located on expansive soils, but would not cause substantial direct or indirect risks to life or property	LTS	- NI	- LTS	- LTS	= LTS
Impact GEO-6: The NHB Project could directly or indirectly destroy a unique paleontological resource or site or unique geological feature.	LTSM	- NI	- LTSM	- LTSM	= LTSM
Impact C-GEO-1: Implementation of the NHB Project, in combination with past, present and reasonably foreseeable future projects, would not result in significant cumulative impacts related to geology and soils.	LTS	- NI	- LTS	- LTS	= LTS
4.6 Greenhouse Gas Emissions					
Impact GHG-1: Construction and operation of the NHB Project would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	LTS	- NI	= LTS	= LTS	= LTS
Impact GHG-2: Construction and operation of the NHB Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	LTS	- NI	= LTS	= LTS	= LTS
4.7 Hazards and Hazardous Materials					
Impact HAZ-1: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	LTS	- NI	- LTS	= LTS	- LTS
Impact HAZ-2: Construction and operation of the NHB Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LTS	- NI	- LTS	= LTS	- LTS

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
Impact HAZ-3: Construction and operation of the NHB Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	- NI	- LTS	= LTS	- LTS
Impact HAZ-4: The UCSF BCH Oakland campus site is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Contamination at the NHB Project site could be encountered during construction and could have the potential to create a significant hazard to the public or the environment.	LTSM	- NI	- LTSM	- LTSM	= LTSM
Impact C-HAZ-1: Construction and operation of the NHB Project, in conjunction with other cumulative development within the City of Oakland, would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or from risk of upset and accident conditions involving hazardous materials.	LTS	- NI	- LTS	= LTS	= LTS
4.8 Hydrology and Water Quality					
Impact HYD-1: Implementation of the NHB Project would have the potential to violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality.	LTSM	- NI	= LTSM	= LTSM	= LTSM
Impact HYD-2: Implementation of the NHB Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	- NI	= LTS	= LTS	= LTS
Impact HYD-3: Construction and operation of the NHB Project would not substantially alter the existing drainage patterns of the site or area, in a manner that has the potential to result in substantial erosion or siltation on- or off- site; would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site; and would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flow.	LTS	- NI	= LTS	= LTS	= LTS
Impact HYD-4: Implementation of the Project would not create a risk of release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	LTS	- NI	= LTS	= LTS	= LTS
Impact HYD-5: Implementation of the NHB Project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTSM	- NI	= LTSM	= LTSM	= LTSM

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
Impact C-HYD-1: Construction and operation of the NHB Project, in conjunction with other cumulative development, could cumulatively violate water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.	LTSM	- NI	= LTSM	= LTSM	= LTSM
Impact C-HYD-2: Construction and operation of the NHB Project, in conjunction with other cumulative development, would not cumulatively alter the drainage pattern of the site or area, through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on or off site; would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site; would not 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 impede or redirect flow.	LTS	- NI	= LTS	= LTS	= LTS
4.9 Land Use and Planning					
Impact LU-1: Implementation of the proposed NHB Project would not cause a significant environmental impact due to a conflict with land use plans, policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	- NI	= LTS	= LTS	= LTS
Impact LU-2: Development under the proposed NHB would not conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created.	LTS	- NI	= LTS	= LTS	= LTS
Impact C-LU-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a conflict with land use plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect or a conflict with local land use regulations such that a significant incompatibility with adjacent land uses is created.	LTS	- NI	= LTS	= LTS	= LTS
4.10 Noise and Vibration					
Impact NOI-1: Construction activities under the NHB Project would generate a substantial temporary increase in ambient noise levels in the vicinity of the Project site in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	SUM	- NI	- SUM	= SUM	- SUM
Impact NOI-2: Implementation of the NHB Project would not generate a substantial 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.	LTS	- NI	- LTS	= LTS	- LTS

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
Impact NOI-3: Construction activities for the NHB Project and related improvements could result in generation of excessive groundborne vibration or groundborne noise levels.	LTSM	- NI	- LTSM	= LTSM	- LTSM
Impact NOI-4: Operation of the NHB Project would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (Ldn) of 3 dB(A) or more at property lines, where ambient noise levels already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use.	LTS	- NI	= LTS	= LTS	- LTS
Impact C-NOI-1: Implementation of the NHB Project, combined with other concurrent construction projects in the project area, could generate a substantial temporary increase in ambient noise levels from construction activity 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.	LTSM	- NI	- LTSM	= LTSM	- LTSM
Impact C-NOI-2: Implementation of the NHB Project, combined with cumulative development in the project area, would not generate substantial permanent increases 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.	LTS	- NI	= LTS	= LTS	- LTS
Impact C-NOI-3: Implementation of the NHB Project, combined with cumulative construction in the project area, could result in generation of excessive groundborne vibration or groundborne noise levels.	LTSM	- NI	= LTS	= LTS	- LTS
Impact C-NOI-4: Implementation of the NHB Project, combined with cumulative development in the project area, would not exceed an LRDP EIR operational standard of significance by contributing to an increase in average daily noise levels (L_{dn}) of 3 dB(A) or more at property lines, if ambient noise levels in areas adjacent to proposed development already exceed local noise levels set forth in local general plans or ordinances for such areas based on their use.	LTS	- NI	= LTS	= LTS	- LTS
4.11 Transportation					
Impact TRANS-1: Implementation of the NHB Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.	LTS	- NI	= LTS	= LTS	- LTS
Impact TRANS-2: Implementation of the NHB Project would not conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b).	LTS	- NI	= LTS	= LTS	= LTS
Impact TRANS-3: Implementation of the NHB Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	- NI	= LTS	= LTS	= LTS

TABLE 6-3 (CONTINUED)
COMPARISON OF IMPACTS OF THE PROPOSED NHB PROJECT AND ALTERNATIVES

Impact	Proposed Project	Alternative 1: No Project	Alternative 2: New Hospital Project per the 2015 CHRCO CMP	Alternative 3: Modified Hospital Design Project	Alternative 4: Reduced Project
Impact TRANS-4: Implementation of the NHB Project would not result in inadequate emergency access.	LTS	- NI	= LTS	= LTS	= LTS
Impact TRANS-5: Construction of the NHB Project could temporarily impact travel conditions along sidewalks and roadways serving the campus site.	LTSM	- NI	= LTSM	= LTSM	= LTSM
Impact C-TRANS-1: Implementation of the NHB Project, in combination with past, present, and reasonably foreseeable future projects, would not result in a cumulatively considerable contribution to significant transportation impacts.	LTS	- NI	= LTS	= LTS	= LTS
4.12 Utilities and Service Systems					
Impact UTIL-1: Implementation of the proposed NHB Project would require or result in the construction of new or expanded water, wastewater treatment or storm water drainage, electric power, or telecommunications facilities, the construction or relocation of which would not cause significant environmental effects.	LTS	- NI	= LTS	= LTS	- LTS
Impact UTIL-2: Sufficient water supply would be available from the EBMUD to serve the NHB Project and reasonably foreseeable future development under normal, dry and multi-dry years. EBMUD would address the anticipated shortfalls through rationing and conservation programs and/or develop new or expanded water supply facilities to address shortfalls during multiple dry years.	LTS	- NI	= LTS	= LTS	- LTS
Impact UTIL-3: The wastewater treatment provider would have adequate wastewater treatment capacity to serve the NHB Project.	LTS	- NI	= LTS	= LTS	- LTS
Impact UTIL-4: The NHB Project would not 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	LTS	- NI	= LTS	= LTS	- LTS
Impact UTIL-5: The NHB Project would comply with applicable management and reduction statutes and regulations related to solid waste.	LTS	- NI	= LTS	= LTS	- LTS
Impact C-UTIL-1: The proposed NHB Project, in combination with past, present, and reasonably foreseeable future projects in the vicinity of the UCSF BCH Oakland campus site, would not result in significant cumulative impacts related to utilities and service systems.	LTS	- NI	= LTS	= LTS	- LTS

SOURCE: Environmental Science Associates

As such, the No Project Alternative would have substantially less overall environmental impacts than either the proposed Project or the other alternatives. The No Project Alternative would eliminate the three significant and unavoidable project and/or cumulative NHB Project impacts: Impact C-AIR-1 (cumulative health risk), Impact CUL-1 (project-level change in the significance of a known historical resource), and Impact NOI-1 (project-level construction noise).

The No Project Alternative would also avoid 16 other significant but mitigable project and/or cumulative impacts that would occur under the Project, including potential impacts to nesting bird species during construction, and potential for increased bird strikes from new building development; potential to disturb unknown archaeological and tribal resources, human remains and/or paleontological resources during construction excavation; exposure to contaminated soils during construction excavation; potential to violate water quality standards or waste discharge requirements or conflict with or obstruct implementation of a water quality control plan; operational noise and vibration effects; and potential to temporarily impact travel conditions along sidewalks and roadways serving the campus site during construction.

However, as discussed above under Section 6.3.1, this alternative is impractical because it would not achieve any of the project's fundamental or development objectives. As such, this alternative is considered unrealistic, impractical and infeasible.

6.6.2 Alternative 2: New Hospital Project per the 2015 CHRCO CMP

Of the remaining alternatives that are not the No Project Alternative: (i.e., Alternative 2: New Hospital Project per the 2015 CHRCO CMP Alternative, Alternative 3: Modified Hospital Design Project Alternative, and Alternative 4: Reduced Project Alternative), Alternative 2 and Alternative 3 would both avoid the significant and unavoidable Impact CUL-1 associated with the demolition of A/B Wing, a historic resource. However, both alternatives would still result in the other two significant and unavoidable impacts of the proposed Project, namely the cumulative human health risk impact related to TAC emissions and the project-level construction noise impact. However, on balance, Alternative 2: New Hospital Project per the 2015 CHRCO CMP Alternative is considered the environmentally superior alternative. New Hospital Project per the 2015 CHRCO CMP Alternative would involve the least amount of demolition and new construction of the build alternatives; and would also represent the smallest and shortest New Hospital. As such, this alternative would have incrementally less construction-related impacts than the other two build alternatives.

While the New Hospital Project per the 2015 CHRCO CMP Alternative would provide the same number of inpatient beds as under the Project, it would, however, not meet space requirements for modern hospitals, mental health and ED requirements, and would limit private rooms. As a result, due to its smaller size and limitations, it would be expected to generate somewhat less operational impacts than the proposed Project (e.g., generate less traffic and associated air quality and GHG emissions, and less utility and service demands).

However, as previously discussed, this alternative would fail to fully meet many of the proposed Project's fundamental and development objectives.

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CHAPTER 7
Report Preparation

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Appendix A
Notice of Preparation

UCSF
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May 22, 2023

Notice of Preparation of Environmental Impact Report
Notice of a Public Scoping Meeting

Project: UCSF Benioff Children's Hospital Oakland New Hospital Building (NHB)
Location: 747 52nd Street, Oakland, California 94609
Assessor's Parcel Numbers: 14-1205-19-1, 14-1204-14-5, and 14-1204-15
Sponsor: University of California, San Francisco (UCSF)
Lead Agency: The Regents of the University of California
Staff Contact: Diane Wong, UCSF (415) 502-5952

This is the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) that will be prepared by the University of California, San Francisco (UCSF) for the above-named project. This NOP is available at http://tiny.ucsf.edu/zpkbKa for a 30-day public review and comment period beginning **May 22 through June 21, 2023**.

Introduction

UCSF Benioff Children's Hospital (UCSF BCH Oakland) is a pediatric acute care hospital located in Oakland, California. UCSF BCH Oakland includes a broad range of inpatient and outpatient services, providing comprehensive pediatric specialties and subspecialties to infants, children, teens, and young adults. The hospital features a Level 1 Pediatric Trauma Center, one of five in the state. The hospital currently provides 177 licensed inpatient beds within its neonatal and pediatric intensive care units (NICU and PICU) and acute care medical/surgery departments. UCSF BCH Oakland medical staff are comprised of more than 800 faculty physicians and multi-disciplinary teams of psychologists, nurses, pharmacists, dentists, social workers, and physical therapists that provide expert, comprehensive and compassionate patient care, pioneering research, training, and advance pediatric physical and mental health.

UCSF BCH Oakland operates a Federally Qualified Health Center, a community-based health care provider to provide primary care services to underserved patients. In addition, UCSF BCH Oakland also maintains ongoing agreements with the County of Alameda and other partners in the City of Oakland to implement a variety of mental health programs, including emergency psychiatric services and trauma care; HIV prevention, mental health, and substance abuse services; infant, child and adolescent psychiatry; and substance abuse and addiction therapy, for a diverse patient population.

UCSF BCH Oakland is also a nationally recognized teaching hospital providing accredited residency education in general pediatrics and fellowship education to pediatricians seeking subspecialty training. UCSF BCH Oakland is affiliated with the UCSF School of Medicine and the UCSF Office of Research.

Background

In 2014, UCSF entered into an affiliation agreement with Children's Hospital & Research Center Oakland (CHO), to align the two institutions based on the shared mission of serving the health care needs of all children, regardless of race, religion, or financial status.

At that time, a Campus Master Plan (CMP) for the 11-acre campus, which provided for the development of new and replacement facilities within the existing campus, was already under review by the City of Oakland, which maintained land use jurisdiction and California Environmental Quality Act (CEQA) lead agency status for the site as CHO was then a solely private institution.

In 2015, the City of Oakland certified the *Children's Hospital and Research Center Oakland Campus Master Plan Project Final EIR* (CHRCO CMP Project FEIR) and approved the CMP. The entitlements for the CMP included, among other things, a Planned Unit Development (PUD) permit, which consisted of two phases:

> **Phase 1:** The Preliminary Development Plan (PDP) and Final Development Plan (FDP) for Phase 1 were approved in 2015. Phase 1 included construction of an outpatient building, interior renovations to campus buildings, circulation improvements, demolition of a residential structure, and modifications to two residential structures. Construction of the improvements included in Phase 1 is still in progress.
>
> **Phase 2:** Phase 2 included the construction of a Clinical Support Building (now named the Administrative Support Building), a new Acute Care Patient Pavilion, the Link Building with a helipad on the roof, a Family Residence Building, expansion of the central utility plant, new parking structure, and demolition of several buildings. The PDP for Phase 2 was approved in 2015.

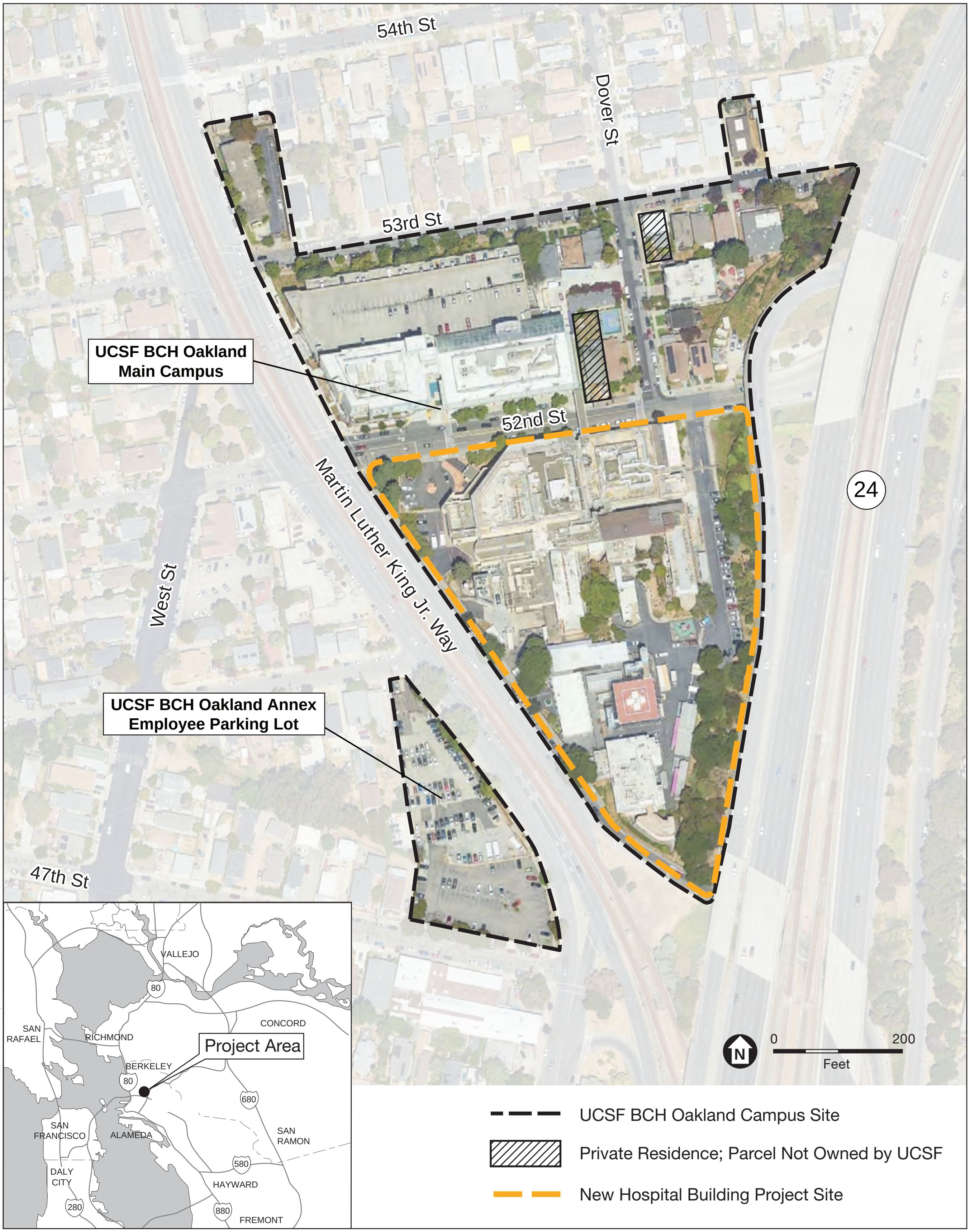
Following the 2014 agreement between CHO and UCSF, the hospital was renamed UCSF Benioff Children's Hospital, Oakland (UCSF BCH Oakland). While the hospital is still under the management control of UCSF BCH Oakland, a non-profit public benefit corporation, the UC Regents are the sole member of the nonprofit.

As UCSF BCH Oakland campus site is now controlled by the University, UCSF has revised its approach to the modernization of the campus site. UCSF has, therefore, reduced the scope of Phase 2 development compared to the Phase 2 analyzed in the 2015 CHRCO CMP Project FEIR, to include the new construction of the Administrative Support Building (ASB), the ASB-related relocation of two structures on 52nd Street and demolition of two structures on Dover Street and 53rd Street. The ASB project has been approved by the University for implementation.

The proposed New Hospital Building (NHB) Project represents the next stage of campus modernization. Although the proposed NHB Project is conceptually the same as the Phase 2 development analyzed in the 2015 CHRCO CMP Project FEIR for the portion of the campus site south of 52nd Street, there are some differences in the proposed improvements. As such, the University, acting as the lead agency under CEQA, has determined that it will prepare a project EIR that analyzes and discloses the environmental impacts of the proposed NHB Project.

Campus Site Location and Existing Site Characteristics

UCSF BCH Oakland is located on an approximately 11-acre campus at 747 52nd Street in the North Oakland neighborhood of Oakland (see **Figure 1**). The triangular campus site is roughly bounded by 53rd Street on the north, Martin Luther King (MLK) Jr. Way to the south and west, and State Route 24 (SR 24) to the east. There is also an annex employee parking lot located west of MLK Jr. Way, between 47th and 51st Streets. As indicated in Figure 1, there are two parcels within the campus site not owned by UCSF.



SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project

Figure 1
UCSF BCH Oakland Campus Site

ESA

The NHB Project site is located south of 52nd Street, between MLK Jr. Way and SR 24 (see **Figure 2**). Existing development within the NHB Project site consists of a variety of hospital buildings and supporting structures of varying ages. As illustrated in **Figure 2** and summarized in **Table 1**, these include four inpatient facilities: the Patient Tower, Ford Diagnostic and Treatment Center and Cardiac Catheterization Lab Building, and the B/C Wing and A/B Wing. Other buildings within the NHB Project site include the Cafeteria, Western Addition, Central Utility Plant and Chiller Building, Bruce Lyon Memorial Research Laboratory and Bruce Lyon Addition (Hematology/Oncology administrative offices), a 36-foot-tall helistop structure, and several temporary trailers that house office and administrative uses.

TABLE 1
EXISTING BUILDINGS AND STRUCTURES ON NHB PROJECT SITE

Reference No.[a]	Building/Structure	Construction Date	Number of Stories	Area (sq. ft.)
1.	Patient Tower	1980	5 stories	105,371
2.	Ford Diagnostic and Treatment (D&T) Center and Cardiac Catheterization Lab	1961	3 stories	45,958
3.	Cafeteria	1988	2 stories	7,779
4.	Western Addition	2009	3 stories	7,715
5.	Central Utility Plant	1982; improved in 1987	2 stories	12,217
6.	Chiller Building	2022	1 story	1,050
7.	Hospital Loading Dock	1982	1 story	637
8.	B/C Wing	1946	3 stories	33,510
9.	A/B Wing	1928	4 stories	45,177
10.	Bruce Lyon Memorial Research Laboratory	1958	2 stories	12,570
11.	Bruce Lyon Addition (Hematology/Oncology Administrative offices)	1992	3 stories	4,500
12	Temporary Trailer (MRI)	--	1 story	1,065
13.	Temporary Trailer (Facilities Design and Construction)	--	1 story	480
14.	Temporary Trailer (Ed Administration)	--	1 story	2,108
15.	Temporary Trailer (Social Services)	--	1 story	1,772
16.	Temporary Trailer (Center for Vulnerable Children [CVC])	--	1 story	4,555
17.	Temporary Trailer (Education/HIS)	--	1 story	1,779
18.	Temporary Trailer (Offices)	--	1 story	628
19.	Helistop Structure	2000	--	--

NOTE:
[a] Refer to Figure 2 for location of existing buildings/structures.

SOURCE: UCSF, 2023

As shown in Figure 2, local roadways that provide access to the NHB Project site include MLK Jr. Way and 52nd Street; vehicular access within the NHB Project site is provided via Dover Street. BART extends on elevated train tracks in the center of MLK Jr. Way adjacent to the site to the west. SR 24 extends on an embankment to the east. A pedestrian bridge provides elevated access from the Patient Tower to the north across 52nd Street. Near the southernmost tip of the NHB Project site, Temescal Creek runs east to west within an underground 10- by 10-foot culvert. An underground duct bank runs within a Pacific Gas and Electric Company (PG&E) easement that extends east-west through the NHB Project site. In addition, overhead PG&E power lines extend along 52nd Street adjacent to, and on Dover Street within, the NHB Project site.

SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project

Figure 2
New Hospital Building Project Site

ESA

Open space on the NHB Project site is primarily limited to a courtyard between the A/B and B/C Wings (i.e., between Buildings 8 and 13 in Figure 2). Within the courtyard there is a magnolia tree that was planted in about 1860; and adjacent to the courtyard is an approximate 800-square-foot play area and "Butterfly Garden."

Project Need

Aged facilities and functional obsolescence present challenges to the long-term viability of the UCSF BCH Oakland hospital, including seismically non-compliant buildings, capacity constraints, inefficient layouts, and undersized facilities for UCSF BCH Oakland's program of care.

The Alquist Seismic Safety Act and Senate Bill (SB) 1953 require hospitals to comply with seismic safety building standards. Seven of the UCSF BCH Oakland campus site buildings or building additions located south of 52nd Street were constructed and renovated in stages from 1928 through 2003; the two oldest buildings (A/B and B/C Wings) currently pose a significant risk of collapse following a strong earthquake. In order to comply with applicable seismic safety building standards, a substantial portion of the existing inpatient facilities at the UCSF BCH Oakland campus must be either structurally retrofitted or decommissioned by January 1, 2030. Planning is also underway to improve the seismic resiliency of other buildings at UCSF BCH Oakland.

Care capacity at UCSF BCH Oakland has been outpaced by demand and limited by aging infrastructure, which has constrained the provision of care and meeting patient and family expectations to care delivery. Newer technological systems and equipment require reconfiguration of space and improvements to the building infrastructure. The current lack of space also prevents UCSF BCH Oakland from providing new patient care services, such as behavioral health. These challenges also affect the ability of UCSF BCH Oakland to grow and attract faculty, residents, students and staff, and limits UCSF BCH Oakland's ability to meet its mission of caring, healing, teaching and discovering.

As a result, UCSF BCH Oakland has identified areas of needs to be addressed as part of its campus modernization efforts, including the need for private patient rooms, rather than open wards and shared rooms; space for families; an enlarged Emergency Department, including properly sized rooms for current patient volumes with adjacent imaging services; larger Operating Rooms to accommodate advanced medical technologies; and dedicated mental health inpatient beds to address the pressing, unmet need for adolescent mental health care and services.

Proposed Project

UCSF is proposing to construct a new hospital building and associated improvements at the UCSF BCH Oakland campus, collectively known as the New Hospital Building (NHB) Project, or Project. The Project would address seismic safety requirements and meet other regulatory requirements and industry standards for contemporary hospitals; increase inpatient beds; accommodate modern technologies; and enhance functionality and efficiency at the campus site.

The Project would include the construction of a 324,000 gross square foot (gsf) 8-story above grade (plus basement level) new hospital building; an approximately 370 -stall, 5-story parking structure with a rooftop helistop; renovation and/or structural retrofitting of existing buildings within the NHB Project site; and a variety of transportation, infrastructure and landscape improvements. In total, when accounting for proposed demolition or relocation off-site, the Project would provide for development of approximately 215,000 net new gsf of building space; and renovation of approximately 11,000 gsf of building space.

F**igure 3** presents a conceptual site plan for the proposed NHB Project. **Figure 4** provides a conceptual massing diagram of the proposed buildings under the Project. **Figure 5** presents existing buildings and structures that would be demolished or relocated off-site under the Project. The following provides a description of the major Project components.

New Hospital Building

As shown in Figure 3, the new hospital building would be situated south of, and adjacent to, the existing Patient Tower and D&T Buildings. The proposed new hospital would provide a comprehensive range of health care services, including:

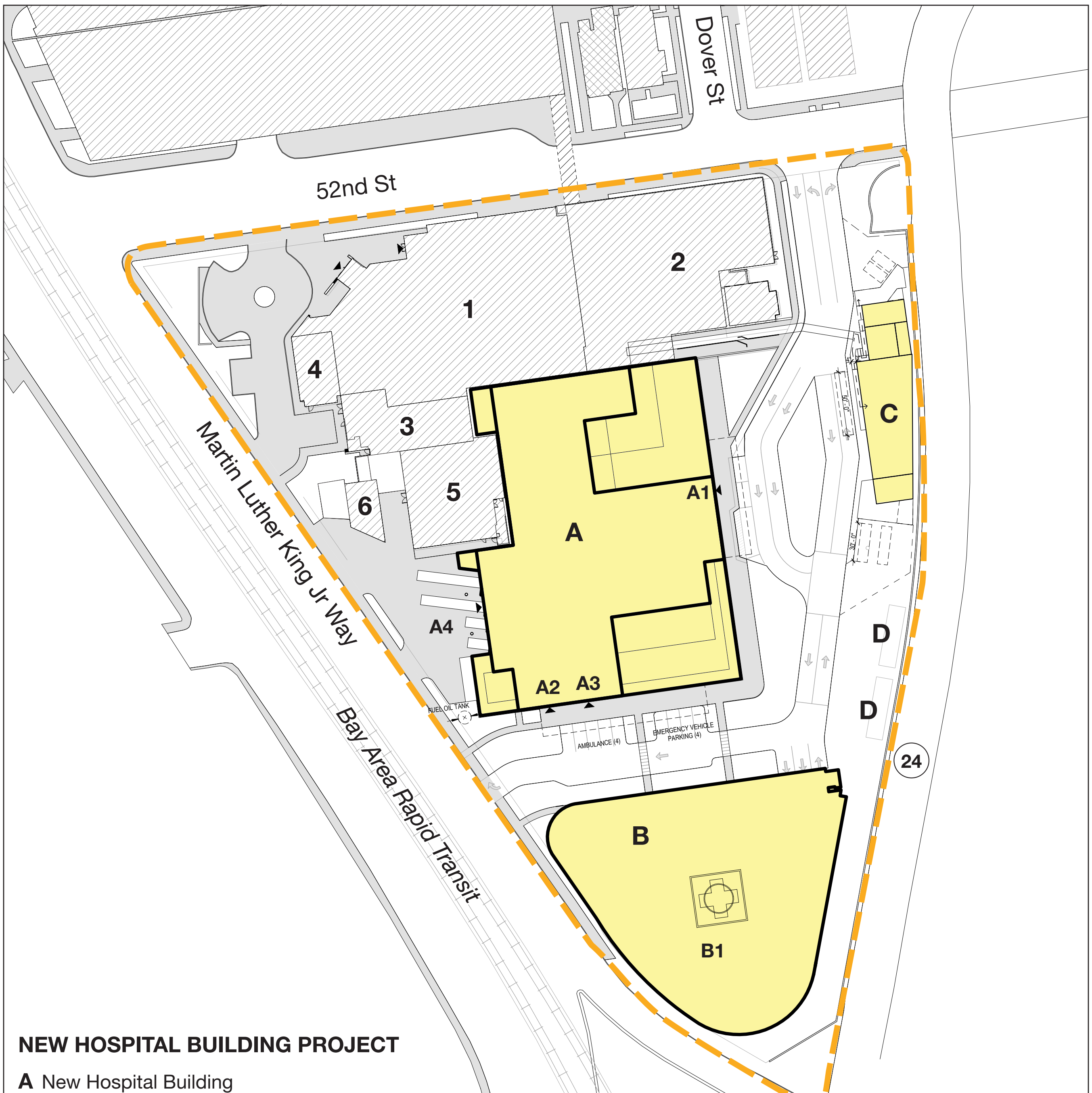
- *Inpatient Services*, including NICU and PICU; acute care; respiratory therapy; and physical/ occupational/speech therapy;
- *Diagnostic and Treatment,* including emergency department (ED); surgery; Cardiac Cath; Special Procedures such as IP GI/Endoscopy, diagnostic and interventional imaging services (e.g., radiography, fluoroscopy, ultrasound, and magnetic resonance imaging); and nuclear medicine;
- *Clinical Support*, including clinical lab and blood bank; inpatient pharmacy; sterile processing department, and inpatient and outpatient research support;
- *General Support*, including patient transport; cafeteria and kitchen; security department, mail and copy departments; morgue; facilities management; and medical equipment storage; and
- *Public and Administrative,* including lobby; admitting/registration; medical records; retail pharmacy; palliative care; chapel and family resources center; and gift shop.

The new hospital building would measure about 117 feet above ground level (agl) to the roof (and 142 feet agl to top of rooftop mechanical equipment).

The NHB Project would provide 128 inpatient beds in the new hospital building, resulting in a total program of 210 licensed inpatient beds at the UCSF BCH Oakland campus (a net increase of 33 beds over existing conditions). To further support the hospital modernization effort, some spaces in the existing hospital would be vacated as their programs move into the new hospital building, and would be renovated to backfill with other needed space to support the campus. These include two special procedure rooms, respiratory therapy, shared support spaces, officing and administration spaces needed to support departments within the hospital

Parking Garage with Rooftop Helistop

As shown in Figure 3, the proposed parking garage would be located at the south end of the NHB Project site, with vehicular access provided via an internal access road on the north side of the garage. The parking garage would provide approximately 370 vehicle parking stalls, including stalls with electric vehicle charging stations. The parking garage would measure approximately 42 feet agl to the top of 5th level deck, and a maximum height of 84 feet agl when accounting for the top of elevator parapet. The existing helistop structure would be relocated to the roof of the proposed parking garage. The rooftop helistop landing would measure approximately 10 feet above the parking garage 5th level deck (i.e., approximately 52 feet agl).



NEW HOSPITAL BUILDING PROJECT

- **A** New Hospital Building
  - **A1** New Emergency Department Entrance
  - **A2** New Staff Entrance
  - **A3** New Ambulance Dropoff
  - **A4** New Loading Dock
- **B** New Parking Garage
  - **B1** Rooftop Helistop
- **C** New Interim Loading Dock
- **D** Generator Location

EXISTING BUILDINGS

- **1** Patient Tower
- **2** Ford Diagnostic and Treatment (D&T) and Cardiac Catheterization Lab
- **3** Cafeteria
- **4** Western Addition
- **5** Central Utility Plant
- **6** Chiller Building

New Buildings/ Structures

Existing Buildings

New Hospital Building Project Site

N

0 100
Feet

2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023; ESA, 2023

Figure 3
New Hospital Building Project Site Plan

2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project

Figure 4
Conceptual Massing of Proposed Buildings under NHB Project

ESA

SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project

Figure 5
Proposed Demolition Under
New Hospital Building Project

ESA

Loading Dock

As indicated in Figure 3, an interim loading dock would be constructed along the east side of the NHB Project site that would be utilized for loading activities for the hospital after the existing loading dock is demolished and prior to completion of the permanent loading dock.

As depicted in Figure 3, the permanent loading docks would be integrated into the west side of the new hospital building, in the same general location as the existing dock facilities. The proposed permanent loading docks would provide four loading bays (an increase over the two existing loading bays at the site). After the permanent loading docks are completed, the interim loading dock facility may remain and continue to be used as a supplemental facility.

Transportation Improvements

Figure 3 illustrates the preliminary internal circulation improvements proposed at the NHB Project site. The principal vehicular ingress/egress point to the Project site for the public, emergency vehicles and delivery vehicles would be on 52nd Street. An internal driveway would extend south from 52nd Street and access a passenger drop-off for the emergency department entrance located along the east side of the new hospital building; and continue south to the parking garage entrance/exit. A westbound-only lane would extend west to an ambulance patient drop-off and ambulance/emergency vehicle parking area located along the south side of the new hospital building, before reaching an egress-only driveway on MLK Jr. Way.

The existing passenger drop-off for the Patient Tower that is located within the surface parking area near the northwest corner of 52nd Street and MLK Jr. Way would remain under the Project. Existing pedestrian sidewalks along 52nd Street and MLK Jr. Way adjacent to the NHB Project site would be improved under the Project.

Building Demolition

As illustrated in Figure 5, a number of existing buildings and structures would be demolished under the Project. This includes the A/B and B/C Wings, existing loading dock, existing helistop structure, the Bruce Lyon Memorial Research Laboratory and Addition, and several trailers. In addition, the existing MRI trailer would be removed and relocated off-site.

Construction and Phasing

Construction of the Project would begin in early 2027 and be completed and operated by 2030. The interim loading dock would be constructed first, and the existing MRI trailer would be removed and relocated. The removal of exterior cladding from the A/B and B/C Wings would then occur. Following demolition of existing buildings and trailers in the south portion of the NHB Project site (see discussion of the previously-addressed non-Project related activities, below), the proposed parking garage with rooftop helistop would be constructed, and the existing helistop structure would then be demolished. Next, the A/B and B/C Wings would be demolished. Lastly, the new hospital building would be constructed, and renovation of the existing Patient Tower would be completed.

Activities on NHB Project Site that Were Previously Addressed and/or are Required to Comply with Applicable Regulations

Certain demolition activities that would be implemented at the NHB Project site were previously proposed under the 2015 CHRCO CMP and analyzed in the 2015 CHRCO CMP Project FEIR. This includes demolition of the B/C Wing, loading dock, the Bruce Lyon Memorial Research Laboratory and Addition, existing helistop and several trailers; and on-site tree and vegetation removal. The NHB Project EIR will conservatively readdress these proposed demolition activities as part of the Project.

Certain other activities that were previously proposed under the 2015 CHRCO CMP and analyzed in the 2015 CHRCO CMP Project FEIR will be implemented in the near-term and will not be reanalyzed as part of the proposed Project in the NHB EIR; this includes the relocation of the existing retaining wall in the vicinity of SR 24; and relocation of the PG&E underground electrical duct bank.

UCSF is also required to remove the existing fuel oil underground storage tank (UST) on the NHB Project site by early 2026 in accordance with State UST regulations, which will be replaced with a new 12,000-gallon above ground storage tank. This undertaking is not associated with the proposed NHB Project, and accordingly, will not be analyzed as part of the proposed Project in the NHB EIR.

Any of the aforementioned activities that are not associated with the NHB Project will, however, be considered along with the proposed Project in the cumulative impact analysis in the NHB Project EIR.

Relationship of UCSF BCH Oakland to UCSF LRDP

UCSF is one of 10 campuses in the University of California system. Each UC campus is required periodically to prepare a Long Range Development Plan (LRDP) to guide campus growth and future physical development. On November 20, 2014, the Regents adopted the UCSF 2014 LRDP. The 2014 LRDP serves as a comprehensive physical land use plan and policy document to guide the physical development of the San Francisco campus at all its campus sites, accommodating future increases in enrollment and clinical, academic, and research activities, and increased housing demand at UCSF; and meeting its projected clinical, educational and research demand. The 2014 LRDP addresses development over an approximate 20-year period, or an approximate horizon year of 2035.[1] The 2014 LRDP also included a Greenhouse Gas Reduction Strategy (GHGRS), last amended in 2021, and a commitment to continue to enhance its Transportation Demand Management (TDM) Program.

The 2014 LRDP currently includes UCSF's three primary campus sites in San Francisco at Parnassus Heights, Mission Bay and Mount Zion; buildings owned by UCSF in San Francisco (at Mission Center, 654 Minnesota Street, animal care and research facilities at Hunters Point, and Buchanan Dental Center) and a material management facility in South San Francisco; and more than a million square feet of space leased by UCSF for a variety of purposes at numerous locations in San Francisco.

The UCSF BCH Oakland campus is not included in the UCSF 2014 LRDP at the present time, and consequently, it is not subject to the LRDP's campus-wide or site-specific planning objectives. As the UCSF BCH Oakland campus site is controlled by the University, UCSF proposes to amend the 2014 LRDP to include the UCSF BCH Oakland campus. Approval of an amendment of the 2014 LRDP will be requested from the UC Regents at the same time that the NHB Project is presented to the Regents for approval.

Potential Environmental Effects of the NHB Project

Based on a preliminary review of the proposed NHB Project, UCSF has determined that the NHB Project may have a significant effect on the environment and therefore, an EIR is required. The EIR will analyze

1 With exception for the Parnassus Heights campus site, which has an approximate horizon year of 2050.

and disclose the significant environmental effects anticipated to result from implementation of the Project. Specific environmental topics that will be addressed in the EIR include:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources, including Tribal Cultural Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise and Vibration
- Population and Housing
- Public Services
- Recreation
- Transportation
- Utilities and Services Systems
- Cumulative Impacts
- Alternatives
- Growth Inducement

As the Project would not affect any mineral resources, agricultural or forestry resources, or wildfire, those topics will not be included in the EIR.

Public Review and Comment

As indicated above, this NOP is available at http://tiny.ucsf.edu/zpkbKa for a 30-day public review and comment period beginning **May 22 through June 21, 2023**.

To give written feedback on the NOP, comments should be submitted to the attention of Ms. Diane Wong via email at BCHOaklandNHB@ucsf.edu, or sent by regular mail to the address noted below. All comments must be received no later than **June 21, 2023**.

If you would like a paper copy of the NOP, please email BCHOaklandNHB@ucsf.edu or call 415-502-5952.

UCSF will hold a public EIR scoping meeting on **June 6, 2023**, beginning at **6:00 PM**. The EIR scoping meeting will be conducted via Zoom. If you are interested in attending this meeting, please register at: http://tiny.ucsf.edu/RSzXrV.

The EIR scoping meeting provides an opportunity for the community to provide verbal feedback on the NOP. This allows UCSF to learn about potential concerns early, as well as further define the issues, feasible alternatives, and potential mitigation measures that may warrant in-depth analysis in the environmental review process.

Submit comments on the NOP and EIR scoping to:

Diane Wong, Environmental Coordinator
UCSF Campus Planning
BCHOaklandNHB@ucsf.edu
OR
654 Minnesota Street
San Francisco, CA 94143

Appendix B
EIR Scoping Comments

California Department of Transportation

DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

June 21, 2023

SCH #: 2023050540
GTS #: 04-ALA-2023-00740
GTS ID: 29901
Co/Rt/Pm: ALA/24/R2.7

Diane Wong, Principal Planner
University of California, San Francisco
654 Minnesota Street
San Francisco, CA 94143

Re: UCSF Benioff Children's Hospital Oakland New Hospital Building – Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR)

Dear Diane Wong:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Project. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the May 2023 NOP.

Project Understanding

The University of California, San Francisco (UCSF) is proposing to construct a new hospital building and associated improvements at the UCSF Benioff Children's Hospital Oakland campus, located adjacent to State Route (SR)-24. The project would include the construction of a 324,000 square feet (sf) 8-story above grade (plus basement level) new hospital building; an approximately 370-stall, 5-story parking structure with a rooftop helistop; renovation and/or structural retrofitting of existing buildings within the NHB Project site; and a variety of transportation, infrastructure and landscape improvements. In total, when accounting for proposed demolition or relocation off-site, this project would provide for development of approximately 215,000 net new sf of building space; and renovation of approximately 11,000 sf of building space.

Travel Demand Analysis
With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide (*link)*.

If the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in alignment with the City's VMT policy. Projects that do not meet the screening criteria should include a detailed VMT analysis in the DEIR, which should include the following:

- VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

- A schematic illustration of walking, biking and auto conditions at the project site and study area roadways. Potential traffic safety issues to the State Transportation Network (STN) may be assessed by Caltrans via the Interim Safety Guidance (*link*).

- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

Transportation Impact Fees
Please identify project-generated travel demand and estimate the costs of transit and active transportation improvements necessitated by the proposed project; viable funding sources such as development and/or transportation impact fees should also be identified. We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT.

Construction-Related Impacts
Potential impacts to the State Right-of-Way (ROW) from project-related temporary access points should be analyzed. Mitigation for significant impacts due to construction and noise should be identified. Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, please visit Caltrans Transportation Permits (*link*).

Prior to construction, coordination may be required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the STN.

Lead Agency
As the Lead Agency, UCSF is responsible for all project mitigation, including any needed improvements to the STN. The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Equitable Access
If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

Encroachment Permit
Please be advised that any permanent work or temporary traffic control that encroaches onto Caltrans' ROW requires a Caltrans-issued encroachment permit. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating Caltrans' ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement. Your application package may be emailed to D4Permits@dot.ca.gov.

To obtain information about the most current encroachment permit process and to download the permit application, please visit Caltrans Encroachment Permits (*link*).

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email LDR-D4@dot.ca.gov.

Sincerely,

Luo Yunsheng

YUNSHENG LUO
Acting District Branch Chief
Local Development Review

c: State Clearinghouse

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento, California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 25, 2023

Diane Wong
Regents of the University of California
654 Minnesota St.
San Francisco, CA 94143

Re: 2023050540, UCSF Benioff Children's Hospital Oakland New Hospital Building, Alameda County

Dear Ms. Wong:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that 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. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides 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 effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. 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:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. 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.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).

2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.

3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).

4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:

- **a.** The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
- **b.** Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:

- **a.** If part or all of the APE has been previously surveyed for cultural resources.
- **b.** If any known cultural resources have already been recorded on or adjacent to the APE.
- **c.** If the probability is low, moderate, or high that cultural resources are located in the APE.
- **d.** If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.

- **a.** The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
- **b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:

a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.

b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.

a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.

b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.

c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Cody.Campagne@nahc.ca.gov

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

cc: State Clearinghouse

From:	Olson, Brian@DOC
To:	BCH Oakland NHB
Cc:	OLRA@DOC; OPR State Clearinghouse; Kaihara, Deanna@DOC
Subject:	UCSF Benioff Children"s Hospital Oakland New Hospital Building
Date:	Friday, June 16, 2023 12:22:44 PM
Attachments:	image001.png image002.png image003.png

This Message Is From an Untrusted Sender
You have not previously corresponded with this sender.

SCH Number
2023050540
Lead Agency
University of California, San Francisco
Document Title
UCSF Benioff Children's Hospital Oakland New Hospital Building
Document Type
NOP - Notice of Preparation of a Draft EIR
Received
5/22/2023

Hello, Diane—

Thank you for providing the subject NOP for review. This email conveys the following recommendations from CGS concerning geologic and seismic issues for the planned hospital project EIR:

1. Liquefaction Hazard
   The planned EIR should discuss liquefaction as a potential seismic hazard and provide a map and discussion of CGS Earthquake Zones of Required Investigation (EZRI) for liquefaction. CGS maps and data are available here:
   https://maps-cnra-cadoc.opendata.arcgis.com/datasets/cadoc::cgs-seismic-hazards-program-liquefaction-zones-1/about
   https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps
   https://maps.conservation.ca.gov/cgs/EQZApp/app/

Please let me know if you have any questions.

Brian Olson, CEG
Senior Engineering Geologist

@CAgeosurvey
FOLLOW US!

Seismic Hazards Program

13 Years of Public Service

California Geological Survey
320 W. 4th Street, Suite 850, Los Angeles, CA 90013
M: (213) 507-1080
E: Brian.Olson@conservation.ca.gov

"A team is not a group of people who work together.
A team is a group of people who trust each other." – Simon Sinek

From:	broklcrofts
To:	BCH Oakland NHB; Community Gov. Relations
Subject:	Issues with NOP Scoping Meeting June 6
Date:	Thursday, June 1, 2023 9:48:24 PM

Dear UCSF Community & Government Relations and Planners:

We are longtime neighbors of the Hospital and the Research Institute. Governor Newsom has lifted the Covid emergency protocols, so Zoom-only meetings for EIR purposes seem to violate the intent of EIRs, which are for the assessment of environmental impacts, by encouraging participation by all affected parties.

A combination public/zoom meeting would be a better option. A Zoom-only meeting, that by definition excludes many seniors, low-income, non-internet users, etc., restricts public particaption. Further, public meetings encourage a more democratic and open process, and are not convened simply to comply with the letter of the law (CEQA/NHPA), if indeed after the end of pandemic protocols, zoom-only meetings *do* comply.

Thanks for your prompt response.

Robert Brokl   Alfred Crofts

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DRAFT ENVIRONMENTAL IMPACT REPORT

PUBLIC SCOPING MEETING

BCH OAKLAND NEW HOSPITAL

TUESDAY, JUNE 6, 2023

VIA ZOOM WEB CONFERENCING PLATFORM

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REPORTED VIA ZOOM
BY: DEBORAH FUQUA, CSR #12948
CERTIFIED STENOGRAPHIC REPORTER

APPEARANCES

(For Public Comment Segment)

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DIANE WONG, UCSF Principal Planner, Environmental Quality Act Coordinator

JESSICA ARLINE, UCSF Associate Director, Community-Government Relations

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Tuesday, June 6, 2023 6:00 p.m.

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P R O C E E D I N G S

JESSICA ARLINE: Hello, everyone. Thanks for joining us this evening. We're going to give it a minute or two to let others join before we go ahead and kick-off the meeting, so just hold tight for a bit, please.

(Pause in proceedings)

(Presentation not reported nor transcribed)

DIANE WONG: Thank you.

So we will now start the public comment portion of the meeting. My name is Diane Wong. I'm with the UCSF Campus Planning Office. We'll start with just a few reminders.

The public comments tonight will be transcribed by a court reporter, and a transcript of the comments as well as written comments we receive during the Notice of Preparation Public Review Period will be included in Draft EIR. Comments tonight must be spoken rather than submitted through the chat in order to be captured by the court reporter. And, again, comments may be submitted in writing; however, if you need to contact the host for a technical issue, please do use the chat button to message the host.

Next slide, please.

So just a little instruction about how to do this. So if you would like to speak and you're working on a computer, please raise your digital hand by clicking on the reactions button at the bottom of the screen or, on older Zoom functions, at the bottom of the participants list. If you're on a phone, you can hit star 9 to raise your digital hand. I'll request that you unmute when it's your turn to speak.

Please begin by stating your first and last name. And to ensure that everyone has an opportunity to speak tonight, please limit your remarks to two minutes. You'll get a little prompt when you're near the end of your time.

Commenters will be called in the order of the hand raised. Do not lower your hand as you will lose your place in the queue. And please focus your comments on potential environmental impacts.

We will not respond to your comments tonight. Your comments will inform the preparation of the Draft EIR.

So we'll go ahead and leave this slide on the screen in case we have any folks who are joining late. So if anyone would like to speak, we're now opening it up for public comment. Please go ahead and raise your digital hand by either clicking on the reactions button, or if you're on a phone, you can hit star 9.

Would anyone like to be the brave first person to speak? Once things get going, usually we have a long line of people.

JOVITA PAJARILLO: This is Jovita, and I don't know how to raise my hand. I was trying to --

DIANE WONG: Oh.

JOVITA PAJARILLO: -- do it in the participants chat. Is it okay if I speak?

DIANE WONG: Yes, please do.

JOVITA PAJARILLO: Okay. I just want to get the ball rolling. I mean, our house is at the corner of 53rd and Dover. And just the initial review I did of the NOP is -- I just want to reiterate that we are not part of the campus footprint. So you need to carve us out because we are the remaining privately owned property piece in this whole endeavor. And so my questions are, you -- I apologize because I haven't read the NOP, the Draft EIR.

I'm just concerned about traffic and security. We've had uptick in crime in this area. And I know we're not talking about construction until 2027, but that remains a concern. I don't know how you are coordinating this with your sheriff department, UC Benioff folks.

And I also want to know, in terms of looking at CEQA, what are we looking at in terms of benefits to the community? I mean, we're going to be enduring years, three years at least, of construction. How is that going to help the community in terms of, you know, who we are as a neighborhood or, you know, our social culture? You know, where is the good faith that there will be minimal impact to us as best as you can? I just want to put it out there because it is a concern for my husband and I because we're at ground zero.

And with an eight-story building that you're proposing, how do you incorporate wildlife considerations? I mean, there is migratory birds that come through here. And so I just don't know what -- what kind of thought you've given to that. So that's one of my comments.

DIANE WONG: Thank you, Jovita. And I should have asked you to state your first and last name for the court reporter.

JOVITA PAJARILLO: Oh, sorry. My name is Jovita, that's J-O-V-I-T-A, Pajarillo, that's P-, as in Patrick, -A-J-A-R-I-L-L-O. And we are at 658 53rd Street.

DIANE WONG: Thank you very much.

JOVITA PAJARILLO: You're welcome.

DIANE WONG: All right. Any other commenters? Please raise your hand.

Or if you're having trouble, you can just speak up.

Katina Ancar? I apologize if I'm mispronouncing your name.

KATINA ANCAR: Yes, this is Katina Ancar. My first name is K-A-T-I-N-A. My last name is A-N-C-A-R.

I guess I have three comments. One is questions about staging for the building. I know in the various diagrams in the NOP there's a section for a temporary loading dock for the building.

But with such a big building being built, I'm concerned about where the construction will be staged as well as the impact on traffic, both during the building of the new hospital and afterwards. As traffic comes off of Highway 24, there tends to be a lot of backup. It's gotten worse since a stoplight was put at the corner of, I think, 53rd and MLK. So I'm wondering how the building will impact the traffic not just coming off of MLK -- off of 24 onto MLK but around the rest of the neighborhood.

The other thing -- and I guess I just want to reiterate what Jovita said, which is not necessarily an environmental impact, but it is a neighborhood impact. The diagram shows that house on the corner of 53rd as part of the -- as part of the hospital footprint, and it's not. The hospital really kind of impinges on the neighborhood more than anything.

So I appreciate this process and all the information that's being shared. But I would caution and hope that the hospital continues to understand that the footprint of the hospital doesn't -- there are not buildings within the footprint of the hospital. The hospital is really impinging on the neighborhood. And I hope that the hospital continues to work in good faith in the way that it has during the earlier parts of the process.

DIANE WONG: Thank you, Katina.

Would anyone else like to speak?

DIANE WONG: All right. We'll give it a little -- a little more time in case folks were thinking about their comments. If you'd like to speak, please raise your hand. If you're on the phone, star 9 to raise your digital hand.

(Pause in proceedings)

DIANE WONG: All right. Well, not seeing any hands raised, at this point, we'll go ahead and close the public comment portion of the meeting.

Next slide.

So the next step is to -- is that the NOP is available online at the link provided. And we'll go ahead and put that in the chat. And if you'd like to provide written comments, please send an e-mail to the e-mail address as noted, or you can submit written comments to me at the address noted. This is all information available in the Notice of Preparation. Comments are due by June 21st, and the Draft EIR is anticipated to be published in late 2023.

Next slide.

Turn it back over to Jessica.

JESSICA ARLINE: Thanks, Diane.

Again, hi, everyone. This is Jessica.

Just also want to let you know that we will be holding another community meeting specific to our modernization project next Wednesday, June 14th. And this will be around our ASB and construction management plan. So I hope all interested parties will join us next Wednesday for another thrilling meeting.

I see a hand raised.

Hi, Jovita.

JOVITA PAJARILLO: Hi. I -- you know, I think you guys are doing so terrifically to keep the community engaged and informed. But you know, there's so much information to absorb. I mean, we're -- obviously some of us are still working our jobs. You know, look at the NOP is time consuming. And I know you are being very considerate on how we can access the document and even to receive a printed version of it.

But I -- you know, is there a website that we can go to just to get, you know, information on the next community meeting, you know, getting on the e-mail list and, you know, maybe even going back and forth in dialog or something or getting a timeline and such.

So if you have that, I just don't know what it is.

JESSICA ARLINE: Jovita, we have a web site where we're posting community meetings. And that's where you can access information from that perspective. But as far as project plans and stuff, we don't have anything readily posted at this moment.

You know, of course, we have a listserv as --

JOVITA PAJARILLO: Okay.

JESSICA ARLINE: -- to send meeting invites out to and stuff like that. But --

JOVITA PAJARILLO: Yeah.

JESSICA ARLINE: -- I appreciate your comment. And we'll probably --

JOVITA PAJARILLO: Yeah, I --

JESSICA ARLINE: -- plan on something like that for you all.

JOVITA PAJARILLO: I just like having a go-to, one-stop shop kind of thing. To --

JESSICA ARLINE: Yeah.

JOVITA PAJARILLO: It's the convenience of it all for us because everybody's got everything else going on. Just a one-stop shop that we could like get scheduled for the next community meetings and other relevant, pertinent materials and links that would be useful to help us all be more informed and prepared to engage -- because I know that you gave this wonderful presentation. But it's like I haven't read the NOP. And I know you had it.

But it's just -- if there was just a place that we could go for information to prepare ourselves.

DIANE WONG: I included in the chat a link to the website for new hospital project. And there are other links available on that web page where you can find past presentations, community meeting information.

JOVITA PAJARILLO: Okay.

DIANE WONG: So hopefully you can navigate your way. If not, let one of us know.

JOVITA PAJARILLO: All right. So this is

Diane; I appreciate that. Is it Diane I'm speaking to?

DIANE WONG: Diane, yes.

JOVITA PAJARILLO: Thank you.

DIANE WONG: So -- and if you have questions, you can -- you can e-mail Jessica as well.

JOVITA PAJARILLO: Of course.

JESSICA ARLINE: Okay. So does that conclude our meeting this evening then, I think -- if there aren't any more comments. We really appreciate you joining us. We hope you continue to join us as we go through this process for the modernization project.

And, again, if you have more questions or things pop up that you maybe just, you know, haven't thought about quite yet, please don't hesitate to reach out to me at any point in time. And we will be responsive to your requests. All right?

Okay. Good talk. Thank you, everyone --

DIANE WONG: Thank you. Thank you.

JESSICA ARLINE: -- for joining us, and we hope you have a good evening. Bye.

(Whereupon, the proceedings concluded at 6:38 p.m.)

STATE OF CALIFORNIA)
)
COUNTY OF MARIN)

I, DEBORAH FUQUA, a Certified Shorthand Reporter of the State of California, do hereby certify that the foregoing proceedings were reported via Zoom web conferencing by me, a disinterested person, and thereafter transcribed under my direction into typewriting and which typewriting is a true and correct transcription of said proceedings.

I further certify that I am not of counsel or attorney for either or any of the parties in the foregoing proceeding and caption named nor in any way interested in the outcome of the cause named in said caption.

Dated the 21st of June, 2023.

DEBORAH FUQUA

CSR NO. 12948

Appendix BIO
Biological Resources

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Invertebrates			
Western bumble bee (B*ombus occidentalis*)	--/CaE	Found in any area with sufficient flowers for nutrition, and underground burrows for nest for the queen.	**Low.** The Project site provides poor habitat for this species.
San Bruno elfin butterfly (*Callophrys mossii bayensis*)	FE/--	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is *Sedum spathulifolium*.	**Not Present.** Project site is outside species' range.
Monarch butterfly (*Danaus plexippus plexippus)*	CaE/-- overwintering sites protected	Monarch butterfly breeding and larval habitat is on milkweed plants in open fields and meadows. During winter colonies stay in eucalyptus, Monterey cypress and other trees in California and at high altitudes in Mexico.	**Low (overwintering).** Suitable overwintering habitat is not present at Project site.
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT/--	Found on shallow, serpentine-derived soil. The primary larvae host plant is dwarf plantain (*Plantago erecta*). When this plant dries, purple owl's clover (*Castilleja densiflora* or *C. exserta*) is the secondary host plant.	**Low.** Host plant not present at Project site.
Mission blue butterfly (*Icaricia icarioides missionensis*)	FE/--	Host plants are silver lupine (*Lupinus albifrons*), summer lupine (*Lupinus formosus*), and varicolor lupine *(Lupinus variicolor*). Historical distribution encompassed coastal scrub/grassland habitat of the northern San Francisco Peninsula and Marin County. Remaining populations found in only a few locations: Marin Headlands, Skyline ridges, San Bruno Mountain, and at Twin Peaks.	**Not Present.** Project site is outside species' range.
Callippe silverspot butterfly (*Speyeria callippe callippe*)	FE/--	Hostplant is *Viola pedunculata*. Most adults found on East-facing slopes; males congregate on hilltops in search of females.	**Low.** Host plant not present at Project site.
Amphibians			
California tiger salamander (*Ambystoma californiense)*	FT/SSC	Annual grasslands and oak woodlands with ephemeral pools for breeding in rainy season. Estivates in underground small mammal burrows in dry weather.	**Not Present.** Suitable grassland habitat is not present at Project site.
California giant salamander (*Dicamptodon ensatus*)	--/SSC	Vernal or temporary pools in annual grasslands, or open stages of woodlands. Typically adults use mammal burrows.	**Not Present.** Suitable aquatic habitat is not present at Project site.
California red-legged frog (*Rana draytonii*)	FT/SSC	Streams, freshwater pools, and ponds with overhanging vegetation. Also found in woods adjacent to streams. Requires permanent or ephemeral water sources such as reservoirs and slow moving streams and needs pools of >0.5 m depth for breeding.	**Not Present.** Suitable aquatic habitat is not present at Project site.
Foothill yellow-legged frog (*Rana boylii*)	--/CE	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats; requires at least some cobble-sized substrate for egg-laying.	**Not Present.** Suitable aquatic habitat is not present at Project site.
Reptiles			
Western pond turtle (*Actinemys marmorata*)	--/SSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation <6,000' in elevation. Require basking sites and upland habitat for egg laying (sandy banks and open, grassy fields)	**Not Present.** Suitable aquatic habitat is not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Reptiles (cont.)			
Alameda whipsnake (*Masticophis lateralis euryxanthus)*	FT/ST	Mixed chaparral, coastal scrub, annual grassland or oak woodland with rock piles for cover.	**Low.** Suitable rocky natural habitat is not present at Project site.
Birds			
Short-eared owl (*Asio flammeus*)	--/SSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	**Low.** Suitable marsh or meadow habitat is not present at Project site.
Burrowing owl (*Athene cunicularia*)	--/SSC	Nests and forages in low-growing grasslands with burrowing mammals.	**Not Present.** Suitable open habitat is not present at Project site.
Western snowy plover (*Charadrius alexandrines nivosus*)	FT/SSC	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Not Present.** Shoreline habitat is not present at Project site.
Northern harrier (*Circus hudsonius*)	--/SSC	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Not Present.** Suitable marsh habitat is not present at Project site.
White-tailed kite (*Elanus leucurus*)	--/CFP	Nests in shrubs and trees adjacent to grasslands, forages over grasslands and agricultural lands	**Low.** Suitable open habitat not present present at Project site.
American peregrine falcon (*Falco peregrinus anatum*)	BCC/CFP	Nest consists of a scrape or a depression on rock, cliff or building ledge over an open site. Catches prey in flight, including small birds, bats or mammals.	**Moderate.** May nest on tall buildings and forage in surrounding area.
California black rail (*Laterallus jamaicensis*)	BCC/ST/CFP	Found in salt, brackish and freshwater marsh with dense vegetation for nesting habitat.	**Not Present.** Suitable marsh habitat is not present at Project site.
Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)	BCC/SSC	Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Not Present.** Suitable marsh habitat is not present at Project site.
Alameda song sparrow (*Melospiza melodia pusillula*)	BCC/SSC	Salt marshes. Inhabits *Sarcocornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Sarcocornia*.	**Not Present.** Suitable marsh habitat is not present at Project site.
San Pablo song sparrow (*Melospiza melodia samuelis*)	BCC/SSC	Inhabits tidal sloughs in the *Salicornia* marshes; nests in *Grindelia* bordering slough channels.	**Not Present.** Site is outside this subspecies’ range.
Bank swallow (*Riparia riparia*)	--/FT	Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting holes.	**Low.** Suitable nesting habitat not present at Project site, but may fly over.
Ridgway’s rail [California clapper rail] (*Rallus obsoletus*)	FE/SE/CFP	Found in salt and brackish marsh with well-defined tidal channels and dense growth of pickleweed; feeds on invertebrates in mud-bottomed sloughs.	**Not Present.** Suitable marsh habitat is not present at Project site..
California least tern (*Sternula antillarum browni*)	FE/SE/CFP	Breeds on shores of San Francisco Bay; nests are situated on barren to sparsely vegetated places near water, normally on sandy or gravelly substrates or abandoned salt flats.	**Not Present.** Suitable sandy or gravelly habitat is not present at Project site.
Yellow-headed blackbird (*Xanthocephalus xanthocephalus*)	--/SSC	Nests in cattail marshes with nests attached to marsh vegetation. Colonial nesters, often sharing their habitat closely with red-winged blackbird (*Agelaius phoeniceus*).	**Not Present.** Suitable marsh habitat is not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Mammals			
Pallid bat (*Antrozous pallidus*)	--/SSC	Grasslands, shrublands, woodlands, and forests at lower elevations Common in arid regions with rocky outcroppings, particularly near water. Roosts in rock crevices, buildings, and under bridges. Very sensitive to disturbance.	**Low**. Suitable roosting habitat present in disused buildings on campus. Not expected to breed but may be present on a transient basis.
Hoary bat (*Lasiurus cinereus*)	--/--/WBWG Medium	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Low**. Suitable roosting habitat present in large trees. Not expected to breed but may be present on a transient basis.
Western red bat (*Lasiurus blossevillii*)	WBWG High	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges & mosaics with trees that are protected from above & open below with open areas for foraging.	**Low**. Suitable roosting habitat present in trees.
Townsend's big-eared bat (*Corynorhinus townsendii*)	--/SSC	Roosts in caves and cave-like habitats, with colonies occurring in areas dominated by exposed, cavity forming rock and/or historic mining districts. They prefer open roosting areas, not cracks or crevices, in forests, chaparral, grassland, desert or scrub areas.	**Low.** Suitable roosting habitat is present on walls and ceilings of disused buildings, but species is sensitive to human disturbance.
Big free-tailed bat (*Nyctinomops macrotis*)	--/SSC	Roosts in buildings, caves, and occasionally in holes in trees, also in crevices in high cliffs or rock outcrops. Resident in southwestern U.S., occasional records in the region.	**Low.** Species is not resident in northern California.
San Pablo vole (*Microtus californicus sanpabloensis*)	--/SSC	Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow	**Not Present.** Site is not within species' range.
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE/SE/CFP	Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**Not Present**. Suitable habitat is not present at Project site.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens)*	--/SSC	Forest habitats of moderate canopy and moderate to dense understory. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials	**Not Present.** Site is not within species' range.
American badger (*Taxidea taxus*)	--/SSC	Herbaceous, shrub, and open stages of most habitats with dry, friable soils.	**Low.** Suitable open habitat not present at Project site.
Plants			
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	--/--/1B.2	Cismontane woodland, valley and foothill grassland, on clay, volcanic, often serpentinite soils. May – June. 52 – 305 m.	**Low.** Suitable soils not present at Project site.
Napa false indigo (*Amorpha californica var. napensis*)	--/--/1B.2	Observations recorded in Monterey County and San Francisco Bay Area. Broadleafed upland forest, chaparral, or cismontane woodland. Perennial deciduous shrub. April - July. 30 – 735m	**Not Present.** Suitable habitat not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Plants (cont.)			
Bent-flowered fiddleneck (*Amsinckia lunaris*)	--/--/1B.2	Observed in cismontane woodland, valley and foothill grassland, or coastal bluff scrub. March - June. 3 – 500m	**Not Present.** Suitable habitat not present at Project site.
Franciscan manzanita (*Arctostaphylos franciscana*)	FE/--/1B.1	Serpentine outcrops in chaparral. February - April. 30 – 215m	**Not Present.** Suitable habitat not present at Project site.
Marsh sandwort (*Arenaria paludicola*)	FE/SE/1B.1	Freshwater or brackish marsh, wetlands and riparian areas. May to August. 3 – 170 m.	**Not Present.** Suitable habitat not present at Project site.
Alkali-milk vetch (*Astragalus tener* var. *tener*)	--/--/1B.2	Alkali playa and flats, valley, annual, and foothill grassland, vernal pools, low ground, and flooded lands. March – June. 1-170 m	**Not Present.** Suitable habitat not present at Project site.
Tiburon mariposa –lily (*Calochortus tiburonensis*)	--/--/1B.1	Valley and foothill grassland on open, rocky, slopes in serpentine grassland. March – June. 50-150 m	**Not Present.** Endemic to Ring Mtn. Preserve on the Tiburon Peninsula.
Bristly sedge (*Carex comosa*)	--/--/2B.1	Lake margins, freshwater wetlands, edges of water. May-September -5-1620 m	**Not Present.** Suitable habitat not present at Project site.
Northern meadow sedge (*Carex praticola*)	--/--/2B.2	Moist to wet meadows and seeps. Perennial herb. May – July. 0-3200 m	**Not Present.** Suitable habitat not present at Project site.
Tiburon paintbrush (*Castilleja affinis* var. *neglecta*)	FE/ST/1B.2	Open serpentine grassland slopes. Perennial herb (hemiparasitic). April – June. 60-400 m	**Not Present.** Suitable habitat not present at Project site.
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	--/--/1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (salt), valley and foothill grassland (mesic), often alkaline. May – November. 0 - 420 m.	**Not Present.** Suitable habitat not present at Project site.
Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*)	--/--/1B.2	Recorded from San Luis Obispo County north to Humboldt County. Coastal salt marsh, wetland-riparian. Annual herb (hemiparasitic). June – October. 0 – 10 m.	**Not Present.** Suitable habitat not present at Project site.
San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*)	--/--/1B.2	Observed as far south as Monterey County, but most recordings are in the San Francisco Bay Area. Coastal Strand, Coastal Prairie, Northern Coastal Scrub. Annual herb.	**Not Present.** Suitable habitat not present at Project site.
San Francisco Bay spineflower (*Chorizanthe robusta* var. *robusta*)	FE/--/1B.1	Dune, openings in coastal strands, maritime coastal scrub, valley and foothill grassland, in sandy or gravelly areas. Annual herb. April to September. 3 – 300 m.	**Not Present.** Suitable habitat not present at Project site.
Franciscan thistle (*Cirsium andrewsii*)	--/--/1B.2	Found in mesic, sometimes serpentinite. Broadleafed upland forest, coastal bluff scrub, coastal prairie, and coastal scrub in mesic areas, sometimes serpentinite. Perennial herb. March – July. 0 – 150 m.	**Not Present.** Suitable habitat not present at Project site.
Compact cobwebby thistle (*Cirsium occidentale* var. *compactum*)	--/--/1B.2	Coastal strand, coastal prairie, chaparral, northern coastal scrub. Perennial herb. April – June. 5 – 150 m.	**Not Present.** Suitable habitat not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Plants (cont.)			
Presidio clarkia (*Clarkia franciscana*)	FE/SE/1B.1	Serpentine outcrops in grassland or scrub. May – June. 20-305 m.	**Not Present.** Suitable habitat not present at Project site.
Round-headed Chinese houses (*Collinsia corymbosa*)	--/--/1B.2	Coastal strand, dunes. Annual herb. April – June. 0 -20 m.	**Not Present.** Suitable habitat not present at Project site.
San Francisco collinsia (*Collinsia multicolor*)	--/--/1B.2	Northern coastal scrub, closed-cone pine forest, sometimes serpentinite. March – May. 30 -250 m.	**Not Present.** Suitable habitat not present at Project site.
Western leatherwood (*Dirca occidentalis*)	--/--/1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen & foothill woodland communities. 25-425 m.	**Not Present.** Suitable habitat not present at Project site.
Tiburon buckwheat (*Eriogonum luteolum* var. *caninum*)	--/--/1B.2	Observations recorded in the San Francisco Bay Area up to Mendocino County. Coastal prairie, chaparral, and valley grassland. Annual herb. May-September. 0-700m	**Not Present.** Suitable habitat not present at Project site.
Minute pocket moss (*Fissidens pauperculus*)	--/--/1B.2	Observations recorded along the west coast of California from Santa Cruz County to Del Norte, and east to Butte County. Moss grows on damp soil along the coast and dry streambeds/ streambanks in coniferous forests. 10 -1024 m.	**Not Present.** Suitable habitat not present at Project site.
Marin checker lily (*Fritillaria lanceolata var. tristulis*)	--/--/1B.2	Perennial bulbiferous herb. Observations recorded in San Mateo and Marin County in canyons to riparian areas in northern coastal scrub, evergreen woodlands, and serpentine rock outcrops. February – May. 15-150m	**Not Present.** Project site outside species' known range.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine; usually on clay soils, in grassland. February- April. 3-410 m.	**Not Present.** Suitable habitat not present at Project site.
Blue coast gilia (*Gilia capitata ssp. chamissonis*)	--/--/1B.1	Coastal dunes, coastal scrub. Annual herb, blooms. April – July. 2 – 200 m.	**Not Present.** Suitable habitat not present at Project site.
Diablo helianthella (*Helianthella castanea*)	--/--/1B.2	South Bay, East Bay, and North Bay in chaparral, foothill woodland, northern coastal scrub, riparian woodland and valley grassland, usually in rocky soils in partial shade. Perennial herb. Blooms March – June. 60 -1300 m.	**Not Present.** Suitable habitat not present at Project site.
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)	--/--/1B.2	Recorded observations have been made as far south as Los Angeles County, but primarily found in the Bay Area, and along the west coast of California up to Del Norte. Also in El Dorado County. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. April – November. 20-560 m.	**Not Present.** Suitable habitat not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Plants (cont.)			
Marin western flax (*Hesperolinon congestum*)	FT/ST/1B.1	Alameda, San Mateo, San Francisco, and Marin County with an additional observation recorded in Colusa County in chaparral and valley grassland. Annual herb. 60-370 m.	**Not Present.** Suitable habitat not present at Project site.
Santa Cruz tarplant (*Holocarpha macradenia*)	FT/SE/1B.1	Monterey and Santa Cruz County, as well as the North Bay and East Bay in coastal prairie and valley grassland. Annual herb. June – October. 10-220 m.	**Not Present.** Suitable habitat not present at Project site.
Thin-lobed horkelia (*Horkelia tenuiloba*)	--/--/1B.2	San Luis Obispo north to Mendocino County and east to Colusa County in chaparral, valley and foothill grassland, and sandy, mesic openings in upland forest. Perennial herb. 50 – 500 m.	**Not Present.** Suitable habitat not present at Project site.
San Francisco lessingia (*Lessingia germanorum*)	FE/SE/1B.1	Northern coastal scrub, dunes. Annual herb. July – November. 25 – 110 m.	**Not Present.** Suitable habitat not present at Project site.
Contra Costa goldfields (*Lasthenia conjugens)*	FE/-/1B.1		
Beach layia (*Layia carnosa)*	FT/SE/1B.1		
Marsh microseris (*Microseris paludosa*)	--/--/1B.2	Found along the west coast from San Luis Obispo County to Mendocino County. Occurs in northern coastal scrub and closed-cone pine forest. Perennial herb. April – June. 5-300m	**Not Present.** Suitable habitat not present at Project site.
White-rayed pentachaeta (*Pentachaeta bellidiflora*)	FE/SE/1B.1	Annual herb. Along the west coast from Monterey County to Marin County – none recorded in SF County, in valley grassland. March – May. 35-610m.	**Not Present.** Suitable habitat not present at Project site.
Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*)	--/--/1B.2	Mesic sites in chaparral, coastal scrub, coastal prairie. 15-100 m.	**Not Present.** Suitable habitat not present at Project site.
Hairless popcornflower (*Plagiobothrys glaber*)	--/--/1A	South and East Bay, and Marin County in coastal salt marsh, wetland-riparian meadows, salt-marsh, coastal. Occurs almost always under natural conditions in wetlands. Annual herb. March – May. 5-125m.	**Not Present.** Suitable habitat not present at Project site.
Oregon polemonium (*Polemonium carneum*)	--/--/2B.2	Coastal prairie and scrub in lower montane coniferous forest. April – September. 0-1830m	**Not Present.** Suitable habitat not present at Project site.
Adobe sanicle (*Sanicula maritima*)	--/--/1B.1	Occurs in chaparral, coastal prairie, meadows and seeps, and grassland in clay, serpentinite. Perennial herb. February – May. 30-240m.	**Not Present.** Suitable habitat not present at Project site.
Marin checkerbloom (*Sidalcea hickmanii* ssp.*virdis*)	--/--/1B.2	Serpentine soils in chaparral habitats. May – June. 50-430m.	**Not Present.** Suitable habitat not present at Project site.

TABLE BIO-1
SPECIAL-STATUS SPECIES WITH POTENTIAL TO OCCUR AT THE NHB SITE

Name	Listing Status	General Habitat Requirements	Potential for Species Occurrence at the Hospital Site
Plants (cont.)			
San Francisco campion (*Silene verecunda* ssp. *verecunda*)	--/--/1B.2	Sandy habitats in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and grassland. February – August. 30-645m	**Not Present.** Suitable habitat is not present at hospital site.
Tiburon jewelflower (*Streptanthus glandulosus* ssp. *niger*)	FE/SE/1B.1	Shallow, rocky serpentine slopes in grassland. May-June. 30-150m.	**Not Present.** Suitable habitat not present at Project site.
Two-fork clover (*Trifolium amoenum*)	FE/--/1B.1	South Bay (Santa Clara/San Mateo), East Bay and North Bay in valley grassland, wetland-riparian. Sometimes on serpentine soil, open sunny sites, swales. Most recently sighted on roadside and eroding cliff face. Annual herb. April-June. 5-415m.	**Not Present.** Suitable habitat not present at Project site.
Saline clover (*Trifolium hydrophilum*)	--/--/1B.2	Mesic, alkaline sites. April-June. 1-335 m.	**Not Present.** Suitable habitat not present at Project site.
Coastal triquetrella (*Triquetrella californica*)	--/--/1B.2	Grows within 30m of the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. Moss. 10-100 m.	**Not Present.** Suitable habitat not present at Project site.

STATUS CODES:

USFWS (U.S. Fish and Wildlife Service)
FE = Listed as Endangered by the Federal Government
FT = Listed as Threatened by the Federal Government.
FC = Listed as Candidate
BCC = USFWS Bird of Conservation Concern

CDFW (California Department of Fish and Wildlife)
SE = Listed as Endangered by the State of California
ST = Listed as Threatened by the State of California
CaE = Candidate Endangered by the State of California
CaT = Candidate Threatened by the State of California
CFP = California Fully Protected species
SSC = Species of Special Concern
WBWG = Western Bat Working Group

California Rare Plant Rank
Rank 1A=Plants presumed extinct in California
Rank 1B=Plants rare, Threatened, or Endangered in California and elsewhere
Rank 2= Plants rare, Threatened, or Endangered in California but more common elsewhere
Rank 3= Plants about which more information is needed
Rank 4= Plants of limited distribution
An extension reflecting the level of threat to each species is appended to each rarity category as follows:
.1 – Seriously endangered in California
.2 – Fairly endangered in California
.3 – Not very endangered in California

POTENTIAL TO OCCUR CATEGORIES:

Not Present = The hospital site and/or immediate vicinity does not support suitable habitat for a particular species. Campus site may be outside of the species' known range.
Low Potential = The hospital site and/or immediate vicinity only provides limited habitat. The species' known range may be outside of the plan area.
Moderate Potential = The hospital site and/or immediate vicinity provide suitable habitat.
High Potential = The hospital site and/or immediate vicinity provides ideal habitat conditions or the species has been observed.

SOURCES: CDFW 2023; CNPS 2023; USFWS 2023: Oakland East, Oakland West, San Francisco North, San Francisco South, Briones Valley, Richmond, Hunters Point, San Leandro, San Quentin

Appendix CUL

Cultural Resources

- Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I (Page & Turnbull)
- Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard (Page & Turnbull)
- Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis (Page & Turnbull)
- State of California Department of Parks and Recreation Form 523 Record (DPR 523) for the 55th and Dover Residential District (Page & Turnbull)
- UCSF Benioff Children's Hospital Oakland New Hospital Building Project Oakland Cultural Heritage Survey Evaluation Sheet
- UCSF Benioff Children's Hospital Oakland New Hospital Building Project Historic Resources Technical Report (ESA)

CUL-1 Oakland Children’s Hospital and Research Center Historic Resource Evaluation Part I (Page & Turnbull)

OAKLAND CHILDREN'S HOSPITAL AND RESEARCH CENTER

HISTORIC RESOURCE EVALUATION PART I

OAKLAND, CALIFORNIA
[13019]

Prepared for
LSA ASSOCIATES, INC.

PAGE & TURNBULL
imagining change in historic environments through design, research, and technology

AUGUST 5, 2013

FINAL

TABLE OF CONTENTS

I. INTRODUCTION

This Historic Resource Evaluation (HRE) has been prepared at the request of LSA Associates, Inc. (LSA) for the Children's Hospital and Research Center Oakland (Children's Hospital) located at 747 52nd Street. The report also evaluates fourteen residential properties located in proximity to the hospital: 682, 688, and 720 52nd Street; 665, 671, 675, 677-679, 685-689, 707, and 715 53rd Street; 5203, 5212-5214, and 5225 Dover Street; and 5204 Martin Luther King Jr. Way **(Figure 1)**. The report does <u>not</u> study the Children's Hospital Oakland Research Institute (CHORI) campus at 5700 Martin Luther King Jr. Way.

Figure 1. Aerial photograph of study site with hospital highlighted in red and nearby residences, mixed-use, and office buildings are highlighted in green. Source: Google Maps, altered by Page & Turnbull

The Children's Hospital and Research Center Oakland is a complex of medical-use buildings located on a roughly triangular site in the Temescal neighborhood of Oakland. The site is bounded by 53rd Street to the north, the Grove Shafter Freeway (State Route 24) to the east and south, and Martin Luther King Jr. Way to the west. The complex spans several Alameda County Assessor's parcels (14-1206-26-1, 14-1205-19-1, and 14-1204-14-5) and is comprised of three two- to five-story agglomerative buildings as well as several portable buildings and ancillary structures. The oldest building in the hospital complex, historically known as the Baby Hospital and now commonly referred to as the A/B Wing, was designed by Edward W. Cannon and constructed in 1926.[1] The first addition to the A/B Wing (Baby Hospital) was constructed in 1946, and since then the hospital

[1] For consistency, this HRE refers to this building by both names throughout the document.

has continued to expand through demolition, reconstruction, additions and new construction. The multi-structure complex covers nearly the entire site, and serves as the main treatment facility for Children's Hospital.

The additional fourteen properties outside the Hospital complex that are included in this evaluation are also located in the City of Oakland's Temescal neighborhood, proximate to the north and east of the Children's Hospital complex. The properties are located along 52nd Street, 53rd Street, Dover Street, and Martin Luther King Jr. Way, and include the following Alameda County Assessor's parcels:

- 682 52nd Street: APN 14-1215-19
- 688 52nd Street: APN 14-1215-20
- 720 52nd Street: APN 14-1206-04
- 665 53rd Street: APN 14-1215-28-03
- 671 53rd Street: APN 14-1215-27-02
- 675 53rd Street: APN 14-1215-26
- 677-679 53rd Street: APN 14-1215-25
- 685-689 53rd Street: APN 14-1215-24
- 707 53rd Street: APN 14-1206-28
- 715 53rd Street: APN 14-1206-27
- 5203 Dover Street: APN 14-1206-03
- 5212-5214 Dover Street: APN 14-1215-21-01
- 5225 Dover Street: APN 14-1206-26-01
- 5204 Martin Luther King Jr. Way: APN 14-1206-25

These properties include twelve one- to two-story residential buildings built from 1905 to 1922 for independent owners by various architects and builders, one mixed use residential and commercial building (685-689 53rd Street), and one one-story office building built by the Children's Hospital for their marketing department after 1985 (665 53rd Street). Some of the residential buildings included in the evaluation continue their historic function as residences, and some are currently used as hospital-related offices. Thirteen of the fourteen adjacent properties are located within the 55th and Dover Residential District, a City of Oakland Local Historic District (Area of Secondary Importance).

This HRE provides a historic context statement and architectural descriptions for all Children's Hospital buildings and the fourteen additional proximate properties. It includes information about the existing historical status of each building and provides, for each building found to be 45 years old or older, evaluation for historic significance and inclusion in the California Register of Historical Resources (California Register) and as a City of Oakland Designated Historic Property. It also evaluates the Children's Hospital complex, including a mature magnolia tree located at the site, as a potentially significant historic district for the California Register and as a City of Oakland Local Historic District. The residential and commercial properties in the adjacent Temescal neighborhood are evaluated for their eligibility for individual listing in the California Register and as Oakland Designated Historic Properties.

A. METHODOLOGY

This HRE was completed to inform the potential redevelopment of the Children's Hospital complex and the area in the vicinity of Dover and 52nd streets. To prepare this HRE, Page & Turnbull conducted an intensive-level architectural survey, extensive historical research, and an evaluation of the historic significance of each building found to be 45 years old or older. In greater detail, the following methods were used:

- Page & Turnbull surveyed and photographed the exterior of all Children's Hospital buildings and the fourteen adjacent properties in May 2013. Interior access was gained only for the Children's Hospital main building complex at 747 52nd Street. For the additional properties, interior features were not examined or evaluated.

- Research was conducted at select local repositories, including the Oakland Cultural Heritage Survey, Oakland History Room at the Oakland Public Library, the San Francisco Public Library, and the Bancroft Library at the University of California, Berkeley. Additional information was gathered from Children's Hospital records, census records, voter registrations, and Page & Turnbull's in-house archive. Census records and Sanborn Fire Insurance Maps were used to their most recent availability. Page & Turnbull also consulted with Betty Marvin, Planner with the City of Oakland's Cultural Heritage Survey.

- Page & Turnbull documented and evaluated all buildings that are at least 45 years old. The National Park Service recognizes the threshold of 50 years for a property to become potentially historically significant, and 45 years is a common threshold used by cultural resource management practitioners for lengthening the useful shelf life of a survey report. For each building 45 years old or older, evaluation of eligibility for listing in the California Register and as a City of Oakland Designated Historic Property was completed. The latter was completed using City of Oakland Evaluation Sheets for Landmark Eligibility All evaluations were performed by professional staff that meet or exceed the Secretary of the Interior's Professional Qualification Standards in Architectural History.

B. EVALUATION CRITERIA

The California Register of Historical Resources

The California Register of Historical Resources (California Register) is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the California Register through a number of methods. State Historical Landmarks and National Register-eligible properties (both listed and formal determinations of eligibility) are automatically listed in the California Register by local governments, private organizations, or citizens. Properties can also be nominated to the California Register by local governments, private organizations, or citizens. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register of Historic Places.

In order for a property to be eligible for listing in the California Register, it must be found significant under one or more of the following criteria:

> *Criterion 1 (Event):* Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
>
> *Criterion 2 (Person):* Resources that are associated with the lives of persons important to local, California, or national history.
>
> *Criterion 3 (Architecture):* Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possess high artistic values.
>
> *Criterion 4 (Information Potential):* Resources or sites that have yielded or have the potential to yield information important to the prehistory or history of the local area, California or the nation.

Integrity

The concept of integrity is essential to identifying the important physical characteristics of historic resources and hence, evaluating adverse change. For the purposes of the California Register, integrity is defined as "the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance" (California Code of Regulations Title 14, Chapter 11.5). A property is examined for seven variables, or aspects, that together comprise integrity. These aspects, which are based closely on the National Register, are location, design, setting, materials, workmanship, feeling and association. *National Register Bulletin 15, How to Apply the National Register Criteria for Evaluation* defines these seven characteristics:

- *Location* is the place where the historic property was constructed.
- *Design* is the combination of elements that create the form, plans, space, structure and style of the property.
- *Setting* addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building/s.
- *Materials* refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property.
- *Workmanship* is the physical evidence of the crafts of a particular culture or people during any given period in history.
- *Feeling* is the property's expression of the aesthetic or historic sense of a particular period of time.

- *Association* is the direct link between an important historic event or person and a historic property.

According to *California Office of Historic Preservation Technical Assistance Series #6, "California Register and National Register: A Comparison:"*

> It is possible that historical resources may not retain sufficient integrity to meet the criteria for listing in the National Register, but they may still be eligible for listing in the California Register. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register if it maintains the potential to yield significant or historical information or specific data.

Thus, the California Register may include properties that have suffered a greater degree of damage to their integrity than would be acceptable for listing in the National Register, provided they are eligible for listing under Criterion 4 (Information Potential).

Evaluation Criteria for Eligibility as a City of Oakland Designated Historic Property

In order to determine whether a property is eligible for inclusion on the local register as a designated historic property, the property is rated on an Evaluation Sheet for each of fourteen evaluation criteria.[2] These criteria are grouped into four categories: architecture, history, context, and integrity. The ratings are then converted to numerical scores and added together for a total score, which is then converted into an overall rating—A, B, C, D, or E. An A property is of highest importance, a B property is of major importance, a C property is of secondary importance, and a D property is of minor importance. E properties are "of no particular interest."

A property that has been altered or that is less than fifty years old may also have a contingency rating shown by a lowercase letter, indicating that the property may be eligible for a higher rating if alterations are removed or as the property becomes age-eligible in the future.

Buildings also receive a numerical rating indicating their association with a district: 1 indicates the building is in an Area of Primary Importance (API), 2 indicates that the building is in an Area of Secondary Importance (ASI), and 3 indicates that the building is not associated with a district. A "+" indicates that a building is a contributor to the district, a "-" indicates that it is not a contributor, and a "*" indicates that it is a potential contributor. (See next section for additional information about districts).

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[2] Both the OCHS and the Landmarks Preservation Advisory Board (LPAB) criteria and evaluations determine eligibility for Oakland's Local Register. Using either would determine if a building, structure, object, or site is eligible for the Local Register. The OCHS criteria are based on the National and California Register criteria, which has already been analyzed in the Historic Resource Evaluation. Therefore, using the LPAB criteria gives an alternate evaluation, making the analysis more comprehensive in determining which properties warrant preservation.

The City of Oakland considers properties with A, B, C, and contingency ratings of C and above to "warrant consideration for possible preservation."[3] These properties, if not already Designated Historic Properties, are classified as Potential Designated Historic Properties (PDHPs).

Evaluation for Designation as a City of Oakland Local Historic District

The Historic Preservation Element of the City of Oakland General Plan describes two levels of Preservation Districts: Class 1 Preservation Districts are all Areas of Primary Importance (API) identified by the intensive survey plus other areas that meet the "Guidelines for Determination of Preservation District Eligibility," and Class 2 Preservation Districts are all Areas of Secondary Importance (ASI) identified by the intensive survey plus other areas that meet the "Guidelines for Determination of Preservation District Eligibility."[4]

Areas of Primary Importance (APIs) are areas that have been identified by an intensive survey as having a high proportion of individual properties with ratings of "C" or higher. At least two-thirds of the properties within an API must be contributory to the API, i.e. they reflect the API's principle historical or architectural themes. APIs appear eligible for the National Register of Historic Places either as districts or as historically related complexes. In general, properties with excellent or good integrity which are of the period of significance and are otherwise compatible contribute to National Register districts.

Areas of Secondary Importance (ASIs) are similar to Areas of Primary Importance except that (a) an ASI does not appear eligible for the National Register, and (b) altered properties which do not now contribute to the ASI but would if restored are counted as contributors for purposes of the two-thirds threshold. In general, properties with fair integrity may contribute to ASIs.

C. STATUS OF A BUILDING AS A HISTORICAL RESOURCE FOR CEQA

In the City of Oakland, an historical resource under CEQA is a resource that meets any of the following Thresholds of Significance:

1) A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;

2) A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

3) A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

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[3] "Summary of the Historic Preservation Element of the Oakland General Plan," City of Oakland (adopted 1994, http://www2.oaklandnet.com/oakca1/groups/ceda/documents/webcontent/oak035242.pdf, accessed 22 July 2013).
[4] Oakland General Plan, Historic Preservation Element, Chapter 4: Preservation Incentives and Regulations, Policy 2.2: Landmark and Preservation District Eligibility Criteria.

4) Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines section 15064.5); or

5) A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution, unless the preponderance of evidence demonstrates otherwise.

In March 1994, the Oakland City Council adopted a Historic Preservation Element of the General Plan (amended July 21, 1998). The Historic Preservation Element sets out a graduated system of ratings and designations resulting from the Oakland Cultural Heritage Survey (OCHS) and Oakland Zoning Regulations. The Element provides Policy 3.8: "Definition of 'Local Register of Historical Resources' and Historic Preservation 'Significant Effects' for Environmental Review Purposes" related to identifying historic resources under CEQA:

> For purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historical Resources:
>
> 1. All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and
>
> 2. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

The Local Register also includes properties within Areas of Primary Importance (API). An API is a district that appears eligible for the National Register of Historic Places.

Residential properties adjacent to the Children's Hospital are listed as contributors to the 55th and Dover Residential District, but since the district is an Area of Secondary Importance (ASI), they are not considered historic resources for the purposes of CEQA based on inclusion in the ASI.

Summary of Process of Historic Resource Evaluation for CEQA Purposes

The Children's Hospital buildings and adjacent residential and commercial buildings are evaluated in this report to arrive at two findings, which will determine whether they are considered historic resources for the purposes of CEQA:

1. Individual rating of A or B under the Oakland Designated Historic Property Criteria for Eligibility (Category 2);[5] and
2. Eligibility for listing as an individual resource or historic district (hospital complex only) in the California Register (Category 3).

II. SUMMARY OF DETERMINATION

The A/B Wing (Baby Hospital) of the Children's Hospital appears to be significant for its role in providing medical care and services to children and as a teaching hospital (California Register Criterion 1) as well as for its architectural merit (California Register Criterion 3). The A/B Wing was one of the earliest purpose-built hospitals for children in the East Bay, and is a building that embodies the distinctive characteristics of an early 20th-century hospital. Designed in 1926 by Edward W. Cannon, the reinforced concrete building is designed in a Northern Italian Renaissance style that features rich architectural detailing. The A/B Wing (Baby Hospital) retains integrity of location, workmanship, and association. However, integrity of design and materials is moderate and it lacks integrity of setting and feeling. Due to insufficient integrity, the A/B Wing (Baby Hospital) is not eligible for listing in the California Register of Historical Resources. Nevertheless, based on a detailed Oakland Cultural Heritage Survey (Intensive Survey) Evaluation and an evaluation for Landmark Eligibility, the A/B Wing (Baby Hospital) is eligible as an Oakland Designated Historic Property, which means that it qualifies as a historic resource under CEQA.

The B/C Wing, Bruce Lyon Memorial Research Center, and the Ford Diagnostic and Treatment Center at the Children's Hospital do not appear to possess sufficient significance or retain integrity to be eligible for listing in either the California Register or as Oakland Designated Historic Properties. These properties do not qualify as historic resources under CEQA.

The A/B Wing and B/C Wing, when considered together as one building, are not eligible for listing in the California Register due to insufficient integrity. Based on a detailed evaluation for Landmark Eligibility, the A/B Wing and B/C Wing together are also not eligible as an Oakland Designated Historic Property. This means that they do not qualify as a historic resource under CEQA.

The magnolia tree to the east of the B/C Wing does not qualify as a historic resource under CEQA.

The other properties in the hospital complex are less than forty-five years old and do not qualify as historic resources under CEQA. These buildings include the Cardiac Catheterization Lab, Central Plant/West Site Plant, Patient Tower, Cafeteria, Helistop, Outpatient Center, and parking garage. The hospital complex as a whole does not qualify as a historic district.

None of the adjacent fourteen residential and commercial properties that were evaluated appear to be significant as individual historical resources under the criteria for eligibility to the California Register of Historical Resources. Thirteen of the properties are listed as contributors to the City of Oakland's 55th and Dover Residential District (see Current Historic Status section below). Page & Turnbull was

[5] Properties which may be eligible as Designated Historic Properties because they receive an A.B. or C rating from a Reconnaissance or Intensive survey are considered Potentially Designated Historic Properties.

not tasked with evaluating the district for California Register eligibility; however, based on its current status as an ASI and reconnaissance surveys and research on fourteen properties, this district does not appear to possess sufficiently significant historical context or visual themes to qualify for listing in the California Register. None of these properties appear to qualify as historic resources under CEQA.

Tables 1 and 2 below summarize Page & Turnbull's findings for each hospital building and adjacent residential and office property. The Oakland Cultural Heritage Survey (OCHS) designations are also listed for the adjacent properties.

Table 1. Children's Hospital Buildings within Hospital Complex

Building	California Register Eligibility	Existing OCHS Rating	Page & Turnbull ODHP Rating	CEQA Historic Resource
A/B Wing (Baby Hospital) (1926, 1962)[6]	No	Cb+3	B3	Yes
B/C Wing (1946, 1958, 1987)	No	N/A	C3	No
A/B Wing and B/C Wing Together	No	N/A	C3	No
Ford Diagnostic and Treatment Center (1962, 1974)	No	N/A	N/A	No
Central Plant/West Site Plant (1979)	N/A	N/A	N/A	No
Patient Tower (1982)	N/A	N/A	N/A	No
Cafeteria (1987)	N/A	N/A	N/A	No
Helistop (2000)	N/A	N/A	N/A	No
Bruce Lyon Memorial Research Center (1958, 1972)	No	N/A	C3	No
Portable Buildings (Various dates)	N/A	N/A	N/A	No
Outpatient Center (1993)	N/A	N/A	N/A	No
Parking Garage (1993)	N/A	N/A	N/A	No
Bruce Lyon Memorial Research Center Addition (1992)	N/A	N/A	N/A	No
Cardiac Catheterization Lab (1993)	N/A	N/A	N/A	No
Children's Hospital Complex as a potential historic district	No	N/A	N/A	No

[6] Dates of original construction and renovation.

Table 2. Adjacent Residential/Commercial Properties

Address	California Register Eligibility	Existing OCHS Rating (1996)	Page & Turnbull ODHP Rating	Contributor to 55th & Dover Residential District (ASI)	CEQA Historic Resource
682 52nd Street	No	D2+(PDHP)	C2+	Yes	No
688 52nd Street	No	D2+(PDHP)	C2+	Yes	No
720 52nd Street	No	D2+ (PDHP)	C2+	Yes	No
665 53rd Street	N/A	N/A	N/A	No	No
671 53rd Street	No	C2+ (PDHP)	C2+	Yes	No
675 53rd Street	No	Dc2+ (PDHP)	D2+	Yes	No
677-79 53rd Street	No	D2+ (PDHP)	C2+	Yes	No
685-89 53rd Street	No	Fd2* (PDHP)	D2+	Yes	No
707 53rd Street	No	C2+ (PDHP)	C2+	Yes	No
715 53rd Street	No	Dc2+ (PDHP)	C2+	Yes	No
5203 Dover Street	No	D2+ (PDHP)	C2+	Yes	No
5212-14 Dover Street	No	Dc2 (PDHP)	D2+	Yes	No
5225 Dover Street	No	Dc2+ (PDHP)	D2+	Yes	No
5204 MLK Way	No	D2+ (PDHP)	C2+	Yes	No

III. CURRENT HISTORIC STATUS

This section provides an overview of the national, state, and local historical ratings currently assigned to the Children's Hospital buildings and adjacent residential and commercial properties.

A. NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places (National Register) is the nation's most comprehensive inventory of historic resources. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Children's Hospital Buildings

None of the buildings at the study site are currently listed in the National Register. The Landmarks Preservation Advisory Board Staff Report dated May 13, 2002, indicates that the A/B Wing (Baby Hospital) in its present state is not eligible for the National Register, but notes that further research and analysis of the resource is necessary as part of the environmental review process for future proposals submitted by the Children's Hospital and Research Center.[7]

Adjacent Residential/Commercial Properties

None of the twelve residences, one mixed-use building, and one office building adjacent to the hospital are currently individually listed in the National Register. The 55th and Dover Residential District is not listed in the National Register.

B. CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The California Register of Historical Resources is an inventory of significant architectural, archaeological, and historical resources in the State of California. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. The evaluative criteria used by the California Register for determining eligibility are closely based on those developed by the National Park Service for the National Register.

Children's Hospital Buildings

None of the buildings at the Children's Hospital site are currently listed in the California Register.

Adjacent Residential/Commercial Properties

None of the twelve residences, one mixed-use building, and one office building adjacent to the hospital are currently individually listed in the California Register. The 55th and Dover Residential District is not listed in the California Register.

[7] Landmarks Preservation Advisory Board Staff Report regarding the discussion of procedures for nominating properties to the Preservation Study List (pursuant to request from Oakland Heritage Alliance to add the Children's Hospital Baby Hospital Building, 747 52nd Street, to the Preservation List Study). 5/13/2002.

C. CALIFORNIA HISTORICAL RESOURCE STATUS CODE

Properties listed or under review by the State of California Office of Historic Preservation (OHP) are assigned California Historical Resource Status Codes (CHRSCs) of "1" to "7" in order to establish a baseline record of their historical significance. Properties with a Status Code of "1" are listed in the National or California Registers. Properties with a Status Code of "2" have been formally determined eligible for listing in the National or California Registers. Properties with a Status Code of "3" or "4" appear to be eligible for listing in either Register through survey evaluation. Properties with a Status Code of "5" are typically locally significant or of contextual importance. A rating of "6" indicates that the property has been found ineligible for listing in any Register and a rating of "7" indicates that the property has not yet been evaluated or needs to be reevaluated.

Children's Hospital Buildings

According to the California Historic Resource Inventory System, the A/B Wing (Baby Hospital) received a CHRSC of "7R," which means that the property was identified in a reconnaissance-level survey, but has not been evaluated for listing in the National or California Registers.

None of the other buildings in the complex are listed in the California Historic Resources Information System (CHRIS) database with a California Historical Resource Status Code, which means that the buildings have not been formally evaluated using the status codes.

Adjacent Residential/Office Properties

None of the twelve residences, one mixed-use building, and one office building have been individually assigned CHRSCs. The 55th and Dover Residential District received a CHRSC of "7R," which means that the property was identified in a reconnaissance-level survey, but has not been evaluated for listing in the National or California registers.

D. OAKLAND CULTURAL HERITAGE SURVEY

The Oakland Cultural Heritage Survey (OCHS) was established in 1981. Since that time, the OCHS has been evaluating resources according to a system adapted from both the San Francisco Downtown Inventory and Harold Kalman's *The Evaluation of Historic Buildings* (Parks Canada, 1980). The categories, ratings, and guidelines for interpretation that are used by the OCHS closely parallel those presented in *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, Section IV, "How to Identify the Type of Significance of a Property;" and Section V, "How to Determine if a Property has Integrity."

Children's Hospital Buildings

The OCHS assigned the A/B Wing (Baby Hospital) a preliminary rating of Cb3 based on a Reconnaissance Survey and minimal research done in 1996. The preliminary dual rating reflects uncertainty about the degree of historical and architectural integrity of the building affected by additions and alterations. The rating means that the building has secondary importance but with more information could be elevated to a rating of "B," which would signify that the building is of major importance. The "3" rating indicates that the A/B Wing (Baby Hospital) is not located within a historic district.

None of the other buildings at the Children's Hospital were evaluated in a Reconnaissance or Intensive Survey.

Adjacent Residential/Commercial Properties

Of the fourteen other properties within the study area, thirteen were rated in a Reconnaissance Survey in 1996. Eight are preliminarily considered contributing properties to an Area of Secondary Importance (ASI).

671 53rd Street and 707 53nd Street were each assigned an OCHS rating of C2+ in the reconnaissance survey, which means they are preliminarily considered contributing properties of Secondary Importance within Areas of Secondary Importance (ASI) or districts of local interest.[8] These properties are considered Potentially Designated Historic Properties (PDHPs) by the City of Oakland.

5212-5214 Dover Street was assigned an OCHS rating of Dc2, and 675 53rd Street, 5225 Dover Street, and 715 53nd Street were each assigned an OCHS rating of Dc2+ in the reconnaissance survey, indicating that they are preliminarily considered contributing properties of Minor Importance within an ASI.[9] The "c" is a contingency rating indicating that the building may be eligible for a C rating in the future if inappropriate alterations are reversed. These properties are considered PDHPs by the City of Oakland.

720 52nd Street, 5203 Dover Street, 682 52nd Street, 688 52nd Street, 677-679 53nd Street, and 5204 Martin Luther King Jr. Way were each assigned an OCHS rating of D2+ in the reconnaissance survey, which means they are preliminarily considered contributing properties of minor importance within an ASI.[10] These properties are considered PDHPs by the City of Oakland.

685-689 53rd Street has an OCHS rating of Fd2*, indicating that the building has been modernized. It lies within an ASI, but is not a contributor. The "d" is a contingency rating indicating that the building may be eligible for a D rating in the future if inappropriate alterations are reversed. This property is considered a PDHP by the City of Oakland.[11]

665 53rd Street is new construction and has not been assigned an OCHS rating.

55th and Dover Residential District

The 55th and Dover Residential District was designated an Area of Secondary Importance (ASI), or district of local interest, by the OCHS in 1996. The district boundaries encompass eight blocks with 139 contributing buildings out of a total of 146 buildings **(Figure 2)**.

[8] "City of Oakland Historic Preservation Programs."
[9] Ibid.
[10] Ibid.
[11] Ibid.

55th and Dover Residential District
with OCHS Preliminary Building Ratings, 1996

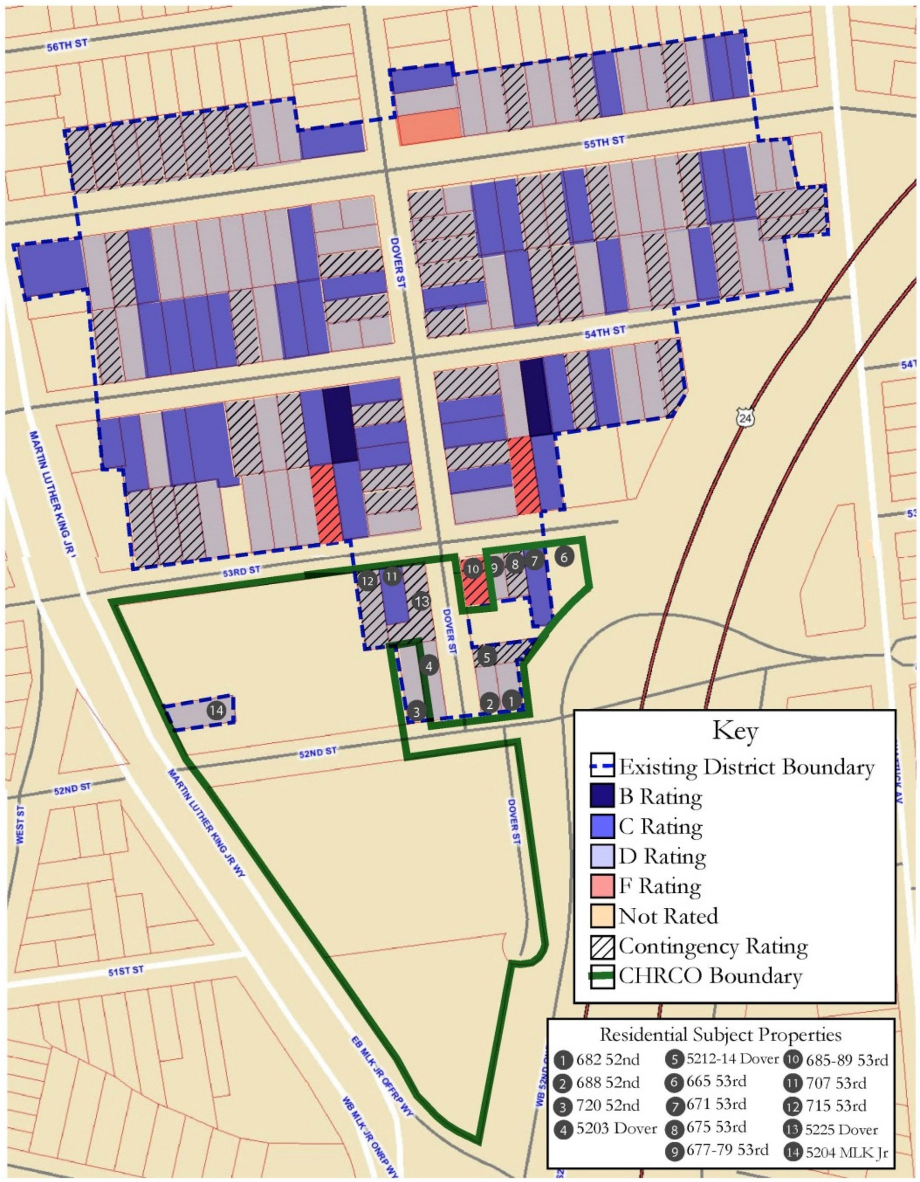

Figure 2. 55th and Dover Residential District with OCHS Preliminary Building Ratings, 1996. Source: Page & Turnbull, 2008, revised July 2013.

Two properties in the district (657 54th Street and 711 – 713 54th Street) have been assigned an architectural rating of B, which signifies that they are of major importance and automatically qualifies them for individual listing in the City of Oakland's Local Register of Historic Resources.[12] These

[12] "Summary of the Historic Preservation Element of the Oakland General Plan." Under certain circumstances, demolition or incompatible alteration of these properties on the Local Register of Historic Resources cannot be carried out unless an Environmental Impact Report demonstrates that there are no feasible preservation alternatives and identifies mitigations to make up for loss of a historic resource.

properties are not included in the Children's Hospital Master Plan and will not be affected by implementation of the Master Plan. Because a District Record (California Department of Parks and Recreation 523 D form) has not been submitted to the California Office of Historic Preservation for official review, the properties within the district have not been assigned California Historic Resource Status Codes.

The Preliminary Property List for the 55th and Dover Residential District, which was included in the Department of Parks and Recreation Primary Record Form (DPR 523A) for the district in 1996, includes thirteen of the fourteen subject properties: 682 52nd Street, 688 52nd Street, 720 52nd Street, 5203 Dover Street, 5212-14 Dover Street, 5225 Dover Street, 671 53rd Street, 675 53rd Street, 677-679 53rd Street, 685-689 53rd Street, 707 53rd Street, 715 53rd Street, and 5204 Martin Luther King Jr. Way. 665 53rd Street is evaluated in this report but was not included in the district.

E. CITY OF OAKLAND'S PROTECTED TREE ORDINANCE

A mature magnolia tree located east of the hospital's B/C Wing is not listed in the National Register of Historic Places or the California Register of Historical Resources. It is not listed on the National or California Big Tree Registries, but is eligible for protection under the City of Oakland's Protected Tree Ordinance. The magnolia tree meets the required diameter measurements and qualifies as a protected tree under the ordinance.

IV. HISTORIC CONTEXT

A. HISTORY OF OAKLAND

The first Native Americans that inhabited the Oakland area were known as the Ohlone. Because the Oakland area was isolated on the opposite side of the bay from the Mission San Francisco de Asis (commonly known as Mission Dolores) and the San Francisco Presidio, the Ohlone did not have regular contact with the Spanish until the construction of the Mission de San Jose in present-day Fremont in 1797.[14]

A Spanish expedition from Monterey explored the area around Oakland in 1772.[15] Thereafter, the Spanish virtually ignored the East Bay region until 1820, when the government granted a large tract of land to Luis Maria Peralta upon his retirement from the Spanish military.[16] Peralta's grant extended from the shore of the bay, up to the crest of the Oakland hills, and from San Leandro Creek to "El Cerrito," or the little hill (most likely Albany Hill). The grant included the area that became Oakland, which was then known as Encinal (meaning Oak Grove in Spanish). It also included the future towns of Piedmont, Berkeley, Emeryville, Alameda, Albany, and part of San Leandro.[17] Peralta used the land as a cattle ranch, which he sub-divided and bequeathed to his four sons in 1842.[18]

The 1849 Gold Rush that dramatically influenced San Francisco's development also brought fortune-seekers to Oakland.[19] Miners, lumbermen, businessmen, bankers, speculators, and opportunists settled across the bay in what was then known as Contra Costa, or "the other coast."[20] Small towns like Clinton and San Antonio (areas today located east of Lake Merritt) began developing around the businesses established by these entrepreneurs.[21]

In 1850, three men arrived in Contra Costa: Horace W. Carpentier, a 26 year-old graduate of the law school at Columbia University; Edson Adams, a 26 year-old Connecticut native; and Andrew J. Moon, a 50 year-old New Yorker.[22] Each man leased 160 acres of land from Vicente Peralta and opened the area to squatters.[23] Swiss engineer Julius Kellersberger was hired to plat the land in a grid pattern starting at the shoreline. The lots were then sold, even though Carpentier, Adams, and Moon had no legal claim to the land.[24]

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14 Beth Bagwell, *Oakland: the Story of a City* (Novato, CA: Presidio, 1982), 5.
15 Lois Rather, *Oakland's Image: A History of Oakland, California* (Oakland, CA: The Rather Press, 1972), 20, 22.
16 Bagwell, 5.
17 *Ibid.*, 10.
18 Rather, 26.
19 Historic Preservation Element, Oakland General Plan (Oakland: Oakland City Council, 1993), 1-4.
20 Bagwell, 25.
21 Historic Preservation Element, 1-4.
22 Bagwell, 25.
23 Rather, 35.
24 Bagwell, 27.

Two years later, on March 25, 1852, the town of Oakland was incorporated.[25] Named for an oak grove that stretched from Lake Merritt to the bay, the city encompassed the present-day downtown area and West Oakland to 22nd Street.[26] The town's citizens, who number less than 100, elected Carpentier as the city's first mayor.[27]

Oakland saw rapid growth and improvement after transportation connections were established with other communities.[28] Ferry service to San Francisco began in 1854, and San Antonio and Clinton were connected with Oakland by a bridge built in 1856. Commercial and industrial businesses were established near the wharves, and the Central Pacific Railroad ran through downtown Oakland by 1863.[29]

In 1868, Oakland was chosen as the western terminus for the Transcontinental Railroad. Beginning in 1869, the train, a "great 'Iron Horse' with tireless lungs," brought tourists and workers to California and made Oakland a major port city and manufacturing center.[30] West Oakland became a shipping hub for western U.S. factories and a processing and manufacturing center for raw commodities such as agricultural products and lumber. As Oakland became an increasingly popular industrial core, residential and commercial communities expanded within the city limits. In 1873, Oakland became the county seat of Alameda County.[31] By 1880, the city's population rose to 34,555, more than twenty times what it had been in 1860.[32] Many of the new residents were San Francisco commuters drawn by Oakland's relatively low density and the ferry service across the bay. A large demographic consisted of railroad workers, many of whom were African American.[33]

Promotional materials advertised Oakland's "world-renowned" climate, the prosperity of its citizens, its paved streets and extensive streetcar lines, and the culture found in "the Athens of America."[34] It was home to several colleges, including the College of California (the precursor of the University of California, Berkeley), Mills Seminary (later Mills College), and St. Mary's College. By 1895, the city hosted four daily newspapers, 50 churches, 14 schools, and four theaters or opera houses. Literary societies and a public library rounded out Oakland's cultural offerings. The health of the city was served at this time by a variety of personal physicians, small benevolent institutions and medical associations, and one hospital, the Oakland Hospital and Home for Invalids, located on 12th Street between Jackson and Madison Streets.[35]

The city expanded by annexing existing settlements and developing new districts.[36] Clinton, San Antonio, and the small town of Lynn (or Brooklyn) were annexed in 1872, pushing Oakland's eastern

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[25] *Ibid.*, 27.
[26] Historic Preservation Element, 1-4.
[27] Bagwell, 27.
[28] Historic Preservation Element, 1-4.
[29] Ibid., 1-5.
[30] Rather, 53-54.
[31] Historic Preservation Element, 1-5.
[32] Bagwell, 59.
[33] Historic Preservation Element, 1-5.
[34] Rather, 63.
[35] Husted's Alameda, Berkeley, and Oakland City Directory, 1895.
[36] Bagwell, 59.

city limits out to 36th Street.[37] Fruit Vale (later Fruitvale) and Jingletown grew around fruit orchards on the east side of the city, and Melrose, Fitchburg, and Elmhurst developed around streetcar stations in what would later be East Oakland.[38] The small Temescal community, located in north Oakland, expanded in the 1860s with the installation of a telegraph line down present-day Telegraph Avenue and the establishment of a streetcar line to the University of California Berkeley. Klinknerville, later Golden Gate, developed around Stanford and San Pablo avenues in North Oakland. Recreational facilities like the Tubbs Hotel and Idora Park spurred expansion into areas such as East Oakland and North Oakland. Neighborhoods north of Lake Merritt were annexed in 1891, and Temescal, Golden Gate, and other north Oakland neighborhoods were annexed in 1897.[39] By 1900, Oakland's population numbered almost 67,000.

The 1906 Earthquake and Fire displaced thousands of San Francisco residents to the East Bay for temporary and permanent housing. Oakland continued to grow geographically, increasing to nearly its present size by 1909, with the annexation of the hills area, Fruitvale, Melrose, Elmhurst, and the area south to San Leandro.[40] With those additions, the city's area increased from 22.9 to 60.25 square miles. Meanwhile, private developers saw an opportunity to plan communities for both the affluent and working classes in the North Oakland, West Oakland, and East Oakland neighborhoods, and parts of these areas became thoroughly family-friendly residential enclaves.

Post-earthquake development reinforced the city center at 14th Street and Broadway. The First National Bank of Oakland (now the Broadway Building), the Oakland Bank of Savings, the Security Bank Building, the Oakland Hotel, and the Federal Realty Building (now the Cathedral Building) were constructed in this area between 1907 and 1914. Oakland's City Hall was the first city hall in the United States designed as a skyscraper.[41] Other civic projects included the Civic Auditorium, new fire stations, and parks throughout the city.[42]

In 1910, the City of Oakland assumed control of its waterfront, which previously had been held by private entities. The change of ownership prompted the expansion of the Port of Oakland. The increased presence of the port, combined with the rail network and its geographic position, boosted the city to a leading industrial and warehousing center.[43] During World War I, Oakland's shipyards provided a "fleet of steel and concrete ships that…within the short space of a year put the Oakland estuary in the national limelight."[44] By 1918, at least 50,000 people were employed by the shipyards.

The 1920s saw continuing prosperity in Oakland.[45] Civic works abounded, including the installation of a new lighting system and procurement of land for an airport. Several automobile manufacturers

[37] Historic Preservation Element, 1-5.
[38] Ibid., 1-6.
[39] Ibid., 1-7.
[40] Ibid., 1-7.
[41] Ibid., 1-7.
[42] Ibid., 1-8.
[43] Ibid.
[44] Florence B. Crocker, *Who Made Oakland?* (Oakland: Clyde Dalton, 1925), quoted in Rather, 87.
[45] Rather, 89.

established assembly plants in East Oakland, making Oakland "the Detroit of the West."[46] The city was proclaimed "One of the Nation's Richest, Greatest Communities" in 1929.

Development slowed during the Great Depression, but Oakland grew into a major shipbuilding center during World War II.[47] The city's population expanded with wartime workers, including many African Americans who migrated from the South. The Bay Bridge, which opened in 1936, eased the commute between Oakland and San Francisco and probably attracted more residents to Oakland. In 1945, the city's population was 405,301.

After the war, the Port of Oakland continued to grow, largely because of its ability to capitalize on the rise of containerized shipping. This shipping method was compatible with the Port's large landholdings, spacious waterfront, and access to rail and truck transportation routes, which the older, more crowded Port of San Francisco could not offer.[48] By the late 1960s, Oakland had the second largest container port in the world.[49]

Transportation also directly impacted Oakland's physical development. The postwar emphasis on the automobile led to increased development in the suburbs and new freeways to reach these outlying areas.[50] While freeway construction and redevelopment enticed some businesses and residents away from the city center, in many cases businesses and residents were forced into relocation as historic commercial and residential fabric in downtown and West Oakland disappeared. Increased economic and racial segregation were byproducts of this freeway and redevelopment orientation, and through the 1960s and 1970s Oakland experienced infrastructure decline associated with entrenched poverty, deindustrialization, and a weak urban tax base.[51]

A tight real estate market in San Francisco in the early 1980s sparked new development and preservation projects in Oakland, especially downtown.[52] Homebuyers began seriously considering Oakland neighborhoods, many of which retained strong local character.[53] The 1989 Loma Prieta earthquake damaged many of Oakland's older stock, but the city's population has remained steady throughout the 1990s and 2000s and was recorded as 395,817 in 2011.[54]

B. TEMESCAL NEIGHBORHOOD HISTORY

Oakland's Temescal neighborhood is bounded roughly by 40th Street on the south, 55th Street on the north, Broadway on the east, and Martin Luther King Jr. Way (formerly Grove Street) on the west.[55] The Temescal commercial district ranges along Telegraph Avenue with the intersection of Telegraph

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[46] Historic Preservation Element, 1-8.
[47] Ibid., 1-9.
[48] Michael Corbett with Marjorie Dobkin, William Kostura. "National Register of Historic Places Registration Form: Port of San Francisco Embarcadero Historic District," January 2006, 21.
[49] Corbett, 43.
[50] Historic Preservation Element, 1-9.
[51] Robert O. Self, *American Babylon: Race and the Struggle for Postwar Oakland* (Princeton, NJ: Princeton University Press, 2003)
[52] Bagwell, 260-262.
[53] Ibid., 263.
[54] United States Census.
[55] Historic boundaries have shifted as a result of freeway construction.

Avenue and 51st Street serving as the hub of the neighborhood. State Route 24, constructed in 1968-69, is accessed from several on-ramps around 51st Street and Shattuck Avenue. These on-ramps create some geographic divisions within the Temescal neighborhood, but also connect the neighborhood with the rest of the city and areas beyond.

Native Americans of the Ohlone tribe were Temescal's earliest residents. An Ohlone village probably existed near the present-day intersection of 51st Street and Telegraph Avenue, by the banks of Temescal Creek.[56] The neighborhood's name comes from this period and refers to the *temescals*, or sweat houses, that the Ohlone built along the creek.

As described previously, Luis Maria Peralta's Mexican land grant, which encompassed the Oakland area, was divided among his four sons. The present-day areas of Central and North Oakland, Emeryville, and Piedmont were bequeathed to Vicente Peralta.[57] In 1836, Vicente built an adobe house on a parcel now bounded by Telegraph Avenue, 55th Street, Vicente Way, and State Route 24.[58] The Gold Rush brought opportunistic settlers to the East Bay, and Peralta sold or surrendered most of his land to squatters by 1853.[59]

Solomon Ellsworth Alden, a Connecticut native who owned a successful San Francisco restaurant, settled west of present-day Telegraph Avenue in 1852.[60] Alden acquired land along the road, eventually holding 600 acres between 44th and 60th streets.[61] He began subdividing the land along Telegraph around 1868, perhaps in anticipation of the streetcar line that was built the following year.

Alden's subdivision developed into a commercial district along Telegraph Avenue, supported by the horse-drawn streetcar that ran from downtown Oakland to Berkeley by 1873 and the Oakland-Sacramento telegraph line, which was strung down Telegraph Avenue and gave the street its name.[62] By 1873, the population of the village of Temescal numbered 1,000 and the village featured stores, restaurants, dairies, and banks.[63]

Early Temescal was a blue-collar community of carpenters, farmers, and laborers.[64] The local Lusk Canning Company, which opened in 1868, was one of the largest canning factories in the world by 1885. It employed 800 people, both adults and children, during the height of the canning season.[65] In its heyday, the factory was located on Claremont Avenue just north of the intersection of Claremont and Telegraph Avenue.[66] Many Temescal residents also worked in the streetcar barn at 51st Street and

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[56] Historic Preservation Element, Oakland General Plan (Oakland City Council, 1993), 1-3.
[57] Diane Reinbolt Judd, "Early Days in Temescal" (Term paper at Laney College, June 1980), 2.
[58] *Temescal Album*, 9.
[59] Judd, 3.
[60] Theodore Grover Wurm, "Our Northern Suburb of Temescal" (Oakland: s. n., 1991), 4; Judd, 4.
[61] *Temescal Album*, 11.
[62] *Temescal Album*, 12; Jeff Norman, *Temescal Legacies: Narratives of Change from a North Oakland Neighborhood* (Shared Ground, 2006), 1.
[63] *Temescal Album*, 16.
[64] Judd, 7.
[65] Ibid., 5; *Temescal Album*, 18.
[66] Wade Fox, "Traces of the Past in Temescal" (http://loadofcrock.blogspot.com/2005/12/traces-of-past-in-temescal.html, accessed 12 May 2008).

Telegraph Avenue, and it was common for women to work in cigar factories and laundries.[67] A number of garbage collectors operated in the area and in 1907, they consolidated into the Oakland Scavenger Company.[68]

The 1880s and 1890s saw an influx of Italian immigrants to the neighborhood.[69] The Bilger Quarry just east of Temescal was known to have employed newly arrived Italian immigrants, many of whom resided in Temescal.[70] Many immigrants bought their first homes in the area, and a strong Italian community developed. Longstanding institutions from this heritage include Sacred Heart Church at 40th Street and Martin Luther King Jr. Way, the Genova Delicatessen and Ravioli Factory at Telegraph Avenue and 51st Street, and the Colombo Club on Claremont Avenue.[71] The Colombo Club was established as a social club by Bilger Quarry workers.[72]

In 1897, just after residents voted to change the town's name to Alden in honor of its founder, Temescal was annexed by the growing city of Oakland.[73] At the turn of the 20th century, Temescal was still a relatively self-contained community, with several small dairies, four movie houses, a post office, and a store.[74] Idora Park, an amusement park that boasted the largest roller-skating rink on the West Coast, was established in 1903 between Shattuck and Telegraph avenues and 56th and 58th streets.[75]

For a long time, the area's commerce focused on the streetcars and trains that ran down Telegraph and Shattuck avenues, and Grove, 40th, and 55th streets, in keeping with the area's genesis as a streetcar corridor **(Figure 3)**.[76] The residential streetcar suburb continued to develop through the 1910s and 1920s, largely with bungalows and Craftsman style single family residences. The postwar emphasis on automobiles and increasing community frustration with noisy, dirty railways led to the closure or relocation of streetcar and railway lines in the late 1940s and 1950s.[77]

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[67] Wurm, 5; *Temescal Album*, 23.
[68] Wurm, 6.
[69] Judd 2.
[70] Ibid., 20.
[71] Bagwell, 90.
[72] Fox.
[73] Wurm, 19; Norman, 1.
[74] Wurm, 6.
[75] Bagwell, 148; Fox.
[76] Norman, 38.
[77] Wurm, 8.

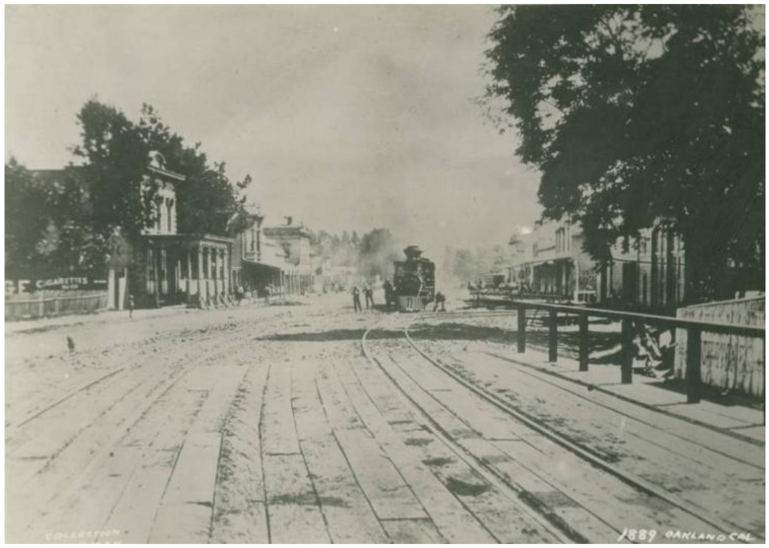

Figure 3. Telegraph Avenue in Temescal, 1889.
Source: Oakland Public Library

In 1958, transportation authorities approved plans for a freeway intended to connect Contra Costa County with I-880.[78] The community fought against the plans, which required the demolition of many residential blocks in Temescal and disrupted commercial districts on Grove Street, Telegraph Avenue, and College Avenue. Despite opposition, however, the first stretch of the Grove-Shafter Freeway (State Route 24) opened in 1969.[79] The freeway divided the commercial stretch on Telegraph from the residential areas to the west, such as the neighborhood around the Children's Hospital **(Figure 4)**.The transportation corridor of Grove Street (Martin Luther King Jr. Way) also changed significantly during this era. Prior to the 1960s, Line 3 of the Key Streetcar System ran along Grove Street at street level, connecting downtown Oakland to North Berkeley. Construction of the Bay Area Rapid Transit (BART) system in the 1960s saw this thoroughfare cast into the shadow of elevated tracks, visually and permanently changing the scale of traffic in the neighborhood.

[78] Mellana, quoted. in Norman, 76.
[79] Norman, 68.

Figure 4. Grove-Shafter Freeway under construction in 1968, also showing elevated BART tracks to the upper right. The Children's Hospital site is at center right. Source: Oakland Museum Collection.

The new freeway depressed property values in Temescal. Many children of long-time residents moved out of the neighborhood and many homes were sold. Those that remained in Temescal were often elderly residents, a demographic whose eventual attrition contributed to the neighborhood's steady decline.[80] African Americans, who were no longer tied to West Oakland's war industries and government-sponsored housing, were able to afford homes in Temescal and supplanted the neighborhood's predominantly Italian community.[81] In more recent years, young professionals attracted to the affordability, character, and diversity of Temescal have purchased homes in the neighborhood.

C. CHILDREN'S HOSPITAL

Administrative History

In 1911, Bertha Wright, a visiting nurse for the Collegiate Alumnae Association of Alameda County, formed a group called the Baby Hospital Association with the mission to explore the establishment of a hospital specifically designed for infants and children under the age of five.[82] Although the city of San Francisco had a children's hospital, there was no such organization in the East Bay. The high death rates for young children at the turn of the 20th century, which stood at over ten percent for newborns and children younger than two, catalyzed the formation of the association.[83]

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[80] Glinternick, quoted. in Norman, 92; Raymond Mellana, quoted. in Norman, 77.
[81] Norman, 98-99.
[82] Meeting Minutes 1913. [Children's Hospital Medical Center Collection, Carton 1: Records 1912-1978, Folder 1. Available at the Bancroft Library.]
[83] I. Louden, *Death in Childbirth: An International Study of Maternal Care and Childbirth 1800-1950* (Oxford, Oxford University Press, 1992) 46.

The Baby Hospital Association held its first meeting at the First Congregational Church in Oakland on September 11, 1912. By April 1913, the Association was officially established, with a board of female officers including prominent Oakland resident Mrs. Allen Babcock as president and Oakland resident and social worker Miss Mabel Weed as first vice president.[84] The mission of the Baby Hospital of Alameda County, said to be the first and only of its kind in the state of California, was to care for sick babies regardless of creed, nationality or race. The association was affiliated with the Certified Milk and Baby Hygiene Committee, the Association of Collegiate Alumnae, and was endorsed by the Commission of Public Charities of Berkeley. The organization's thirty founding members acted as the female board of managers, while a male board of directors and building committee were formed to select a site for a hospital building. The Oakland Children's Hospital organizational bylaws were based on those established by the Hospital for Babies in Waltham, MA, the Children's Hospital in San Francisco, and the Orthopedic Hospital of Seattle.[85]

In 1912, the Baby Hospital Association purchased a large Queen Anne-style building known as the McElrath mansion, located on 51st Street between Grove Street (now Martin Luther King Jr. Way) and Telegraph Avenue, to house their new hospital. The residential building immediately underwent renovations for use as a hospital facility, and a clinic was established in the carriage house on the property where patients were treated while these renovations were taking place. Beginning in 1913, the clinic held a baby hygiene class twice a month and clinics for sick babies were offered on Monday, Wednesday, and Friday mornings as well as in the afternoons of the first and third Mondays of the month.[86] That year, the clinic treated a total of 450 children and conducted 1,100 office visits and 2,425 home visits. The program was funded by the Baby Hospital Association and cost $2,000. On September 16, 1914, the Baby Hospital in the McElrath mansion was dedicated. Hospital staff initially consisted of head nurse and hospital superintendent Therese A. Von Heygendorff, a day nurse, a night nurse, a secretary, a cook, and a Japanese houseboy **(Figure 5)**.

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84 "Baby Hospital is Organized", *The Berkeley Daily Gazette*, September 11, 1912.
85 Murray Morgan, *The Hospital Women Built for Children* (Oakland, CA: Children's Hospital Medical Center, 1967).
86 Ibid., 18.

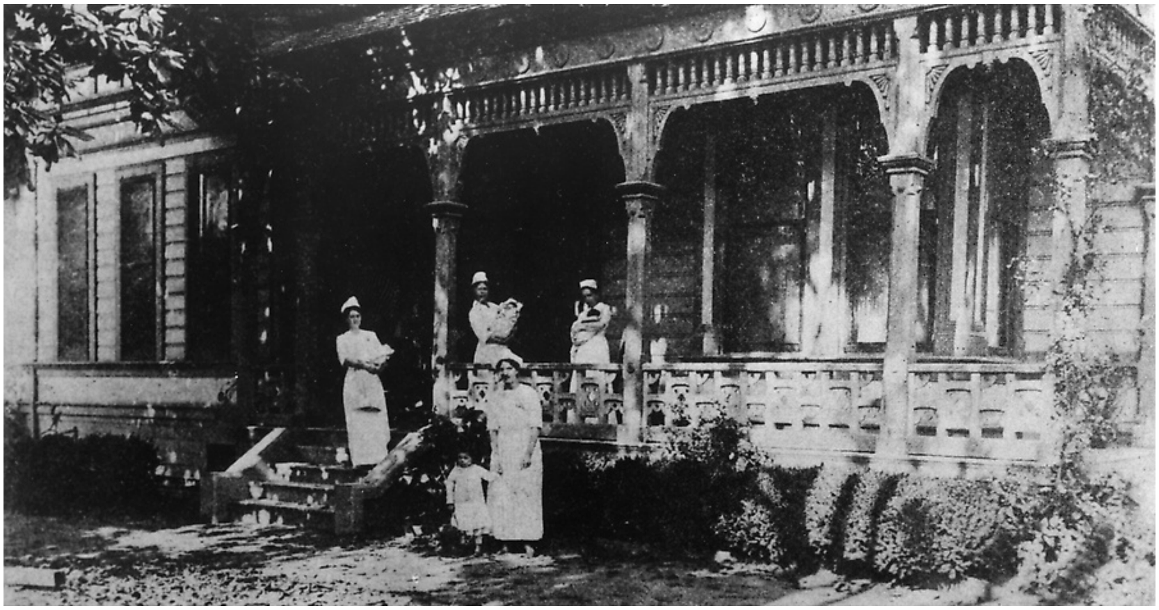

Figure 5. Nurses and patients in front of the newly dedicated Baby Hospital, 1914. Source: *The Oakland Tribune* photograph archives, accessed online at http://photos.mercurynews.com/.

By 1914, the number of children treated at the Baby Hospital had increased from 450 to 611 and the death rate at the facility, which was quite good for the time, was 7.1 percent. The clinic, which continued to operate out of the carriage house on the McElrath property, had 6,093 patient visits and began prenatal classes that year. Baby Hospital Association founder Bertha Wright and an assistant, Emma Roberts, ran the clinic. The hospital costs that year were nearly $2,000 a month and patients, of whom fewer than ten percent paid in full, made up only about $400 of that fee. Alameda County and the City of Oakland pledged to give a total of $400 a month, if the hospital in turn provided pediatrician training services. Resident physicians were introduced to the hospital as early as the 1920s.[87]

Despite the assistance from the local government, there remained a $1,200 operational gap. Women's clubs called "Branches" raised the difference by hosting lunches, fashion shows, and sales. In 1922, 972 patients were treated and the average hospital stay was 22 days. Of these visits, 58% were free and approximately 30% were partially paid, bringing operational expenses that year to $46,124, with hospital and clinic income totaling $11,587. Alameda County and the City of Oakland contributed $12,000. The Branches were tasked with raising the remaining $22,537. At this time, the Baby Hospital Association learned that they would need to build a new masonry hospital building to meet building codes.[88] The President of the Board of Managers, Anita Jensen, appealed to the Community Chest of Oakland, which did not generally administer funding for member groups, to finance the new hospital. Financial strain increased when Alameda County Supervisors informed the Baby Hospital Association that after construction of the new Highland County Hospital was complete, it would no longer provide financing for the Baby Hospital.

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[87] Ibid., 95.
[88] Ibid., 53.

Despite financial struggles, the Association was able to secure loans to build a new hospital building in 1926.[89] The Association selected Oakland architect Edward W. Cannon, who designed a state-of-the-art steel frame and reinforced concrete hospital.[90] The L-shaped building was designed in a "Northern Italian Romanesque" style and reflected the latest social and hygiene theory in hospital design. In 1928, the hospital (now known as the A/B Wing) was dedicated. Shortly thereafter, the first male President of the Board, William Harold Oliver, re-organized the hospital administratively under a single board.[91] With these administrative changes, Oliver eliminated those who had previously been elected to the Hospital Board as figureheads rather than as active participants. In 1930, the Baby Hospital's name was changed to the Children's Hospital of the East Bay to reflect the hospital's broader clientele, which now included children as old as fourteen years of age.

The County Board of Supervisors continued to contribute to the financing of the Children's Hospital of the East Bay because the hospital agreed to offer pediatric training that was unavailable at the new County Hospital. Area hospitals assigned three-month pediatric courses for student nurses at the Children's Hospital and the County Hospital requested that their interns serve for a period of six weeks. The Children's Hospital of the East Bay provided room and board for its medical interns in residential cottages that abutted the hospital site.[92] County financing continued until 1932, when the County was forced to cut their funding in half because of the Depression; however, in 1934, funding was again stabilized.

Throughout the hospital's history, the Branches, or women's fundraising organizations, have largely provided financial support. The Branches were so called in honorific reference to the branches of the stately magnolia tree located on the Hospital grounds, adjacent to the McElrath mansion. In 1933, during the Depression, the Children's Hospital of the East Bay had eighteen Branches with a total of approximately 500 members. Branches typically began the year with ten dollars in petty cash and competed with one another to raise money to transfer to the Baby Hospital Association at the end of the year. An Executive Committee ensured that Branches did not have events that were too similar to one another and provided organizational support. Minnie Culver Oliver, the wife of Board President William Oliver, was president of the branches from 1933 until 1958.

In 1940, under the leadership of William Oliver, the Hospital paid off its $123,000 mortgage.[93] As Oakland's population grew during World War II, the patient demand on the Children's Hospital of the East Bay likewise increased. In 1946, a new wing (now known as the B/C Wing) was constructed to replace the outmoded and undersized McElrath mansion. In the 1950s, under the presidency of Thad McCarty, the Stanford Research Institute was commissioned to study the hospital and make recommendations regarding its program and location. The resulting studies recommended a continuing emphasis on the hospital's teaching role and increased specialization through research.

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[89] Deed of Trust between the Baby Hospital Association and the Bank of Oakland on October 5, 1926 for real property improvements, $75,000. #W84857. A second Deed of Trust was issued for $125,000. [Children's Hospital Medical Center Collection, Box 4: Deeds & Legal Documents, Folder 1. Available at the Bancroft Library.]
[90] Morgan, 54.
[91] Articles of Incorporation and Bylaws: As Amended 1930/46. [Children's Hospital Medical Center Collection, Box 1: Records 1912-1978, Folder 5. Available at the Bancroft Library.]
[92] Morgan, 49.
[93] "Children's Hospital of the East Bay Mortgage Paid Off" (*San Francisco Chronicle* 23 January 1941), 8.

Consequently, several areas of specialty were developed at this time, including a cleft palate team, seizure clinic, polio clinic, and orthopedic clinic. In 1958, the Bruce Lyon Memorial Research Laboratory was built on the southern portion of the hospital site. Research began in 1959 with a staff of five people. In 1973, the Northern California Comprehensive Sickle Cell Center was established at the Bruce Lyon Memorial Research Center. In 1986, the Bruce Lyon Memorial Research Laboratory was incorporated as a nonprofit subsidiary of the hospital and took on a new identity as Children's Hospital Oakland Research Institute (CHORI).[94]About the same time that the Research Center was founded, a neurologic diagnostic clinic, phenylketonuria clinic, Cystic Fibrosis Research Foundation, birth defects center, and diagnostic and treatment center were developed.

The hospital continued to expand over the next twenty years. Buildings were expanded as stories were added to the labs and research facilities, and the hospital's name was changed to the Children's Medical Center of Northern California to reflect its regional medical expertise. Construction of a patient tower (1982) and an outpatient building (1993) significantly increased the size of the hospital complex. Today, the hospital is known as the Children's Hospital and Research Center Oakland; it remains a private medical facility.

Physical Development of Hospital Complex

In 1852, Solomon and Ann Ellsworth Alden purchased land and a small cottage from W. B. Gould, located between 44th and 60th streets in Oakland.[95] Solomon Alden was a wealthy restaurateur and is credited with the original settlement of the Temescal area, which bore his name prior the turn of the 20th century.[96] An 1877 illustration shows the Alden property, which had been expanded to include a two story Italianate structure surrounded by mature plantings and a large barn, constructed ca. 1855 **(Figure 6).** In 1860, women in the Alden family planted a magnolia tree next to their house which still stands on Children's Hospital grounds.[97] Alden began subdividing his land in 1868, but the subject property remained in Alden's ownership until much later, likely due to the fact that the Alden residence was located on the property. Solomon Alden died in 1881, and the Alden property passed into ownership of his daughter Elsie Alden.

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[94] Ibid.
[95] "The Knave", *The Oakland Tribune*, September 30, 1962.
[96] "National Register of Historic Places in Alameda County", adapted from National Register of Historic Places nomination #96000105 (Alden Branch of the Oakland Free Library), 1996.Accessed online at http://www.nationalregisterofhistoricplaces.com/CA/alameda/state3.html
[97] Dedication plaque at the base of the magnolia tree.

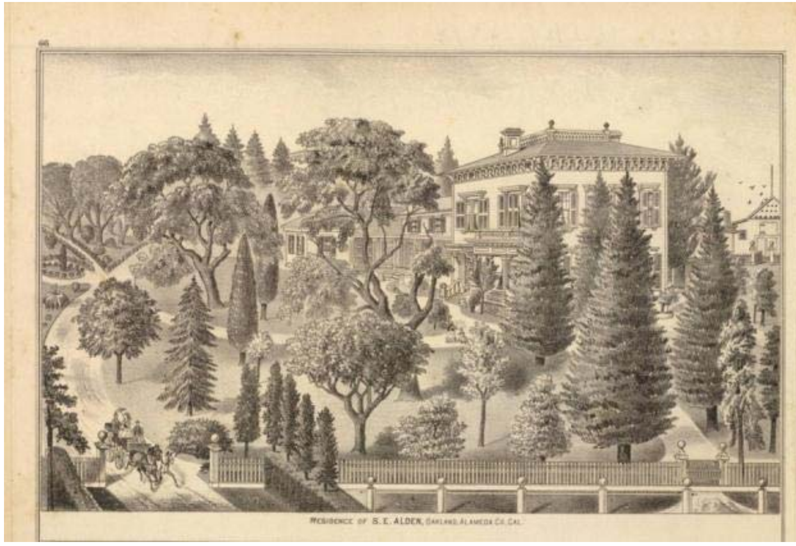

Figure 6. Residence of Solomon Alden, published in Thompson and West, Index Map of Oakland, 1878. Source: The David Rumsey Map Collection.

In 1875, Elsie Alden married Oakland attorney John McElrath, and the couple moved to the Alden family property in Temescal. Between 1878 and the turn of the 20th century, a large Queen Anne-style house was constructed on the property, which came to be known as the McElrath mansion and seems to have replaced the earlier Italianate structure. The sprawling two-and-one-half story home contained 20 rooms.[98] On the 1911-1912 Sanborn Fire Insurance Map, the house is shown at the center of the large lot at 52nd and Dover Streets with residential tracts to the north, west, and south; the building's primary façade faced south onto 51st Street. The magnolia tree that the Alden women planted in 1860 was preserved and can be seen in undated photographs located in front of the primary entrance to the new McElrath mansion **(Figure 7).** The McElraths had twelve children and resided at this house until John McElrath died in 1907.

Figure 7. McElrath mansion before it was purchased by the Baby Hospital Association in 1912, showing magnolia tree at right. Source: Murray Morgan, *The Hospital Women Built for Children* (Children's Hospital Medical Center: Oakland, 1967).

[98] *Temescal Album*, 11.

In 1912, the Baby Hospital Association formed to develop a clinic and hospital specifically for the treatment of infants and children under the age of five. To house the new hospital facility, the Association purchased the McElrath property in December 1912 with the required down payment of $6,500 towards the total $12,500 sale price.[99]

While the main house was being remodeled for hospital use in June 1913, the Baby Hospital Association opened a medical clinic in the McElrath carriage house. Renovations on the main house included: re-plastering and painting of the interior; the addition of utility rooms and plumbing improvements; the enlargement of the water system and improvement of the electrical wiring.[100] The Baby Hospital opened in 1914; however, it was not long before the hospital outgrew the McElrath mansion. The President of the Board of Managers, Anita Oliver Jensen, stated in a Baby Hospital Association Annual Report that the "old building is neither adequate to our needs nor suited to the intelligence of our work." To secure funding from the City of Oakland, the Baby Hospital agreed to provide room and board for medical interns from Alameda County to practice at the Baby Hospital for six-week periods.[101] Additional impetus for building improvements came in 1925, when Oakland City officials informed the Baby Hospital Association that their wood frame hospital building violated building code because it was not fireproof masonry. In response, Jensen toured hospitals in the East and Midwest collecting ideas for new hospital designs, and an additional property was purchased adjoining the original site on Grove Street.[102]

In 1926, a brick-clad steel frame and reinforced concrete building was constructed adjacent to the McElrath mansion to serve as the main hospital. The 1926 Baby Hospital Association Annual Report featured a description of the new hospital, an L-shaped building designed by architect Edward W. Cannon and constructed with a steel frame and reinforced concrete for fireproofing **(Figure 8)**. The building was designed in a "Northern Italian Romanesque" style and clad with light buff brick cladding and terra cotta ornaments. The report notes that, "an appropriate touch is to be found in the charming Della Robbia bambino, in colored terra-cotta, over the entrance arch; this was brought from Italy by a member of the Hospital Board."[103] The primary entrance was located at the south façade of the building, while an ambulance entrance was located at the north façade, necessitating the purchase of adjoining land and the construction of a driveway to access 52nd Street.[104]

[99] Morgan.
[100] Morgan.
[101] Ibid., 49.
[102] Morgan, 54.
[103] Ibid., 55.
[104] Deed between William and Marion Battenhouse and the Baby Hospital Association. 10/13/1926. [Children's Hospital Medical Center Collection, Box 4: Deeds and Legal Documents, Folder 16. Available at the Bancroft Library.]

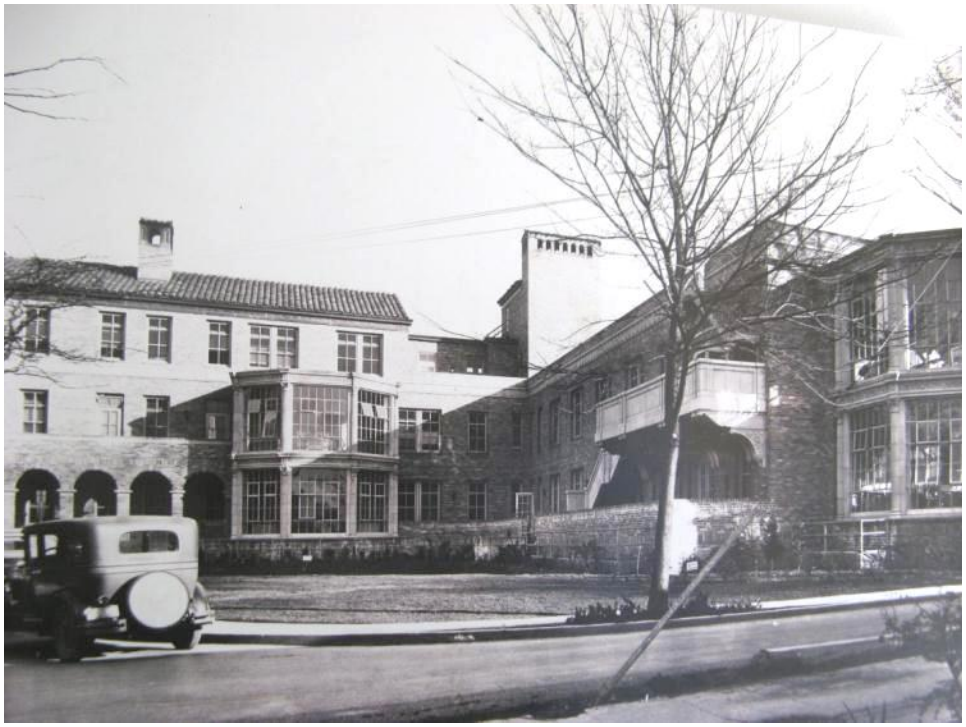

Figure 8. The Baby Hospital shortly after its construction in 1926.
Source: Oakland Children's Hospital Archives.

By 1930, the name of the Baby Hospital was officially changed to the Children's Hospital of the East Bay.[105] The name change reflected both a shift in the age of children treated at the facility, which now accepted children through the age of fourteen, and also expressed the prominence of the hospital within the greater geographic region. Starting in the 1930s, the Hospital leased a cottage located at 721 51st Street (no longer extant). From approximately 1933-1958, this building, which was rented from sisters Helen Julia Shafter and Mary Severence Shafter and known as the Shafter Cottage, served as the headquarters of the Children's Hospital Branches fundraising group and as living quarters for the superintendent of nurses.[106]

With the East Bay's population increase during World War II, the hospital's patient load also grew. Between 1941 and 1945, the patient load increased dramatically, from 10,000 to 245,000.[107] In response, between 1942 and 1957, the Children's Hospital's board aggressively pursued a program called "Operation Facelift," starting with the purchase from private owners of lots and houses surrounding the hospital complex on Grove Street (now Martin Luther King Jr. Way), 52nd Street, and Dover Street. Ownership of these lots and houses would enable the hospital complex to physically expand and meet growing patient demand.

[105] Dorothy Larimer Boyd. "Women Build a Hospital for Children," Special Commemorative Issue Celebrating Yesterday and Today (*bambino: Children's Hospital Medical Center of Northern California*, September 1982).
[106] Ibid.
[107] Ibid.

In 1945, Children's Hospital hired the architecture firm of Stone and Mulloy to design a master plan for hospital expansion.[108] The firm specialized in hospital design, and the plan they developed reflected contemporary advances in the field of hospital design, including flexibility of construction schedule, and interior spaces that facilitated department cooperation. Work subsequently began on the first portion of the proposed master plan, which necessitated the demolition of the thoroughly outmoded McElrath mansion. The B/C Wing was added to the existing Baby Hospital building (which came to be called the A/B Wing at this point), changing the hospital's overall configuration from an L-shaped plan to a U- shaped plan **(Figure 9)**. Contractor Elmer J. Freethy signed an agreement with the hospital to "furnish all of the materials and perform all of the work shown on the drawings in the specifications entitled Alterations and Additions to the Children's Hospital of the East Bay at 51st and Dover Streets." The Alden family magnolia tree was preserved, and stood just east of the new B/C Wing. The new wing was dedicated on October 17, 1948.[109] It appears that a small third-story addition was also constructed at the northeast corner of the A/B Wing about this time.

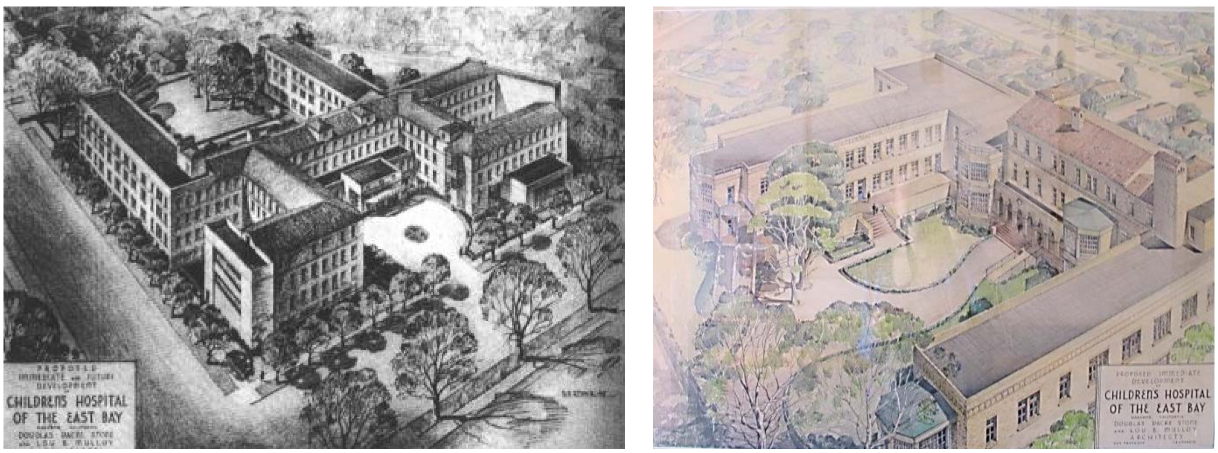

Figure 9. Master plan for Children's Hospital at left (view southwest with 52nd Street at lower right), and Hospital expansion (B/C Wing) as proposed (similar to but not exactly as constructed) at right. Designed by Stone and Mulloy.
Source: *Architect and Engineer*, December 1945.

Meanwhile, many of the houses on 52nd Street, north of the hospital property, were sold to a trust company which relocated the buildings. The residences on the portion of the block south of 51st Street and bounded by Grove and Dover streets were purchased by the hospital. These houses were demolished and the parcels were paved for surface parking. The 1951 Sanborn Fire Insurance Map identifies remaining houses located along Grove Street as student nurse residences.[110] Another cottage retained by the hospital was utilized for open heart surgery research in 1957—a research endeavor that led to the Hospital's first open heart surgery on April 15, 1959.[111]

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108 "The Children's Hospital of the East Bay: Douglas Dacre Stone and Louis B. Mulloy, Architects" (*Architect and Engineer*, December 1945), 16-17.
109 Agreement between Elmer J. Freethy and the Children's Hospital of the East Bay, August 6, 1946. [Children's Hospital Medical Center Collection, Box 4: Deeds & Legal Documents, Folder 4. Available at the Bancroft Library.]
110 1951 Sanborn Fire Insurance Map.
111 Morgan.

In the 1950s and 1960s, new buildings were constructed on the land acquired by the hospital and the complex continued to expand. This expansion did not proceed according to the Stone and Mulloy master plan, perhaps reflecting advances in hospital design that outpaced what Stone and Mulloy had attempted to plan for. However, the hospital did retain the services of the Stone and Mulloy firm, called by this time Stone, Marraccini and Patterson, for the design of new buildings at the site. On September 10, 1959, the Bruce Lyon Memorial Research Laboratory, constructed on the southern portion of the hospital property, was dedicated.[112] On September 23, the William H. and Helen C. Ford Diagnostic and Treatment Center, which was made possible by a gift of almost $450,000 from the Fords, was dedicated.[113] The Ford Diagnostic and Treatment Center housed the outpatient departments, laboratory, x-ray, and other facilities.

The front entrance and lobby of the A/B Wing (Baby Hospital) was also expanded and remodeled in 1962, and third story additions were built at the A/B Wing and the B/C Wing.[114] A driveway from Grove Street was also paved at this time, providing a path between the hospital offices and nurses' housing along Grove Street. In 1963, a larger dormitory for housing nurses was constructed at the corner of 52nd and Grove streets.[115] The hospital's name was changed to the Children's Hospital Medical Center of Northern California in 1964.[116] The construction of the Grove-Shafter freeway in 1968-69 hemmed in any potential Hospital expansion to the east, and curtailed vehicular access to the A/B Wing (Baby Hospital).

In the 1970s, several additions were made to the hospital complex and approval for larger additions was granted. A large second floor, designed by Stone Marraccini and Patterson, was added to the Bruce Lyon Memorial Research Center in 1972. A third floor to the Ford Diagnostic and Treatment Center was added in 1974, and the West Site Plant was constructed adjacent to the west façade of the B/C Wing in 1979.[117] Both were designed by Kaplan/McLaughlin. At this time, city government approval was received for a new hospital building at the intersection of 52nd and Grove streets, which would adjoin the 1946 B/C Wing. Tax-free bonds from the City of Oakland provided twenty-three million dollars for construction funding.[118] The new five-story patient care facility, designed by KMD and known as the Patient Tower, opened in this location on September 12, 1982.[119] This addition reoriented the hospital complex so that it fronted north onto 52nd Street and further curtailed vehicular and visual access to the historic A/B Wing and the B/C Wing.

In 1987, a Cafeteria was designed by Ratcliff Architects and constructed between the Patient Tower and the West Site Plant. A one-story build-out, designed by Jim Jennings Architecture, was also added to the B/C Wing's east façade at this time, enclosing the building's original porch.[120] Trailers

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[112] Boyd.
[113] Ibid.
[114] Rutherford & Chekene. SB 1953 Seismic Evaluation: Children's Hospital of Oakland, Vol. 1 of 3. Prepared for Office of Statewide Health Planning and Development, December 2000.
[115] Boyd.
[116] Ibid.
[117] Rutherford & Chekene.
[118] Boyd.
[119] "Come Join Our Celebration," Special Commemorative Issue Celebrating Yesterday and Today (*bambino: Children's Hospital Medical Center of Northern California*, September 1982).
[120] Rutherford & Chekene.

that contain offices were most likely placed on the west side of the B/C Wing and south side of the West Site Plant sometime in the 1980s.[121]

A second addition to the Bruce Lyon Memorial research Center was designed by Paul O. Finwall & Associated and constructed at the southernmost tip of the Hospital site in 1992. The Cardiac Catheterization Laboratory, located at the southeast corner of the Ford Diagnostic and Treatment Center, was designed by James Davis Architects and completed in 1993.[122] In the same year, a new Outpatient Center and parking garage structure were built on the north side of 52nd Street.[123] The Outpatient Center was designed by Anshen + Allen, and the parking garage was designed by The Ratcliff Architects.

Hospital Site Construction Chronology

1850s

1852: Solomon and Ann Ellsworth Alden purchase the land between 44th and 60th streets. An existing wood frame dwelling on the property is expanded to a two-story Italianate residence. Beginning in 1868, Alden subdivides his land into residential tracts.[124]

1860s

1860: Women in the Alden family plant a magnolia tree next to their home.

1870s-1890s

1878-1899: Between 1878 and the turn of the 20th century, a two-and-one-half story Queen Anne-style house was constructed on the property and seems to have replaced the earlier Italianate structure. The house contained 20 rooms and was located at the center of the large lot at 52nd and Dover Street, with the primary façade facing south onto 51st Street. The magnolia tree that the Alden women planted in 1860 was preserved and the property came to be known as the McElrath mansion.

1910s

1912: The Baby Hospital Association purchases the McElrath mansion.[125] The 1911-12 Sanborn Fire Insurance Map shows the mansion located on a parcel with residential tracts to its north, west, and south.[126] **(Figure 10).**

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121 Exact construction dates were not located; the suggested date range is based on site visits in April and May of 2008.
122 Rutherford & Chekene.
123 Environmental Science Associates, Inc. "Final Addendum to the Draft EIR: Children's Hospital Medical Center Environmental Impact Report," Prepared for the City of Oakland Planning Department. May 1990.
124 *Temescal Album*, 11.
125 Morgan.
126 1911-1912 Sanborn Fire Insurance Map.

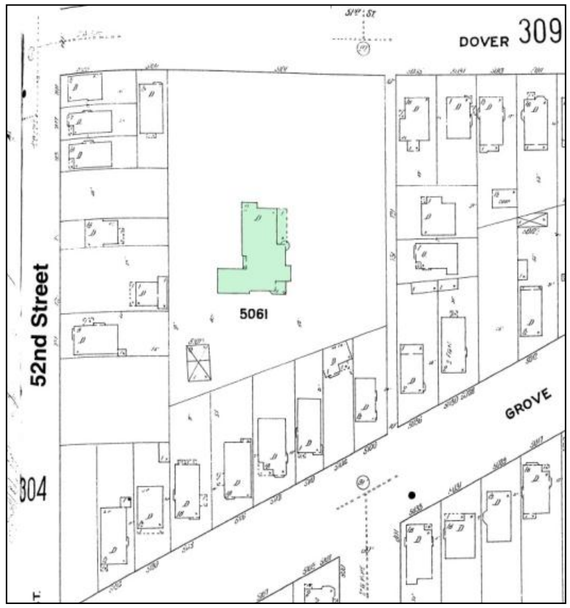

Figure 10. 1911-12 Sanborn Fire Insurance Map. The McElrath mansion that initially housed the Baby Hospital is highlighted in green. The carriage house located on the property contained the medical clinic until renovation of the mansion was complete in 1913.

1913: The Baby Hospital Association opens a medical clinic in the McElrath carriage house in June, during the renovation of the McElrath mansion.[127]

1920s

1922: The Baby Hospital agrees to provide room and board for medical interns in Alameda County to practice at the Baby Hospital for a period of six weeks in exchange for funding from the City of Oakland for a new hospital building.[128]

1925: Oakland City officials inform the Baby Hospital Association that the wood-frame mansion-turned-hospital violates building code, because it is not fireproof masonry. In response, additional property along Grove Street is purchased adjacent to the McElrath mansion.[129]

1926: New Baby Hospital building constructed. Designed by Berkeley architect E.W. Cannon, the L-shaped building had a steel frame and reinforced concrete for fireproofing. The building features a "Northern Italian Romanesque" style with light buff brick cladding and terra cotta ornamentation **(Figure 11)**.[130]

[127] Morgan.
[128] Ibid, 49.
[129] Morgan, 54.
[130] Ibid., 55.

Figure 11. 1930 Sanborn Fire Insurance Map. Baby Hospital complex outlined, including the L-shaped building constructed in 1926. McElrath mansion remains and houses the hospital's clinic.

1930s

1930: The Baby Hospital is officially renamed the Children's Hospital of the East Bay.[131]

1933: The nearby Shafter cottage bungalow at 721 51st Street becomes the Children's Hospital Branches fundraising headquarters and remains so until 1958.[132] The cottage also housed the superintendent of nurses during this period.[133]

1940s

1940: The mortgage for the Baby Hospital building is paid off.[134]

1941-1945: In response to the development of the East Bay during World War II, the hospital's patient load grows from 10,000 in 1940 to 24,500 in 1945. The architecture firm of Stone and Mulloy, which specialized in hospital construction, develops a new master plan for the hospital.[135]

1946-1948: Contractor Elmer J. Freethy begins constructing a new hospital wing in 1946. Designed by architects Douglas Dacre Stone and Lou B. Mulloy, the two-story addition (now known as

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[131] Boyd.
[132] Ibid.
[133] Letter dated October 15, 1936 from Helen and Mary Shafter.
[134] "Children's Hospital of the East Bay: Mortgage Paid Off."
[135] Ibid., 87.

the B/C Wing) is dedicated on October 17, 1948.[136] A small addition to northeast corner of the third story of the A/B Wing (Baby Hospital) also took place about this time.[137]

1950s

1951: Housing for student nurses, located along 52^{nd} Street, is identified on the 1951 Sanborn Fire Insurance Map **(Figure 12)**.[138]

1957: Between 1942 and 1957, the hospital's board purchases the lots and houses surrounding the hospital complex on Grove, 51^{st}, 52^{nd}, and Dover streets. Many of the houses are sold to a trust company that relocates the buildings. The cleared land initially serves as a parking lot.[139]

1959: The hospital's first open heart surgery is performed on April 15.[140] In September, the Bruce Lyon Memorial Research Laboratory is constructed on the southern portion of the block.[141]

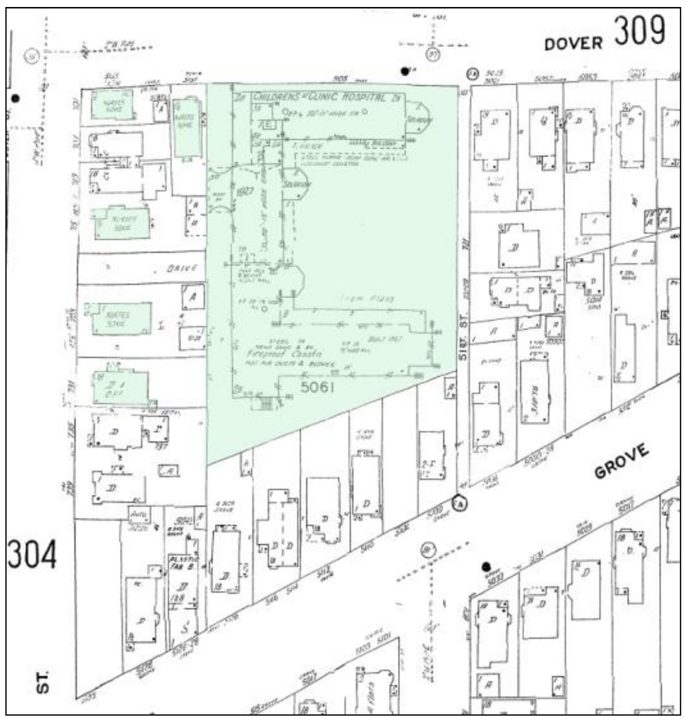

Figure 12. 1951 Sanborn Fire Insurance Map. The hospital property is highlighted in green. The McElrath mansion has been replaced by the B/C Wing, and several of the cottages in the surrounding neighborhood (highlighted) served as office space and housing for nurses.

[136] "Agreement between Elmer J. Freethy and the Children's Hospital of the East Bay."
[137] Stone and Mulloy Rendering, Children's Hospital, Oakland.
[138] 1951 Sanborn Fire Insurance Map.
[139] Morgan.
[140] Ibid.
[141] Boyd.

1960s

<u>1962:</u> The William H. and Helen C. Ford Diagnostic and Treatment Center is dedicated in September.[142] The front entrance and lobby of the original Baby Hospital wing are remodeled.[143] Third story additions at the northeast corner of the third story of the A/B Wing (Baby Hospital) and the north portion of the B/C Wing also took place about this time.

At this time, a driveway from Grove Street is paved. By this time, all parcels bordering 52nd Street are hospital-owned **(Figure 13)**.[144]

<u>1963:</u> A T-shaped nurses' dormitory is constructed at the corner of 52nd and Grove streets.[145]

<u>1964:</u> The hospital's name is changed to the Children's Hospital Medical Center of Northern California.[146]

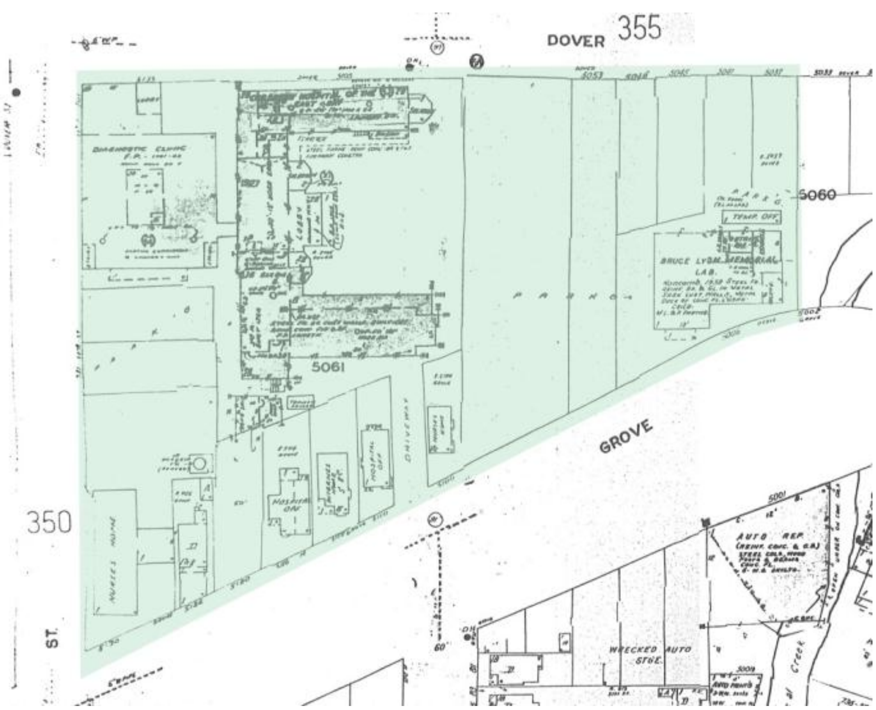

Figure 13. 1969 Sanborn Fire Insurance Map.
The Children's Hospital Complex is highlighted in green. The front entrance and lobby of the original hospital have been remodeled, the Bruce Lyon Memorial Research Laboratory and the Ford Diagnostic and Treatment Center have been constructed, and parking has been added to the north and south.

1970s

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142 Ibid.
143 Rutherford & Chekene.
144 1967 Sanborn Fire Insurance Map.
145 Boyd.
146 Boyd.

1972: Second story to the Bruce Lyon Memorial Research Center is completed.

1974: Construction of the third-floor addition to the Ford Diagnostic and Treatment Center is completed.[147]

1979: The West Site Plant (Central Plant) for the hospital is constructed adjacent to the west façade of the B/C Wing.[148] The city government approves a new hospital building at the intersection of 52nd and Grove streets, and $23 million for construction funding is secured through City of Oakland tax-free bonds.[149]

1980s

1980s: Trailers containing offices are most likely added west of the B/C Wing and south of the West Site Plant in the 1980s.[150]

1982: A new five-story patient care facility, the Patient Tower, opens on September 12. With this addition, the main entrance of the complex is reoriented north toward 52nd Street.[151]

1987: Several additions are made to the hospital complex, including a cafeteria constructed between the Patient Tower and the West Site Plant, and an addition to the West Site Plant. The porch on the east side of the B/C Wing is enclosed by a one-story addition.[152]

1990s

1992: Construction of the addition to the Bruce Lyon Memorial Research Center is completed.

1993: Construction of the reinforced masonry Cardiac Catheterization Laboratory, located between the A/B Wing (Baby Hospital) and the Ford Diagnostic Clinic and Treatment Center, is completed.[153] A new Outpatient Center and parking garage structure are built north of 52nd Street.[154]

Baby Hospital Expansion within the Temescal Neighborhood

As the Baby Hospital Association established itself within the community, it moved from its original location in the McElrath mansion to a purpose-built hospital building and continued to build additions and auxiliary buildings over the years. Because the hospital was initially located in a former residence and the property was surrounded by other residential properties, the hospital purchased the dwellings immediately surrounding it in order to expand. These cottages and bungalows, primarily constructed between 1900 and 1930, were adapted for hospital use, relocated, or demolished. The following section describes the effects of the hospital's expansion on the surrounding Temescal

[147] Rutherford & Chekene.
[148] Ibid.
[149] Boyd.
[150] Exact construction dates were not located; the suggested date range is based on site visits in April and May of 2008.
[151] "Come Join Our Celebration."
[152] Rutherford & Chekene.
[153] Rutherford & Chekene.
[154] Environmental Science Associates, Inc. "Final Addendum to the Draft EIR."

neighborhood, from the construction of the first hospital building in 1926 to the construction of a parking garage structure in the mid-1990s.

The 1911-12 Sanborn Fire Insurance Map shows the McElrath mansion and carriage house surrounded primarily by one and two-story frame dwellings. 51st Street, which was a mere alleyway at only ten feet in width, bordered the southern edge of the subject lot.

The Baby Hospital Association first expanded into the residential tracts immediately surrounding the hospital in 1926, when the Baby Hospital was constructed east of the McElrath mansion. The new hospital building was constructed within the boundaries of the McElrath parcel, but lacked connection to the street. Therefore, a residential parcel on 52nd Street was purchased from William and Marion Battenhouse and paved to serve as a driveway from 52nd Street to the new building.[155]

By the 1930s, the hospital rented some of the dwellings immediately surrounding the Baby Hospital. Letters between Clare Billet and William Oliver of the Children's Hospital and Helen and Mary Shafter indicate that the hospital leased the Shafter cottage at 721 51st Street, located directly south of the Baby Hospital building. The 1930 Sanborn Fire Insurance Map indicates that the carriage house that once contained the original clinic had been demolished by that time and that the McElrath mansion was connected to the Baby Hospital building. A storage facility and dwelling had also been constructed on the northern portion of the parcel by this time.

The 1951-52 Sanborn Fire Insurance Maps show that construction of the B/C Wing was complete. The McElrath mansion was no longer standing on the parcel and several dwellings on 52nd Street served as nurses' residences and hospital offices. The block bounded by 51st Street on the north, Dover Street on the east, Temescal Creek on the south, and Grove Street on the west contained seventeen single-family dwellings, a duplex, and a low-rise apartment building with three units.

Between 1942 and 1953, the hospital purchased additional residential lots so that it could continue to expand in response to its increased patient load. Properties purchased included: 5131 Dover Street, 5139 Grove Street, and residences at 707, 713, 715, 723, and 731 on 52nd Street.[156] The removal of these properties after 1951 gave the Hospital a greater street presence along 52nd Street.

In 1957 and 1958, the residential properties south of the hospital complex were purchased and the area was paved for surface parking. This change also increased the Hospital's street presence, as it was now visible from the southern approach on Grove Street. Eight properties on Grove Street and two on Dover Street were purchased, and the hospital also acquired one property on 52nd Street.[157]

The 1969 Sanborn Fire Insurance Map shows the Ford Diagnostic Clinic and Treatment Center located at the northeast corner of the hospital complex. With the exception of one residence at 5122

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[155] Deed between William and Marion Battenhouse and the Baby Hospital Association. 10/13/1926. [Children's Hospital Medical Center Collection, Box 4: Deeds and Legal Documents, Folder 16. Available at the Bancroft Library.]
[156] Title policies, deeds and other data relating to real property 1942 - 1953. [Children's Hospital Medical Center Collection, Box 4: Deeds and Legal Documents, Folder 3. Available at the Bancroft Library.]
[157] Parking Lot Properties. [Children's Hospital Medical Center Collection, Box 4: Deeds and Legal Documents, Folder 5. Available at the Bancroft Library.]

Grove Street, all residences surrounding the hospital were denoted as nurses' housing or hospital offices. A new T-shaped nurses' dormitory was located at the northwest corner of the hospital complex. 51st Street no longer bisected the subject block and the southern portion of the hospital complex had been paved for surface parking. The Bruce Lyon Memorial Laboratory appears on the southern portion of the site.

By 1982, all residential buildings along the south side of 52nd Street had been removed and the Patient Tower constructed at the southeast corner of 52nd and Grove streets. The Patient Tower included a diagonal setback, a circular drive, and an entry atrium, design cues which oriented the Hospital to the intersection of 52nd and Grove streets. In the mid-1980s, the Hospital expanded north by purchasing several properties on the block bounded by 52nd Street to the south, Dover Street to the east, 53rd Street to the north, and Grove Street (by this time renamed Martin Luther King Jr. Way) to the west. Trust companies purchased some of the properties, including 665 and 663 53rd Street, and the Children's Hospital of the East Bay purchased other properties, such as 671 53rd Street, directly from the property owners.[158] A parking garage structure and Outpatient Tower were constructed on the block north of the main hospital building in 1993.

Hospital Design

Prior to the turn of the 20th century, hospitals were not widely used. Generally, doctors made house calls to those who could afford them, and the poor and indigent were treated in almshouses run by religious organizations or philanthropic charities. Larger hospital campuses began to be constructed around the turn of the century in response to advances in epidemiology, and were often situated on large sites in rural areas to promote healing and to prevent the spread of disease. Urban public hospitals developed after the turn of the 20th century, in conjunction with the expansion of population, infrastructure, and commerce in American cities. As medical technology and education improved, more people started using public medical facilities, and hospitals needed more sophisticated facilities to perform operations, research diseases, and provide better patient care. Hospital campuses were often master-planned to expand in phases and stages, to accommodate the high cost of growth and changing medical practices.

The University of Virginia Hospital is an excellent example of hospital building evolution **(Figure 14)**. The University had a number of different medical buildings on its campus beginning in 1826, but it was not until the turn of the 20th century that the University called for the construction of a modern hospital. The main hospital building was constructed in 1901 by architect Paul Pelz, whose design scheme also provided a master plan for the future growth of the hospital. Based on this plan, wings flanking the main building were added in 1905 and 1907. The successful hospital soon became overcrowded, prompting the addition of a series of wings, including the Steele Wing in 1916, the McIntire Wing in 1924, and the Teachers' Prevention Wing in 1928—all connected by corridors.

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158 Deeds between the American Savings and Loan and the Federal National Mortgage Association to the Children's Hospital Medical Center of Northern California, 11/7/1985 and 11/7/1985. Deed between James and Jewell Pierce to the Children's Hospital Medical Center of Northern California. 3/5/1986. [Children's Hospital Medical Center Collection, Box 4: Deeds and Legal Documents, Folder 8. Available at the Bancroft Library.]

Since then, the University of Virginia Hospital has been further expanded into a large modern medical campus with facilities for teaching and research.[159]

Figure 14. University of Virginia Hospital, circa 1929.
Source: University of Virginia, "UVA Hospital celebrating 100 years,"
www.healthsystem.virginia.edu/internet/library/historical/uva_hospital/centennial/ (accessed 4 May 2007)

The design plan for many early hospitals included a series of narrow ward buildings, based on sanitary and practical principles advocated during the 19th century by the influential nurse Florence Nightingale. Nightingale also believed that hospitals should be no more than two stories high because buildings taller than this interfered with sunlight and ventilation, elements understood to expedite the healing process.[160] A narrow, open layout of wards made them easy to clean and ideal for monitoring a maximum number of patients by a minimum number of nurses. This division of space also allowed for a separation of uses, and hospitals were able to dedicate each wing to a specific function. The "Nightingale ward" became a standard of hospital construction in the late 19th and early 20th centuries. As medical practice changed and the general public began to demand more privacy, these open-plan wards were converted into double-loaded corridors with single patient rooms. After 1940, hospital design began to incorporate these new interior spatial needs, and the modern "block plan" design began to emerge.[161]

On the West Coast, evidence of these trends can be seen at San Francisco General Hospital **(Figure 15)**, which was established on its current site in the city's Potrero District in 1872. The site was selected because of the availability of land and the temperate climate in the district; a two-story wood frame building replaced several earlier city hospital buildings scattered throughout the city. The hospital struggled with overcrowding as the city's population continued to expand, and in 1908 the hospital was condemned and demolished due to an outbreak of the plague. In 1915, a new hospital complex was constructed on the site by City Architect Newton J. Tharp. The main hospital plan consisted of ward buildings flanking each side of a central administration building; a receiving building, a nurses' home, emergency hospital, laundry building, and power plant were added along the perimeter of the landscaped site in subsequent years. The new hospital was clad in brick and terracotta to fireproof the structure and to curb the spread of contagious diseases like tuberculosis. The design incorporated the Nightingale wards, standard for hospitals of the time. The master plan

[159] University of Virginia, "UVA Hospital Celebrating 100 Years" (www.healthsystem.virginia.edu/internet/library/historical/uva_hospital/centennial/,accessed 4 May 2007).
[160] Gary A. Noskin and Lance R. Peterson. "Engineering Infection Control through Facility Design," *Emerging Infectious Diseases*. March – April 2001. Vol. 7, No. 2.
[161] John D. Thompson and Grace Goldin, *The Hospital: A Social and Architectural History* (New Haven: Yale University Press, 1975).

for the site was designed to allow progressive expansion and additions so that the Hospital could adapt to changing demographics and medical practices.[162]

Figure 15. San Francisco General Hospital under construction, 1913.
Source: San Francisco Public Library Historical Photograph Collection.

The A/B Wing (Baby Hospital) at the Children's Hospital embodies early 20th-century hospital design trends. The two- and three-story building is narrow and linear in form and is clad in brick and terracotta to fireproof the structure and prevent the spread of contagious disease. Oriented to the south to maximize its exposure to sunlight, the building includes solariums and windows to ensure light and airflow. The floor plan also contains a large open-plan ward to allow nurses to maintain surveillance of the maximum number of patients at one time. Although constructed at a later time when linear hospital designs were beginning to be replaced by modern blocks, the B/C Wing mirrored the plan of the A/B Wing (Baby Hospital). Subsequently, the Ford Diagnostic and Treatment Center, constructed in 1962, is an example of the modern block hospital construction that broke away from the earlier 20th century designs. In this way, the main building complex of the Children's Hospital is represents both early and later hospital design in Alameda County and California.

Architects of the Children's Hospital

This section includes biographical information about the architects who designed the buildings at the Children's Hospital site that are more than 45 years old.

Edward W. Cannon (1884-1942)

Architect Edward W. Cannon was born in Oakland in 1884 and grew up in West Oakland. As a teen he worked as a machinist, and in 1909 married Wildridge Corinne Adams. By 1910 he was employed

[162] Page & Turnbull, Inc., "San Francisco General Hospital: Historic Resource Evaluation" (San Francisco: unpublished report, 2003).

as an architectural draftsman,[163] and in July 1911 was elected to membership of the San Francisco chapter of the American Institute of Architects.[164] During this time Cannon was a designer at the architectural firm of C. W. Dickey, a Bay Area and Honolulu-based architect whose work from this era includes three branches of the Oakland Public Library (including the Alden [Temescal] branch), the Homestead Loan Association Headquarters Building on University Avenue in Berkeley, and Kahn's Department Store (now the Rotunda Building) at 12th Street and Broadway in Oakland. Dickey's 1912 design for Kahn's Department Store was a four-story Y-shaped building with a dramatic glass dome crowning the Y-intersection. Edward Cannon later added a six story addition to this building in 1923 when he was practicing independently. The Kahn Department Store was listed in the National Register of Historic Places in February 1989.[165]

After 1915, C. W. Dickey moved his office to Honolulu, and Cannon began independent practice. His office was located in the Central Bank Building on 14th Street at Broadway. He is credited during this era with several single-family residential projects in Oakland and Piedmont; vacation cabins in outlying areas; medium-sized apartment buildings in Berkeley and Oakland, including 666 17th Street, 1705 Martin Luther King Way, and 1106 Madison; and a light industrial furniture factory at 221 Oak Street which has received Oakland Heritage Property Designation.[166] At the time of its construction in 1923, his design for the six-story addition to Kahn's Department Store appears to have been his largest contribution to Oakland's built environment, followed three years later by his largest stand-alone project, the design for the Baby Hospital.

Cannon continued to live and work in Oakland through the 1930s, and in 1937 was appointed one of several superintendents of construction at the Port of Oakland.[167] He died in Oakland on January 1, 1942, at the age of 58.[168]

Douglas Stone of Stone and Mulloy

Architect Douglas Dacre Stone (1897-1969) was born in Yokohama, Japan on March 10, 1897 and received his Master's degree in architecture from the University of California at Berkeley in 1922.[169] He began his career as a designer for the firm Hyman and Appleton Architects in San Francisco in 1924. Stone founded the firm of Stone and Mulloy Architects with Louis B. Mulloy (1910-1963) in 1927. The firm became known for their hospital designs, and designed approximately twenty hospitals and medical buildings in Northern California in the post-war era, including Peralta Hospital in Oakland (1950), Eden Hospital in Castro Valley (1954), and Pacific Presbyterian Medical Center in

163 United States Federal Census, 1910, accessed at www.ancestry.com.
164 *Architecture and Building*, Volume 43, Number 15, November 1911, 20.
165 "Kahn's Department Store, National Register of Historic Places Registration Form". Prepared by Mary Hardy and Alice Carey, June 8, 1988.
166 Ibid., and *Western Architect*, May 1920, and *Architect and Engineer of California and the Pacific Coast*, Volume 44, 1916, and "Prevention Institute Receives Heritage Property Designation", http://www.preventioninstitute.org/about-us/our-building.html.
167 "Regular Meeting of the Board of Port Commissioners of the Port of Oakland, January 4, 1937", accessed online, http://www.portofoakland.com/pdf/board/1937_minutes.pdf.
168 "Edward W. Cannon Obituary"., *The Oakland Tribune*, January 2, 1942.
169 "Designer of Hospitals Retires" (*San Francisco Chronicle* 12 September 1965), 12.

San Francisco (1960).[170] Douglas Stone was also involved in the design of the Federal Office Building in San Francisco, as well as the State Motor Vehicles Office Building in Sacramento.

Stone was appointed to the San Francisco Planning Commission in 1941 and also served as consultant to the State Hospital Advisory Council in 1943. A member of the California Chapter of the AIA, Stone was a member of various hospital associations including the International Hospital Federation. The firm of Stone and Mulloy was selected to design the master plan for Oakland Children's Hospital, and in 1946 they designed and oversaw construction of the Hospital's first major addition, the B/C Wing. Prior to his retirement in 1967, Stone spent five months traveling between Moscow, Kiev, and Leningrad displaying a model of the El Camino Hospital in Mountain View as part of the United States Information Agency's "Medicine USA" exhibit. Stone died on February 21, 1969.[171]

Stone, Marraccini and Patterson

In 1951, Silvio P. Marraccini (1918-1970) joined Stone and Mulloy, at which time the firm was renamed Stone, Mulloy and Marraccini Architects. Norman Patterson (1917-1990) joined the firm in 1955 and by 1956 the firm had been renamed Stone, Marraccini and Patterson.[172] Stone, Marraccini and Patterson are responsible for the design of both the Bruce Lyon Memorial Research Center (1958) and the Ford Diagnostic and Treatment Center (1962) at the Children's Hospital.

Stone Marraccini and Patterson continued to design hospital and medical buildings through the 1970s and 1980s, and in in 1997 merged with SGH Incorporated, one of the nation's largest architectural and engineering firms.[173]

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[170] California State Department of Parks and Recreation Primary Record, Sutter Medical Center, Castro Valley, prepared by ESA Consultants, January 2009.
[171] "Architect Douglas D. Stone Dies" (*San Francisco Chronicle* 22 February 1969), 30.
[172] "Stone, Douglas Dacre," ArchitectDB – Architect Record (https://digital.lib.washington.edu/php/architect/record.phtml, accessed 8 May 2008).
[173] "SHG Incorporated and Stone Marraccini Patterson Architects Announce Merger", PR Newswire, September 7, 1997.

V. CHILDREN'S HOSPITAL ARCHITECTURAL DESCRIPTIONS

This section provides an overview of the Children's Hospital study site and a description of all buildings at the site. More detailed architectural descriptions are provided for buildings that are more than 45 years old.

A. SITE DESCRIPTION

The Children's Hospital study site is roughly triangular and is bounded by 53rd Street to the north, the Grove Shafter Freeway (State Route 24) and Dover Street to the east, an exit ramp from the freeway to the south, and Martin Luther King Jr. Way to the west **(Figure 16).** The main façade and the primary entrance to the Hospital complex faces northwest onto 52nd Street and is part of the Patient Tower. The Ford Diagnostic and Treatment Center sits to the east of the Patient Tower, at the southwest corner of 52nd and Dover streets; its primary façade faces east. A pedestrian overpass links the Patient Tower to the Outpatient Center, which is located north of 52nd Street and adjoined by the Parking Structure at the northern perimeter of the site. The Cafeteria and the Central Utility Plant are located to the south of the Patient Tower and are both oriented to the west. The A/B Wing (Baby Hospital) and the B/C Wing are conjoined in a south-facing U-plan, and together sit east of the Central Plant and south of the Patient Tower and the Ford Diagnostic and Treatment Center. The A/B Wing (Baby Hospital) and the B/C Wing form a courtyard with a circular drive. A large magnolia tree grows in the courtyard east of the B/C Wing. The Cardiac Catheterization Lab is located between the Ford Diagnostic and Treatment Center and the A/B Wing (Baby Hospital), at the east perimeter of the site. A Helistop sits to the south of the courtyard and the entrance to the A/B Wing (Baby Hospital). The Bruce Lyon Memorial Research Center is located south of the helistop, with the Research Center Addition at the southernmost triangular end of the hospital parcel. The site includes eight portable buildings south of the B/C Wing and east of the Bruce Lyon Memorial Research Center.

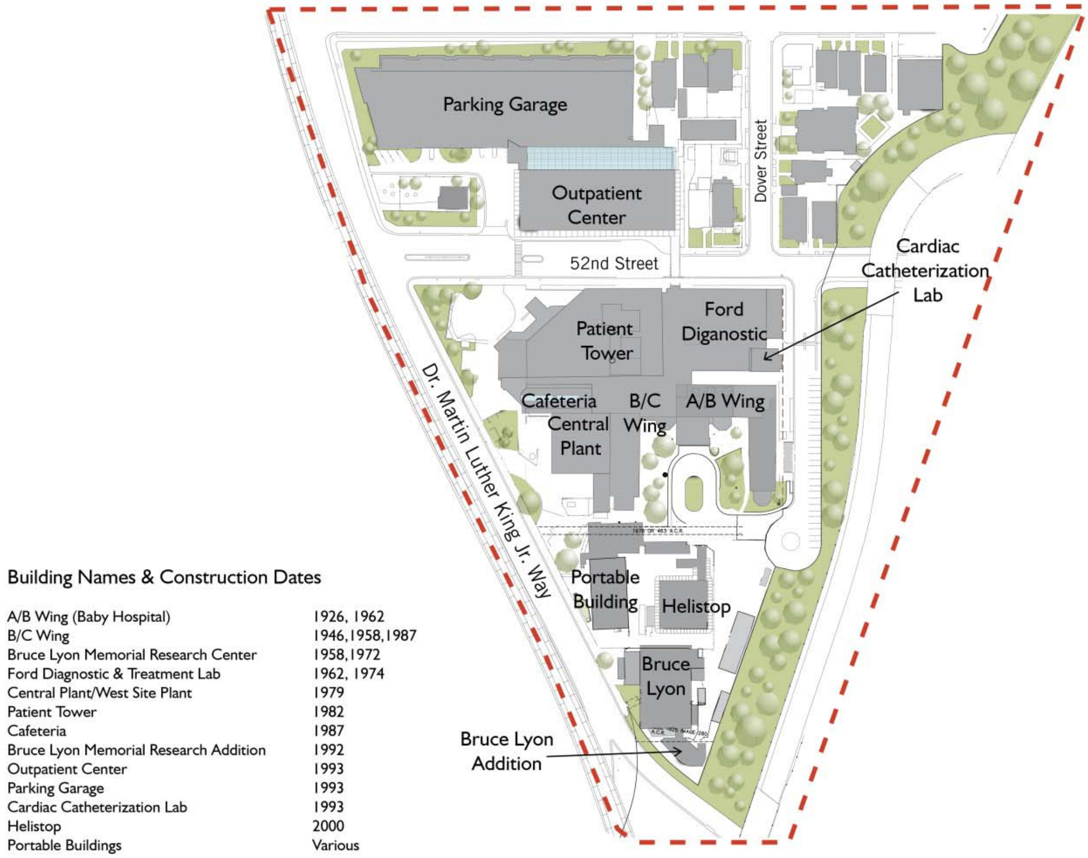


Figure 16. Site diagram of the Children's Hospital and Research Center.
Source: Children's Hospital Zoning Pre-Application Presentation, Taylor and HDR, edited by Page & Turnbull, 2013.

B. A/B WING (BABY HOSPITAL) (1926, ADDITIONS CA. 1948 AND 1962)

Exterior

In 1926, architect Edward W. Cannon designed a combination two- and three-story over exposed basement, brick-clad, reinforced concrete hospital building in the Northern Italian Renaissance style **(Figure 17)**. The building was purpose-built to house the Baby Hospital, which had previously been housed in a converted Victorian mansion on the site. The A/B Wing (Baby Hospital) has an L-shaped plan that frames the north and east sides of a courtyard located to the southwest of the building. The ell that is oriented on the east-west axis is three stories in height and capped by a gable roof, while the ell that is oriented on the north-south axis is two stories in height and capped by a flat roof. An elevator penthouse and wide brick chimneys surmounted by arcaded Romanesque caps protrude from the roof where the two ells meet. An additional chimney is located at the middle of the east-west ell. Typical fenestration on the building consists of paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels. All facades are adorned with a terra-cotta frieze featuring a circle-and-sheaf motif. The foundation of the building is concrete.

Figure 17. South and west façade of the A/B Wing (Baby Hospital), four-photograph montage. Source: Page & Turnbull, 2013.

The south façade of the A/B Wing (Baby Hospital)'s east-west ell served as the primary façade of the Hospital from 1926 until 1982 and faces onto a courtyard and circular driveway. The primary entrance is located at the center of the south façade, at the ground floor of a two-story brick addition that was constructed in 1962. The primary entrance is a pair of fully-glazed aluminum sliding doors flanked by fixed, plate-glass, aluminum-sash windows; the entrance is accessed by a short flight of concrete steps and overhung by a flat, projecting canopy **(Figure 18).** Fixed and awning aluminum-sash ribbon windows, defined by a continuous inset brick lintel, span the second story of the addition. A circle-and-sheaf frieze spans the width of the addition and continues onto the older portions of the building. A Bambino emblem is located within the frieze above where the primary entrance is located; the Bambino is often used as a symbol for pediatrics and is based on a sculpture by Italian Renaissance artist Andrea della Robbia.

To the east of the addition, near the interior angle of the L-shaped plan, is a two-story, five-sided solarium bay window with multi-light, steel-sash windows **(Figure 19).** The windows are separated by fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins. Each story is surmounted by a molded frieze depicting animal and bird motifs and topped by a simple metal cornice. The basement level to the east of the five-sided bay features multi-lite steel sash windows, some with metal grilles, which look out into a concrete light well enclosed a metal railing. At the third story level of the south façade of the east-west ell are windows of the primary type (paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels). One window at the first floor is infilled with brick. The façade terminates in a simple cornice below the slightly overhanging eaves of the gable roof.

Figure 18. South facade, detail of 1962 addition and primary entrance, showing Bambino frieze detail. Source: Page & Turnbull, 2008.

Figure 19. South facade, showing two-story bay window. Source: Page & Turnbull, 2013.

The west façade of the A/B Wing (Baby Hospital) faces onto the courtyard and is divided into nine structural bays **(Figure 20)**. An exposed basement level is visible at the south end of the facade and contains multi-lite industrial steel sash windows with textured wire glass. The below-grade light well features concrete walls, metal access stairs, and a metal railing. At the first story, the third northernmost bay features a fully-glazed aluminum door surmounted by a metal awning. Two metal awnings also cover windows north of the entrance. A concrete terrace with a brick wall is located beneath the balcony. A flight of concrete steps provides access from the terrace down to the basement. A concrete staircase that spans the fourth and fifth bays leads to a terracotta-clad balcony at the second story level **(Figure 21).** The four bays associated with the terrace contain entrances with paired, partially-glazed wood doors, multi-light glazed transoms, and multi-light sidelights. Some window transoms have been replaced by air-conditioning window units.

At the second story level, the balcony stretches across the sixth, seventh, and eighth bays above a terrace. It is supported by four sets of large, paired ornamental terracotta brackets with floral and acanthus leaf motifs. These brackets continue as paired pilasters dividing the paneled balcony railing. Access to the balcony is provided by paired, partially-glazed wood doors surrounded by multi-light glazed transoms and sidelights that are located in the eighth structural bay. One window immediately north of the second story entrance has been replaced with a flush wood door and brick infill. All other bays on the second story feature paired, two-over-two aluminum frame windows surmounted by two-light transoms. The west façade terminates in a flat roofline adorned with the terracotta frieze described earlier.

Figure 20. West facade of the A/B Wing. Source: Page & Turnbull, 2013.

Figure 21. West facade of the A/B Wing, detail of second story balcony. Source: Page & Turnbull, 2013.

The narrow southern façade of the north-south portion of the ell includes a two-story, five-sided bay window with multi-light, steel-sash windows **(Figure 22).** The windows are separated by fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins. Each story is surmounted by a molded frieze depicting animal and bird motifs and topped by a simple metal cornice.

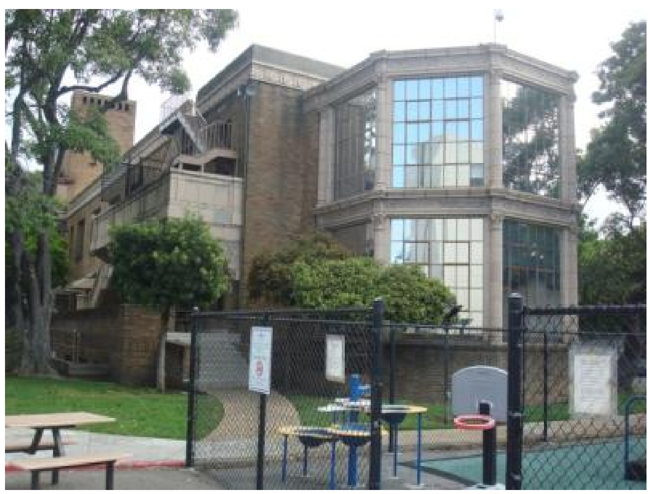


Figure 22. Southern facade of the north-south portion of the ell of the A/B Wing. Source: Page & Turnbull, 2013.

The east façade of the A/B Wing (Baby Hospital) faces a driveway and surface parking lot that was formerly Dover Street. The façade is divided into twelve structural bays **(Figure 23)**. Entrances at this façade are located at the exposed basement story, which is accessed via a concrete stair and includes several glazed wood entry doors and multi-lite steel sash industrial windows, all blinded by opaque paint or metal panels **(Figure 24)**. The first and second stories are fenestrated with windows of the primary type. As on the west façade, some transoms have been replaced by air-conditioning window units. A granite plaque reading "The Baby Hospital 1927" is located on the wall at the south end of the façade.

Figure 23. East facade of the A/B Wing. Source: Page & Turnbull, 2013.

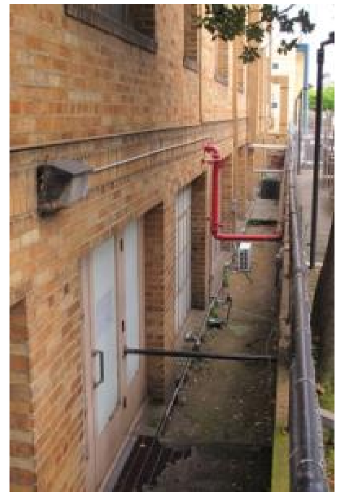


Figure 24. East facade of the A/B Wing, exposed basement story. Source: Page & Turnbull, 2013.

The north façade of the A/B Wing (Baby Hospital) faces an access driveway and the Cardiac Catheterization Lab and the Ford Diagnostic and Treatment Center **(Figure 25).** The façade is three stories over an exposed basement. The basement level includes several multi-lite steel sash window groups. A concrete stair leads to a glazed inset aluminum door at the first story. Fenestration at the first and second stories is of the primary type, while fenestration at the third story is single-lite fixed over awning with steel sash at the east, and alternating primary type and multi-lite steel sash at the east. Three windows are infilled with brick at the west end of the first story. The façade terminates with a simple flush cornice at the east and a molded metal cornice at the west.

Figure 25. North facade of the A/B Wing. Source: Page & Turnbull, 2013.

A/B Wing (Baby Hospital) Interior

The A/B Wing (Baby Hospital) has an L-shaped plan that accommodates double-loaded corridors at the first and second stories, which terminate in formerly open-plan solarium rooms (now divided into office spaces) at the south end of its north-south axis **(Figure 26)**. Open-plan solariums are also located on the east-west axis at the first and second stories, currently used as a board room and a doctor's lounge, respectively. As is typical of hospitals, the configuration of interior spaces has been altered to change uses and accomodate equipment. Remodeled rooms are typically furnished with dropped acoustical tile ceilings, box fluorescent lighting, and pre-fabricated carpet tiles. Overall, the offices on the second story are less altered than those on the first story and contain gypsum board-clad walls with raised wiring strips and light switches. Notable features that remain in the A/B Wing (Baby Hospital) include a tile-clad operating room on the second story that features built-in metal cabinetry which is now used as a storage closet, push-button nurse call buttons that are located in the upper portion of the walls in some offices, and wood railings in the stairwells at the east-west axis of the building **(Figure 27)**.

Figure 26. Interior of the A/B Wing, typical office. Source: Page & Turnbull, 2013.

Figure 27. Interior of the A/B Wing, original stair railings. Source: Page & Turnbull, 2013.

C. B/C WING (1946, ADDITIONS 1958 AND 1987)

In 1946, architects Douglas D. Stone and Louis B. Mulloy designed the B/C Wing, an L-shaped, two-story over exposed basement addition that was added to the west side of the existing A/B Wing. This building was constructed to replace the McElrath mansion, which was located at this site and originally housed the Baby Hospital. The mature magnolia which was planted in 1860 was preserved in the demolition of the McElrath mansion and the construction of the B/C Wing. The B/C Wing closely mirrors the plan of the A/B Wing (Baby Hospital) and matches its exterior brick color, and when constructed roughly doubled the size of the facility. The B/C Wing abuts the west end of the east-west axis of the A/B Wing (Baby Hospital), creating a U-shaped complex that surrounds the courtyard and circular drive **(Figure 28)**. The two buildings have independent structural systems.

Figure 28. South and east façade of the B/C Wing, three-photograph montage. Source: Page & Turnbull, 2013.

The south façade of east-west axis of the B/C Wing features an exposed basement with multi-lite industrial steel sash windows and large metal doors. The facade is dominated by a two-story over exposed basement, five-sided, angled bay window similar to those at the A/B Wing (Baby Hospital). The basement level features metal vents. The upper two stories feature multi-light, steel-sash windows surrounded by composite colonettes and friezes. It is capped by a flat roof. The west portion of the south façade is fenestrated primarily with three-part aluminum sash windows, which are the primary window type on this wing. The south façade of the B/C Wing terminates in a flat roofline adorned with the terra-cotta frieze that is also found on the A/B Wing (Baby Hospital). In 1958, a third story was added to the east-west axis of the B/C Wing. This addition features fixed and awning aluminum-sash windows.

The exposed basement level of the east façade of the B/C Wing features multi-lite steel sash windows, some of which are infilled with metal plates or air conditioning units. The light well features a concrete retaining wall and metal railings. The first story of the east façade includes a brick porch mirroring that at the A/B Wing; this brick porch was enclosed in 1987 by a one story addition, which includes four-light, aluminum-sash ribbon windows with operable awning portions **(Figure 29).** Metal downspouts are attached to projecting triangular rain catchments. The roofline of the addition features sheet metal coping. The second story of the east facade is fenestrated with three-part aluminum sash windows and terminates in the terracotta frieze described earlier. At the south end of north-south ell of the B/C Wing, a two-story squared bay clad in scored concrete includes three-part steel-sash windows with fixed and awning portions at both stories **(Figure 30)**. Two partially-glazed wood doors with glazed transoms are located on the west side of the bay at the first and second story levels. The second-story entrance is accessed by a metal exterior staircase.

Figure 29. Detail of east facade of B/C Wing, showing first story addition. Source: Page & Turnbull, 2013.

Figure 30. Detail of south part of B/C Wing showing addition. Source: Page & Turnbull, 2013.

The magnolia tree located directly east of the east façade of the B/C Wing was planted in 1860 by women of the Alden family. Solomon Alden was the original landowner of the site, and in 1875 his daughter Elsie married John McElrath The McElraths constructed the Victorian mansion that bore their name and housed the Baby Hospital at its founding in 1912 **(Figure 31).** The tree was preserved in the demolition of the first house on the property, an Italianate house which belonged to Solomon Alden. It was preserved again when the McElrath mansion was constructed, and again when it was demolished in advance of the construction of the B/C Wing.

Figure 31. Magnolia tree located east of the east facade of the B/C Wing, planted 1860 by women of the McElrath family. Source: Page & Turnbull, 2013.

The west façade of the B/C Wing is abutted at the north end of the first story by the Central Plant/West Site Plant; one 12-lite aluminum fixed and awning window group is visible at the southern portion **(Figure 32)**. At the second story, two 12-lite aluminum fixed and awning window groups are located at the south, and several smaller aluminum-sash windows are visible above the Central Plant. The west façade terminates with a flush roofline.

The north façade of the B/C Wing abuts the Patient Tower completely and has no visible façade.

Figure 32. West façade of the B/C Wing.
Source: Page & Turnbull, 2013.

D. BRUCE LYON MEMORIAL RESEARCH CENTER (1958, ADDITION 1972)

In 1958, the firm Stone, Marraccini and Patterson designed the Bruce Lyon Memorial Research Center ("Research Center"), located south of the courtyard between the A/B Wing and the B/C Wing and now south of the helistop **(Figure 33)**. The Research Center was designed and built as a one-story International style building with stack-bond brick cladding and a flat roof. In 1972, a second story addition was added to the Research Center, which is clad in stucco and capped with a flat roof. The second story addition is supported by concrete posts, rests on top of the original building, and projects in volume at all facades beyond the footprint of the original building. The building's original primary entrance is set in an enclosed glazed portico located on the west side of the building. This entrance is no longer in use, and the contemporary primary entrance is located on the east façade at the northeast corner of the building **(Figure 34).**

Figure 33. Research Center, north and west façades, original primary entrance visible at right. Source. Page & Turnbull, 2008.

Figure 34. Research Center, detail of primary entrance at east facade. Source: Page & Turnbull, 2013.

The east façade, which faces several portable structures and an embankment to the Grove Shafter freeway beyond, is loosely organized into four bays. The primary entrance is a flush metal door located at the first story of the northernmost bay. At both stories this bay is clad in stucco and projects in mass from the main volume of the building; at the second story there are two two-lite fixed aluminum sash windows. The center two bays are clad in stack-bond brick at the first story and stucco at the second story; the first story is largely obscured by utility sheds and portable structures. The second story rests on two concrete piers and projects in mass several feet beyond the mass of the first story. It has four fixed aluminum-sash windows at the center two bays. The southern bay projects in mass from the main volume of the building, is clad in stucco at both stories, and has fixed aluminum-sash windows at both stories.

The north façade faces the helistop and a portable structure. The eastern part of the north façade is clad in stucco at both stories and has no windows or doors. The remainder of the first story includes a continuous band of fixed and awning steel-sash ribbon windows with metal spandrel panels above and below. A metal cornice runs the width of the first story, above which the second story addition projects approximately four feet beyond the mass of the first story. The second story is supported by a concrete post at the west and is clad in scored stucco. The second story has two groups of eight fixed aluminum sash windows and terminates with a projecting band of stucco and a flush roof.

The west façade faces Martin Luther King Jr. Way and the elevated BART tracks. The first story features a projecting mass at the north, which includes fixed and awning metal-sash ribbon windows with metal spandrel panels above and below at the north and south facades, and stack bond brick cladding at the west façade **(Figure 35)**. There is a glass vestibule with a deep overhanging flat roof at center, which is no longer in use and is fronted by a decorative cinderblock wall. The remainder of the first story of the west façade includes fixed and awning metal-sash ribbon windows with metal spandrel panels above and below. The second story of the west façade is supported by concrete posts and clad in scored stucco **(Figure 36)**. It includes ten two-part fixed aluminum sash windows, above which the story terminates with a projecting band of stucco and a flush roof.

Figure 35. Research Center, west facade, detail of former primary entry vestibule. Source: Page & Turnbull, 2013.

Figure 36. Research Center, west facade. Source: Page & Turnbull, 2013.

The south façade of the Research Center faces the Research Center Addition **(Figure 37)**. The first story is clad in stack bond brick and has no windows and one metal door. The first story projects beyond the second story, which is clad in score stucco and includes two groups of eight fixed aluminum sash windows. At the center of the second story there is a passageway to the Research Center Addition, which is clad in stucco. The south facade terminates with a projecting band of stucco, at which there is an affixed metal sign for the hospital, and a flush roof.

Figure 37. Research Center, south facade (partial).
Source: Page & Turnbull, 2013.

E. FORD DIAGNOSTIC AND TREATMENT CENTER (1962, ADDITION 1974)

In 1962, the firm Stone, Marraccini and Patterson designed the Ford Diagnostic and Treatment Center ("the Center") located north of the A/B Wing (Baby Hospital) at the southwest corner of 52nd and Dover streets **(Figure 38)**. The reinforced concrete building is roughly square in plan. It is connected to the A/B Wing by a small hyphen projecting from the south façade. The west façade of the Center abuts the east façade of the Patient Tower. The original design of this building was two stories in height; a third story was added in 1974. The building is clad in smooth stucco and capped with a flat roof. All windows are metal sash.

Figure 38. Ford Diagnostic and Treatment Center, 1964, addition 1974. Source: Page & Turnbull, April 2013.

Figure 39. Ford Diagnostic and Treatment Center, primary (east) facade and entrance detail. Source: Page & Turnbull, April 2013.

The primary facade faces east and consists of three structural bays. The primary entrance is located in the southernmost bay and includes paired, fully-glazed metal doors, set within a double-height eleven-pane window wall **(Figure 39).** The central and northern bays both have five awning windows at the (below grade) first story, and five fixed over awning windows at the second story. All three bays have areas of painted metal spandrel panels above and below the windows. The third story of the building (1974 addition) is stepped back from the primary façade and includes a series of tinted atrium-style windows, with an enclosed area at the south.

The north façade faces 52nd Street and is organized into seven bays **(Figure 40)**. The easternmost bay is two stories in height due to the third story setback, and the remainder of the bays are three stories in height. The westernmost bay is clad with brick at all three stories, and includes the Pedestrian Bridge to the Outpatient Clinic at the third story. At all other bays, the first story (below grade) has five awning windows, and the second story has five fixed over awning windows. At the third story, the second bay is clad in stucco, while the remaining bays five fixed over awning windows. All bays have areas of painted metal spandrel panels above and below the windows, and the façade terminates flush, with a metal safety railing above.

The west façade fully abuts the Patient Tower to the east. The south façade is visible from the vantage of a supply driveway between the Center and the A/B Wing (Baby Hospital) **(Figure 41)**. The south façade includes three bays, which are blinded at the first and second stories and have contemporary 15-lite fixed windows at the third story.

Figure 40. Ford Diagnostic and Research Center, north facade. Source: Page & Turnbull, 2013.

Figure 41. Ford Diagnostic and Research Center, south facade. Source: Page & Turnbull, 2013.

F. CENTRAL PLANT/WEST SITE PLANT (1979, ADDITION 1987)

In 1979, the one-story Central Plant/West Site Plant was constructed abutting the west side of the B/C Wing **(Figure 42)**. A second floor was added to the Plant in 1987. The Plant is clad in concrete panels and features small awning aluminum-sash windows on the second story.

Figure 42. Central Plant (at left) and the west facade of the B/C Wing. Source: Page & Turnbull, 2008.

G. PATIENT TOWER (1982)

In 1982, the five-story Patient Tower was constructed north of the B/C Wing and west of the Ford Diagnostic and Treatment Center. The concrete-panel-clad Patient Tower now serves as the hub of the hospital complex and as the main entrance to the hospital complex. A circular drive at the site's northwest corner provides access to the main entrance on the northwest façade and the emergency entrance on the west façade **(Figure 43)**. The main entrance is set in a two-story fully-glazed entry lobby and features fully-glazed aluminum sliding doors with glazed transoms and sidelights. The north and northwest façades of the Patient Tower feature large and small fixed aluminum-sash ribbon windows **(Figure 44)**.

Figure 43. Patient Tower, primary (northwest) facade, showing main entrance and emergency service entrance. Source: Page & Turnbull, 2013.

Figure 44. Patient Tower, north facade. Source: Page & Turnbull, 2013.

H. CAFETERIA (1987)

In 1987, a one-story Cafeteria was constructed, located in the space south of the Patient Tower, north of the West Site Plant/Central Plant building, and east of the B/C Wing. It is clad in smooth stucco and features a wall of fixed aluminum-sash windows at the west façade **(Figure 45)**. A stained glass oculus references the bambino above the entrance of the A/B Wing (Baby Hospital) **(Figure 46).** The Cafeteria is accessed from within other Hospital areas and has no primary street-level entrance; the entrances are associated with emergency services and utilities.

Figure 45. Cafeteria, west facade. Source: Page & Turnbull, 2013.

Figure 46. Cafeteria Oculus with bambino, west facade. Source: Page & Turnbull, 2013.

I. THE BRUCE LYON MEMORIAL RESEARCH CENTER ADDITION (1992)

The Bruce Lyon Memorial Research Center Addition was constructed in 1992 on the south side of the Research Center **(Figure 47)**. The three-story Addition is clad in bands of textured and colored stucco with horizontal scoring. The building features fixed, square, aluminum-frame windows and a stepped parapet with two crenellations. The primary entrance is located at the east façade and consists of an aluminum-frame door and window system with a fully glazed door **(Figure 48)**.

Figure 47. Research Center Addition, southwest facade. Source: Page & Turnbull, 2013.

Figure 48. Research Center Addition, east facade with primary entrance. Source: Page & Turnbull, 2013.

J. OUTPATIENT CENTER (1993)

The Outpatient Center is a five-story steel-frame and concrete building located north of 52nd Street **(Figure 49)**. The primary entrance is located on the north end of the west façade. The building is clad in stucco, capped by a flat roof, and features fixed and sliding aluminum-sash windows and glass block windows. Plastered columns visually mark the first through third stories. A three-story attached atrium at the east portion of the north façade includes glazed walls and a barrel roof. A pedestrian bridge at the third-floor level connects the Outpatient Center to the Patient Tower **(Figure 50)**.

Figure 49. Outpatient Center, west and south facades. Source: Page & Turnbull, 2013.

Figure 50. Pedestrian Bridge between the Patient Tower (left) and the Outpatient Center (right). Source: Page & Turnbull, 2013.

K. PARKING GARAGE (1993)

A five-level parking garage is located northwest of the Outpatient Center **(Figure 51)**. It is clad in concrete panels and is set back from the street at the north and south facades **(Figure 52)**.

Figure 51. Parking Garage, west facade. Source: Page & Turnbull, 2013.

Figure 52. Parking Garage, south facade. Source: Page & Turnbull, 2008.

L. CARDIAC CATHETERIZATION LAB (1993)

In 1993, a one-story, flat-roofed Cardiac Catheterization Lab was constructed at the southeast corner of the Diagnostic and Treatment Center. The Lab is clad in concrete panels with areas of decorative ceramic tile, and has no windows **(Figure 53)**. The building is accessed via a concrete stair located to the north, between the Catheterization Lab and the Ford Diagnostic and Treatment Center. The stair leads to a metal door and an egress tower which also includes a second-story stair and entrance.

Figure 53. Cardiac Catheterization Lab, south and east facades.
Source: Page & Turnbull, 2013.

M. HELISTOP (2000)

The three-level helistop is located between the B/C Wing and the Bruce Lyon Research Center **(Figure 54)**. It is constructed of metal and is attached to a four-story elevator shaft.

Figure 54. Helistop, view looking south.
Source: Page & Turnbull, June 2008.

N. PORTABLE BUILDINGS (VARIOUS DATES)

Eight portable buildings are located on the hospital site: two to the east of the A/B Wing (Baby Hospital), three south of the B/C Wing, and three east of the Bruce Lyon Memorial Research Center **(Figure 55)**. These buildings range in size. They generally have flat roofs and are clad in vertical wood siding, with sliding aluminum-sash windows.

Figure 55. Typical portable building, east of the Bruce Lyon Memorial Research Center.
Source: Page & Turnbull, June 2008

VI. EVALUATION OF CHILDREN'S HOSPITAL BUILDINGS FOR CALIFORNIA REGISTER ELIGIBILITY

The following section evaluates the buildings on the Children's Hospital study site that are more than 45 years old for eligibility for listing in the California Register of Historical Resources. It also includes an evaluation of the Children's Hospital complex as a potential historic district.

A. A/B WING (BABY HOSPITAL) EVALUATION

This section evaluates the A/B Wing (Baby Hospital) for its eligibility for listing in the California Register of Historical Resources, including application of criteria of significance and evaluation of integrity (see pages 4-5 for evaluative criteria).

Criterion 1 (Events)

The A/B Wing (Baby Hospital) appears significant under California Register Criterion 1 as a building that reflects "events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States." Organized in 1912 and dedicated in 1914, the Baby Hospital was the first medical facility in the East Bay to provide services specifically for young children, during a time when death rates for children under two stood at over ten percent. The Hospital's Clinic offered pre-natal, child-rearing classes, and wellness workshops which served nearly 7,000 young patients in its first year of operation. The mission of the Baby Hospital, which was said to be the first and only of its kind in the state of California, was to care for sick babies regardless of creed, nationality, or race. In an era before health insurance, medical care at the Baby Hospital was provided regardless of ability to pay for services; in 1922, 58% of visits were free and 30% were partially paid. As early as the 1920s, the hospital also operated as a teaching facility, training pediatricians. The Hospital was a thriving institution in the 1920s, when in spite of budget shortfalls it was able to fund and oversee the construction of a modern purpose-built hospital building, the extant A/B Wing, which was completed in 1926. As the earliest purpose-built hospital for children in the East Bay, the A/B Wing (Baby Hospital) is significant for its unique role in providing medical care and services to children and as a teaching hospital. The period of significance for the hospital under this criterion is 1912-1926, which extends from the founding of the hospital to the year that the A/B Wing (Baby Hospital) was completed; thus, the period of significance for the A/B Wing (Baby Hospital) is essentially the year of its construction.

Criterion 2 (Persons)

The A/B Wing (Baby Hospital) does not appear to be eligible for the California Register under Criterion 2. Although prominent persons have been associated with the Baby Hospital over time, research has failed to reveal a significant association that would justify inclusion of the A/B Wing (Baby Hospital) in the California Register under this criterion.

Criterion 3 (Architecture)

The A/B Wing (Baby Hospital) appears significant under California Register Criterion 3 as a building that "embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values."

As a representative of a "type and period," the A/B Wing (Baby Hospital) is an early purpose-built hospital and embodies early 20th century hospital design trends. The building is narrow and linear in form and is clad in brick and terracotta to fireproof the structure and prevent the spread of contagious disease. Oriented to the south to maximize its exposure to sunlight, the building includes solariums and windows to ensure light and airflow. The original floor plan also contained a large open-plan ward to allow nurses to maintain surveillance of the maximum number of patients at one time.

Additionally, the A/B Wing (Baby Hospital) possesses high artistic values. Designed by architect Edward W. Cannon in a Northern Italian Renaissance style, the building's architectural detail is rich and includes fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins, molded frieze depicting animal and bird motifs, bambino medallion, and a terra cotta balcony supported by ornamented brackets with floral and acanthus-leaf motifs. The building displays a high level of façade detail in the brickwork and the window configuration, which have multi-lite transom windows and brick lintels.

Architect Edward W. Cannon was active in Oakland and the greater California Bay Area between 1911 and 1940. He practiced in the firm of C. W. Dickey during his early career and practiced independently afterwards. He designed the six-story addition to Kahn's Department Store at Broadway and 12th Street in Oakland, which is listed in the National Register. He also designed a handful of residences, apartment buildings, and one light industrial building in Oakland, a former furniture factory located at 221 Oak Street, which has received Oakland Heritage Property Designation. Although the A/B Wing (Baby Hospital) is a fine example of his work, Cannon's contributions to the built environment do not raise him to the level of master architect.

Nevertheless, the A/B Wing (Baby Hospital) is significant under Criterion 3 because it "embodies the distinctive characteristics of a type and period" and it does "possess high artistic values." The period of significance under this criterion is 1926, the year the building was constructed.

Criterion 4 (Information Potential)

The A/B Wing (Baby Hospital) was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report. The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is for cases when the building itself is the principal source of important construction-related information. Based on historic research, Criterion 4 is not applicable to the A/B Wing (Baby Hospital).

A/B Wing (Baby Hospital) Integrity

In addition to being determined eligible under at least one of the four California Register criteria, properties must also retain sufficient historical integrity in order to be deemed significant. The following section evaluates the integrity of the A/B Wing (Baby Hospital).

The A/B Wing (Baby Hospital) maintains integrity of location, workmanship, and association; a moderate degree of integrity of design and materials; and no longer retains integrity of setting or feeling from its period of significance (1926). Due to compromised integrity, the building does not qualify for listing in the California Register. A detailed evaluation of the A/B Wing (Baby Hospital)'s integrity according to each aspect follows.

Location

The location of the A/B Wing (Baby Hospital) has not changed. The hospital complex has expanded into the surrounding Temescal neighborhood, and the McElrath mansion that originally housed the Baby Hospital is no longer extant; however, the purpose-built A/B Wing (Baby Hospital) remains in its original location and has not been relocated.

Setting

Originally, the A/B Wing (Baby Hospital) was located at the center of a residential block and faced south onto 51st Street (no longer extant). A driveway from 52nd Street led to an ambulance entry at the building's northeast corner and the main entry was located to the west side of the building's south façade. This entrance was remodeled and continued to serve as the complex's primary entrance until the five-story Patient Tower was constructed northwest of the original Baby Hospital wing. The Patient Tower has an angled entrance, facing northwest onto Martin Luther King Jr. Way and 52nd Street, which supplanted the entrance on the A/B Wing (Baby Hospital) as the primary entrance. Several other additions to the complex, including the Patient Tower, have obscured the Baby Hospital and have separated it from 52nd Street, the road which replaced 51st Street as the main access route to the hospital. From 52nd Street, only portions of the east facade of the Baby Hospital may be seen from the public right of way (Dover Street being closed to public access along the east side of the hospital property). The relocation of the primary entrance has altered the way in which the building is approached, changed the courtyard from a private, secluded space into a public traffic path, and significantly changed the visibility and understanding of the Baby Hospital wing, which now reads as a secondary structure at the rear of the hospital complex.

When constructed in 1926, the A/B Wing (Baby Hospital) building was physically connected to the McElrath mansion, the oldest dwelling in Temescal and the building that had served as the first Baby Hospital. Despite being an institutional building constructed of steel, concrete, and brick, the two-story Baby Hospital building maintained a size and scale in keeping with the surrounding neighborhood, which consisted primarily of small, wood frame bungalows and cottages that were one to two stories tall.

The McElrath mansion was removed in 1946 and the present B/C Wing was constructed to the west of and directly adjacent to the Baby Hospital as part of architect Douglas Stone's plan to expand the hospital as part of a comprehensive master plan. However, only the B/C Wing was constructed per the master plan and even this Wing, though similar, was not constructed exactly as proposed. The addition to the A/B Wing (Baby Hospital) nearly doubled the size of the hospital and changed its form from an L- to a U-shaped plan. Because the form of the B/C Wing mirrored that of the original A/B Wing (Baby Hospital), the original form of the Baby Hospital is no longer distinguishable. Instead, the original building and B/C Wing read as a single structure, though they have independent structural systems. The addition of the two-story, box-like Diagnostic and Treatment Center and the remodeling of the Baby Hospital's main entry contributed to the overall reconfiguring of the complex and differed from the massing of the Baby Hospital wing, which had a linear and narrow form.

Later additions to the complex further altered its overall massing and size. A third story added to the Diagnostic and Treatment Center and the construction of the five-story Patient Tower served to overshadow the lower profile A/B Wing (Baby Hospital). The construction of a Cardiac Catheterization Lab adjacent to the north façade of the Baby Hospital wing further hid the original building and altered its form. The addition of the helistop and other structures directly south of the A/B Wing (Baby Hospital) overshadow the lower profile A/B Wing.

Furthermore, the setting of the residential neighborhood surrounding the hospital has changed over time. Not only were residences to the south and north of the hospital removed to make way for hospital expansion during the 1950s, the Grove Shafter Freeway (State Route 24) was constructed immediately to the east in 1968, and an off-ramp to Grove (now Martin Luther King Jr. Way) was placed immediately south of the Research Center. Grove was widened in the 1960s, as well, and an elevated BART track was installed circa 1968.

The extensiveness of the alterations to the complex's overall form—the cumulative impact of the size, massing, form, and location of the additions—have compromised the A/B Wing (Baby Hospital)'s integrity of setting. Additionally, the hospital complex no longer retains a strong relationship to its residential neighborhood setting, which has also been greatly altered in the immediate area.

<u>Design</u>

When evaluated independently of its additions, the A/B Wing (Baby Hospital) retains a moderate degree of integrity of design as a hospital building from the 1920s. Most notably, the characteristics that are most intact include the narrow linear form, solariums, and double-loaded corridor and staircases. The building's Northern Italian Renaissance style is also intact, with details that include engaged columns and molded friezes at the solariums and a balcony and stair on the west façade that features paired pilasters and oversized supporting brackets. The exterior does feature some alterations that detract from the building's integrity of design. These include a circa 1948 third story addition at the east end of the south façade and a circa 1962 flat-roofed third-story addition at the northeast corner of the building. The arcaded entrance was replaced in 1962 with a new two-story projecting entrance that includes modern ribbon windows and a glass curtain wall storefront system at the ground floor. This entrance altered the spatial relationships of the original design, such as the emphasis on the projecting solarium. Other minor alterations that detract from the original design include metal awnings over some windows; contemporary walkways, ramps, and metal railings to approach the building; and metal security gates at the first floor patio and second floor balcony.

On the interior, the solariums now contain the hospital's board room and administrative offices. The original interior detailing of the hospital board room was stripped to modernize the interior and the solarium containing offices was filled with office cubicles. The ward, which also initially incorporated an open-plan design, was subdivided into offices by gypsum-board partition walls. Although the double-loaded corridor and staircases have been modernized and brought up to code, the A/B Wing (Baby Hospital) retains its overall interior circulation pattern. It is typical for alterations to be made to the interior of buildings such as hospitals in order to accommodate technological advances and modernization; therefore, the general form and organization of the interior is more important than its materiality.

In sum, the A/B Wing (Baby Hospital) retains a moderate level of integrity of design because it has been compromised in the above-mentioned ways. The large additions to the A/B Wing (Baby Hospital) are addressed under integrity of setting.

Materials

The exterior materiality of the A/B Wing (Baby Hospital) remains largely intact. The brick cladding and terra cotta ornamentation, including the balcony, as well as the original fenestration pattern and windows for most of the wing are extant. Both the brick and terra cotta are significant building materials because they were used in the early 20th century to fireproof buildings and deter the spread of infectious diseases such as tuberculosis. The biggest losses of original material have come with the various additions. For example, the addition of the new two-story entrance on the south façade in 1962 removed the arcaded entry portico, as well as the brick wall and five windows on the second floor. Some original material was also likely lost with the circa 1948 and circa 1962 additions to the northeast corner of the third floor, the 1948 addition of the B/C Wing, and the connection to the Ford Diagnostic and Treatment Center in 1962. In addition, there is one window opening on the second story of the west façade that was replaced with a flush wood door and brick infill, one infilled window at the first story of the east façade, three infilled windows on the north façade, a replacement door on the north façade, and numerous air conditioning units that have replaced panes of glass in the windows. The original clay tiles on the roof have been replaced with composite roofing.

On the interior, few original finishes remain. Drywall partitions have been erected throughout, as well as carpet tiles and drop ceilings with fluorescent lights.

In sum, the material integrity of the A/B Wing (Baby Hospital) remains in part on the exterior, but has been compromised on the interior. On the whole, the A/B Wing retains a moderate level of integrity of materials.

Workmanship

The A/B Wing (Baby Hospital) exhibits a high level of exterior decorative detail, which includes an Italian Bambino emblem. The figure appears as a medallion on the building's frieze. This detail, which was incorporated into the building's design to reflect the hospital's pediatric specialization, is representative both of the hospital's purpose and of the building's high level of craft. The building also displays workmanship in its fluted engaged columns at the solariums which display capitals with acanthus leaves, urns, fleur-de-lis, bambino heads, and griffins; molded, friezes depicting animal and bird motifs; and a terracotta circle-and-sheaf frieze below the second story roofline. Since these decorative details remain intact, the A/B Wing (Baby Hospital) retains integrity of workmanship.

Feeling

The A/B Wing (Baby Hospital)'s integrity of feeling has significantly changed because the building is no longer accessible to the general public. Only portions of its east façade are visible from public streets and the freeway. The building has been incorporated into a larger complex of structures. The wing is visible from the courtyard to the south of the building, but the massing and size of the numerous additions on its north and west sides, and the number of free-standing buildings and structures that have been added to the complex as a whole, have altered the feeling of the original scale of the hospital, which was comparable to the surrounding residential neighborhood. The hospital's transformation from a local hospital for children and teaching facility into a national research center in the 1950s and 1960s contributed to the loss of integrity of feeling of the A/B Wing (Baby Hospital). Ultimately, the building is able to convey a moderate level of integrity of feeling related to its aesthetic expression since the original design, materials, and workmanship remain in part and can convey the period of its construction. However, the historic sense of the primacy of this building has been compromised due to the numerous additions, shift in location of the public entrance, and other changes in setting. Overall, the building no longer retains integrity of feeling.

Association

The A/B Wing (Baby Hospital) has continuously operated as a hospital for children since its construction in 1926 and therefore retains its historic association.

Conclusion

In conclusion, the A/B Wing (Baby Hospital) is not eligible for individual listing in the California Register of Historical Resources.

B. B/C WING EVALUATION

The following section evaluates the B/C Wing for its eligibility for listing in the California Register of Historical Resources, including application of criteria of significance and evaluation of integrity (see pages 4-5 for evaluative criteria).

Criterion 1 (Events)

The B/C Wing does not appear to be individually significant under Criterion 1 of the California Register. Unlike the A/B Wing (Baby Hospital) of the Children's Hospital, which is significant as one of the first purpose-built hospitals for children in the East Bay during a period of significance from 1912-1926, the B/C Wing addition lacks the same distinction. By the time the B/C Wing was constructed, other hospitals had been established in Oakland, including Highland County Hospital, and in the vicinity. The B/C Wing is physically an integral piece of the hospital complex; however, the B/C Wing is not individually significant in association with any one or pattern of "events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States." The magnolia tree that is located directly east of the east façade of the B/C Wing can be similarly described: while the tree is an integral part of the hospital complex, planted by the original landowners and preserved through multiple building iterations at the lot, the tree is not significant for its association with any one or pattern of events. Although it has become associated with the Hospital, serving as inspiration for the Hospital's fundraising organization's name ("The Branches"), it was planted before the site was associated with the Hospital.

The B/C Wing was built during the post-war era in response to the war-time population explosion and the subsequent "baby boom." As with most cities in the region, there was a pressing need for expansion of institutions such as hospitals, schools, libraries, and other community services, as well as residential building stock and infrastructure. The B/C Wing was constructed to respond to the demand for more space and replaced the McElrath mansion, the Victorian-era home that initially housed the Children's Hospital. Though the B/C Wing was constructed to support the A/B Wing (Baby Hospital), it is not independently significant.

Criterion 2 (Persons)

The B/C Wing does not appear to be eligible for the California Register under Criterion 2. Research has failed to reveal a significant association with any individuals that would justify inclusion of the B/C Wing in the California Register under this criterion.

Criterion 3 (Architecture)

The B/C Wing does not appear to be eligible for the California Register under Criterion 3. Constructed in 1946 as an addition to the A/B Wing (Baby Hospital), the B/C Wing replaced the McElrath mansion, which housed the original Baby Hospital. The Wing was constructed to fulfill Stone and Mulloy's Master Plan, which depicted the expansion of the Hospital with the addition of three- and four-story wings. Although the B/C Wing is typical of the additions made to institutions such as hospitals, and continued elements of the design vocabulary and materiality of the A/B Wing (Baby Hospital), which embodies early 20th century hospital trends, the Wing is not a strong example of a "type, period, or method of construction" on its own. The B/C Wing was constructed in the mid-20th century, when the design of hospitals was in transition from low, linear forms with maximum sun exposure and open-plan patient wards to larger block forms with fewer but larger windows and private rooms. The plan is very similar to that of the A/B Wing (Baby Hospital), with a matching solarium to the west of the entrance and double-loaded corridors. Mirroring the A/B Wing (Baby Hospital), the B/C Wing originally contained offices, laboratories, and storerooms on the first floor and a patient ward on the second floor. On the exterior, the solarium features matching ornament, though it is capped with a flat roof, and the addition continues the terracotta circle-and-sheaf frieze below the second story roofline. However, on the whole, the exterior of the B/C Wing takes on a stripped modern style and is less ornamented than the A/B Wing (Baby Hospital). It also has a smaller solid-to-void ratio because it incorporates ribbons of large steel frame windows that are reminiscent of the European International Style of the earlier 20th century. On balance, the form and layout of the new wing reinterpreted the design of the A/B Wing (Baby Hospital) in a more modern way than it demonstrated advances in medical building design from its period of construction.

The firm of Stone and Mulloy designed the B/C Wing in 1945. Stone and Mulloy operated from 1927 until 1967 and specialized in hospital design. When Silvio P. Marraccini and S.P. Patterson joined the firm in 1951 and 1955, respectively, the name of the firm was lengthened to include the names of the new partners. The firm was quite prolific and completed work for the Vallejo General Hospital, the Marysville Hospital, the Pittsburg Community Hospital, and the Walter Reed Army Medical Center. Although the B/C Wing is representative of the type of projects on which the firm of Stone and Mulloy worked, the design largely reinterpreted the original A/B Wing (Baby Hospital). Other Stone and Mulloy hospital buildings serve as stronger examples of the firm's mid-century work.

Criterion 4 (Information Potential)

The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is for cases when the building itself is the principal source of important construction-related information. Based on historic research, Criterion 4 is not applicable to the B/C Wing.

B/C Wing Integrity

In addition to being determined eligible under at least one of the four California Register criteria, properties deemed to be significant must also retain sufficient historical integrity. Though the B/C Wing was not found to be individually significant under any California Register criteria and is therefore not eligible for listing, the following section evaluates the integrity of the B/C Wing for informational purposes.

The B/C Wing maintains integrity of location, workmanship, and association; a moderate degree of integrity of design and materials; and no longer retains integrity of setting or feeling from its period of construction. A detailed evaluation of the B/C Wing's integrity according to each aspect follows.

Location

The B/C Wing retains integrity of location. The building's location has not changed, though the hospital complex has expanded into the surrounding Temescal neighborhood.

Setting

When the B/C Wing was constructed, the hospital was still located at the center of a residential block and faced south onto 51st Street (street no longer extant). The main entry was located in the A/B Wing (Baby Hospital), immediately adjacent to the B/C Wing connection. This entrance was remodeled and continued to serve as the complex's primary entrance until the five-story Patient Tower was constructed north of the B/C Wing. The Patient Tower has an angled entrance, facing northwest onto Martin Luther King Jr. Way and 52nd Street, which supplanted the entrance at the courtyard as the primary entrance. A third-story addition was constructed on the east-west ell of the B/C Wing in 1958 and a first story addition to the east façade in 1987, as well as additions to the complex adjacent to the B/C Wing (including the West Site Plant (1979), Patient Tower (1982), and various office trailers to the south) have obscured the B/C Wing. From the main entrance at 52nd Street, the B/C Wing cannot be seen. The relocation of the primary entrance has altered the way in which the building is approached and significantly changed the visibility and understanding of the B/C Wing, which now reads as a secondary structure at the rear of the hospital complex.

The few remaining aspects of setting that remain intact are the B/C Wing's spatial relationship to the A/B Wing (Baby Hospital) across a courtyard, and its proximity to the mature magnolia tree that has been located on the site since circa 1860.

When the B/C Wing was constructed in 1946, it was designed to be consistent with the size and scale of the A/B Wing (Baby Hospital). The A/B Wing, in turn, was designed to maintain a scale that was compatible with the surrounding neighborhood, which consisted primarily of small, wood frame bungalows and cottages that were one to two stories tall. Later additions to the complex further altered its overall massing and size. The addition of the two-story, box-like Diagnostic and Treatment Center (1962) and its third story (1974), and the construction of the five-story Patient Tower served to overshadow the lower profile A/B and B/C Wings.

Furthermore, the setting of the residential neighborhood surrounding the hospital changed over time. Not only were residences to the south and north of the hospital removed to make way for hospital expansion during the 1950s, the Grove Shafter Freeway (State Route 24) was constructed immediately to the east in 1968, and an off-ramp to Grove (now Martin Luther King Jr. Way) was placed immediately south of the Research Center. Grove was widened in the 1960s, as well, and an elevated BART track was installed by 1972.

The extensiveness of the alterations to the complex's overall form—the cumulative impact of the size, massing, form, and location of the additions—have compromised the B/C Wing's integrity of setting. Additionally, the hospital complex no longer retains a strong relationship to its residential neighborhood setting, which has also seen major alterations since the B/C Wing was constructed.

Design

When evaluated independently of the A/B Wing (Baby Hospital) or major additions to the complex, the B/C Wing retains a moderate degree of integrity of design as a hospital addition from the early post-war era. Most notably, the characteristics that are most intact include the narrow linear form, solarium, and double-loaded corridor. The building's style, which reinterprets the Northern Italian Renaissance style of the A/B Wing, is also intact. This includes details such as engaged columns and molded friezes at the solarium. The exterior does feature alterations that detract from the building's integrity of design, including a 1958 addition of a third story to the west of the A/B Wing connection on the east-west ell. In 1987, the brick porch that mirrored the one on the A/B Wing was enclosed with an addition on the east facade. This addition features large steel-sash ribbon windows that differ in style from the original ribbon windows at the second floor, as well as a smooth metal frieze and triangular rain catchments with metal downspouts.

Although the double-loaded corridor and staircases have been modernized and brought up to code, the B/C Wing retains its overall interior circulation pattern. Other finishes have also been updated; however, it is typical for alterations to be made to the interior of buildings such as hospitals in order to accommodate technological advances and modernization.

In sum, the B/C Wing retains only a moderate level of integrity of design because it has been compromised in the above-mentioned ways. The large additions to the complex are addressed under integrity of setting.

Materials

The exterior materiality of the B/C Wing remains largely intact. The brick cladding and terra cotta ornamentation, as well as the original fenestration pattern and windows for most of the wing are extant. The biggest losses of original material have come with the additions. For example, the 1987 addition to the east façade removed the ground floor wall and window materials, and the addition of the West Site Plant (1979) and Patient Tower (1982) also likely removed materials. The rest of the B/C Wing appears intact, though some of the basement-level windows on the east façade have been infilled with metal plates and air conditioning units.

On the interior, most materials have been updated. Drywall partitions have been erected throughout, as well as carpeting or vinyl flooring and drop ceilings with fluorescent lights.

In sum, the material integrity of the B/C Wing remains in part on the exterior, but has been greatly compromised on the interior. On the whole, integrity of materials is moderate.

Workmanship

The B/C Wing exhibits some decorative detail that generally mimics the ornament of the A/B Wing (Baby Hospital). This includes the fluted engaged columns at the solarium which displays capitals with acanthus leaves, urns, fleur-de-lis, bambino heads, and griffins; molded, friezes depicting animal and bird motifs; and a terracotta circle-and-sheaf frieze below the second story roofline. Since these decorative details remain intact, the B/C Wing retains integrity of workmanship.

Feeling

The B/C Wing's integrity of feeling has significantly changed because it is no longer accessible to the general public. It is not visible from public streets, and the building has been incorporated into a larger complex of structures that are more modern in architectural style. The wing is visible from the courtyard to the south of the building, but the massing and size of the numerous additions on its north, west, and east sides, and the number of free-standing buildings and structures that have been added to the complex as a whole, have altered the feeling of the scale of the A/B and B/C Wings, which was comparable to the surrounding residential neighborhood. Ultimately, the building is able to convey a moderate level of integrity of feeling related to its aesthetic expression since the original design, materials, and workmanship remain in part and can convey the period of its construction. However, the historic sense of this building as half of a U-shaped complex has been compromised due to the numerous additions, the shift in location of the primary public entrance, and other changes in setting. Overall, the building no longer retains integrity of feeling.

Association

The B/C Wing has continuously operated as a hospital for children, in association with the A/B Wing (Baby Hospital), since its construction in 1946 and therefore retains its historic association.

Conclusion

In conclusion, the B/C Wing is not eligible for individual listing in the California Register of Historical Resources.

C. EVALUATION OF A/B WING AND B/C WING TOGETHER

The California Register of Historical Resources

Criterion 1 (Events)
The individual resource evaluations for the A/B Wing and the B/C Wing have described how the A/B Wing possesses individual significance and the B/C Wing does not. The A/B Wing is significant for its contributions as a forerunner in children's hospitals and teaching facilities in Oakland, as well as for its architectural design. The period of significance for the A/B Wing as an individual resource is 1912-1926 for Criterion 1 (Events) and 1926 for Criterion 3 (Architecture). The B/C Wing was not associated with any particular events which would make it significant on its own

Criterion 2 (Persons)
The A/B Wing and B/C Wing do not appear to be eligible for the California Register under Criterion 2. Research has failed to reveal a significant association with any individuals that would justify inclusion of the two wings together in the California Register under this criterion.

Criterion 3 (Architecture)

When considered together as one entity, the two wings created a unified U-shaped plan and design. As described in the California Register evaluation for the B/C Wing as an individual resource, the building was constructed to fulfill Stone and Mulloy's Master Plan, which depicted the expansion of the Hospital with the addition of three- and four-story wings in a modern interpretation of the Northern Italian Renaissance style. The B/C Wing was designed as a compatible yet modern response to the design of the A/B Wing. It continued elements of the design of the A/B Wing with respect to the form, materials, scale, massing, and size. It featured a matching solarium to the west of the entrance and double-loaded corridors. Mirroring the A/B Wing, the B/C Wing originally contained offices, laboratories, and storerooms on the first floor and a patient ward on the second floor. On the exterior, the solarium featured matching ornament, though it was capped with a flat roof, and the addition continued the terracotta circle-and-sheaf frieze below the second story roofline. Because the form and layout of the new wing reflected the design of the A/B Wing more than it demonstrated advances in medical building design from its period of construction, the B/C Wing was not found individually significant for any innovation in design. However, within the context of compatible design within a master plan, the A/B Wing and B/C Wing together represent the initial vision of hospital expansion and are significant for their design within a period of significance of 1926-1948.

Therefore, evaluating the two wings together as one building results in a finding of individual significance under Criterion 3 (Architecture).

A/B Wing and B/C Wing Integrity
However, neither wing possesses sufficient integrity to represent their significance. Both have sustained alterations and additions to the wings themselves, as well as larger additions to the hospital complex. The overall setting, in terms of the hospital complex setting and the immediate neighborhood surrounding the hospital, has also been compromised.

Conclusion

In conclusion, though the two wings were found to be historically significant together under Criterion 3, they are not eligible for listing in the California Register due to lack of integrity.

D. THE BRUCE LYON MEMORIAL RESEARCH CENTER EVALUATION

The following section evaluates the Bruce Lyon Memorial Research Center for its eligibility for listing in the California Register of Historical Resources, including an evaluation of integrity (see pages 4-5 for evaluative criteria).

Criterion 1 (Events)

The Bruce Lyon Memorial Research Center does not appear to be eligible for the California Register under Criterion 1. Constructed in 1959, the Research Center building originally housed the Bruce Lyon Memorial Research Laboratory. In 1973, the Northern California Comprehensive Sickle Cell Center was established at the Research Center. Renamed the Children's Hospital Oakland Research Institute (CHORI) in 1986, it was the first research laboratory in Northern California dedicated exclusively to children's diseases. As CHORI, the Research Center achieved notable successes with cord blood bone marrow transplants and was the first North American research institute to cure a child with alpha thalassemia major through transplants; however, this event occurred after CHORI had moved out of the Research Center building in 1999. Most of CHORI's work at the Research Center occurred in recent decades (less than 50 years ago) and some of their greater medical successes occurred after the organization had vacated the Research Center. Therefore, the Bruce Lyon Memorial Research Center does not appear eligible under Criterion 1.

Criterion 2 (Persons)

The Bruce Lyon Memorial Research Center does not appear to be eligible for the California Register under Criterion 2. Although prominent persons have been associated with CHORI, research has failed to reveal a significant association that would justify the building's inclusion in the California Register under this criterion.

Criterion 3 (Architecture)

The Bruce Lyon Memorial Research Center does not appear to be eligible for the California Register under Criterion 3. The original one-story building features brick trim in stacked courses and curtain wall systems comprised of metal panels and fixed and awning sash windows. Though it uses mid-century materials and design vocabulary, it is not a distinguishable design and does not appear significant for its architecture. It does not display high artistic values, either. Furthermore, the building sustained the major addition of a second floor in 1972, which dwarfs the original building, as well as a rear addition in 1992.

The architecture firm of Stone, Marraccini and Patterson are responsible for the design of the Bruce Lyon Memorial Research Center. They also designed the Ford Diagnostic and Treatment Center (1962) at the Children's Hospital, as well as numerous other hospital and medical buildings through the 1970s and 1980s. Though they were prolific in the design of this property type, the Bruce Lyon Memorial Research Center is a rather simple example of a medical building and compared to this building, there are likely better examples (with higher integrity) from their portfolio of work. Therefore, the Bruce Lyon Memorial Research Center is not significant in association with this architecture firm.

Criterion 4 (Information Potential)
The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is for cases when the building itself is the principal source of important construction-related information. Based on historic research, Criterion 4 is not applicable to the Bruce Lyon Memorial Research Center.

Conclusion
The Bruce Lyon Memorial Research Center does not qualify as a historical resource under CEQA, since it is not significant under any California Register criteria and therefore not eligible for listing in the California Register.

Bruce Lyon Memorial Research Center Integrity
In addition to being determined eligible under at least one of the four California Register criteria, properties deemed to be significant must also retain sufficient historical integrity. Though the Bruce Lyon Memorial Research Center was not found to be individually significant under any California Register criteria and is therefore not eligible for listing, the following section evaluates the integrity of the Research Center for informational purposes.

The Bruce Lyon Memorial Research Center maintains integrity of location, materials, and workmanship; a moderate degree of integrity of association; and no longer retains integrity of setting, design, or feeling from its period of construction. A detailed evaluation of the Research Center's integrity according to each aspect follows.

Location
The location of the Bruce Lyon Memorial Research Center has not changed. The hospital complex has expanded into the surrounding Temescal neighborhood, but the Research Center remains in its original location at the south end of the complex.

Setting
When the Research Center was constructed in 1959, the hospital was still located at the center of a residential block and faced south onto 51st Street (street no longer extant). Numerous houses were removed between 1951 and 1959 that faced Dover to the east, 51st Street to the north, and Grove (now Martin Luther King Jr. Way) to the west. The Research Center was constructed at the south end of the cleared site, surrounding by paved surface parking lots. The surrounding parking lots have also been built on, obscuring the Research Center's view and connection to the main hospital building. For example, the helistop and portable buildings were constructed north of the Research Center, and other portable offices were installed to the east. An addition was also constructed immediately south of the Research Center in 1992.

In the surrounding neighborhood, the Grove Shafter Freeway (State Route 24) was completed in 1968, and an off-ramp to Grove was placed immediately south of the Research Center. Grove was widened in the 1960s, as well, and an elevated BART track was installed by 1972. The original entrance to the building was on the west side adjacent to Grove Street, but the site has since been fenced off from the street and the entrance was shifted to the east side of the building.

The extensiveness of the alterations to the complex's overall form—the cumulative impact of additions and portable buildings—have compromised the Bruce Lyon Memorial Research Center's integrity of setting. Additionally, the building no longer retains a strong relationship to the neighborhood setting, which has been greatly altered since the building was constructed.

Design

Characteristics of the original building that are most intact include its curtain walls comprised of metal panels and fixed and awning sash windows. However, this mid-century design is greatly overshadowed by the large second-story addition that was constructed in 1972. The stuccoed addition is supported by concrete posts, rests on top of the original building, and projects in volume at all facades beyond the footprint of the original building. The building's original primary entrance is set in an enclosed glazed portico located on the west side of the building. However, this entrance is no longer in use, and the contemporary primary entrance is located on the east façade at the northeast corner of the building. Thus, the building's original orientation and interior circulation has been altered. Another addition was also constructed in 1992 at the rear of the building, further obscuring its original size and low-slung massing, and detracting from its design.

In sum, the Research Center does not retain integrity of design because the original design, scale, and massing has been so overshadowed on all sides by the building's additions.

Materials

The exterior materiality of the original 1959 building remains largely intact. The brick coursing and steel frame wall system with metal panels and windows has been retained. The two additions sit on the original building's roof and to the south, but their placement did not remove material from the original facades. Thus, the Bruce Lyon Memorial Research Center retains integrity of materials.

Workmanship

The Research Center exhibits little in the way of decorative elements or ornament. Most of the materials are mass-produced and applied as assemblies. However, since the original building's materials remain largely intact, integrity of workmanship is retained.

Feeling

The Bruce Lyon Memorial Research Center's integrity of feeling has changed due to its large additions and the changes that have occurred in the larger complex. The building is no longer isolated at the south end of the hospital site and surrounded by surface parking; rather, it is now enclosed by the helistop, portable offices, and additions on the roof and to the south. In addition to changes in surrounding spatial relationships, the 1972 and 1992 additions have obscured the building's original massing and height. Consequently, integrity of feeling related to its aesthetic expression is impacted since the original design, has been overshadowed and does not clearly convey the period of its construction. The historic sense of this building as a medical building designed in

1959 has been compromised due to the above-referenced changes. Overall, the building no longer retains integrity of feeling.

Association

The Bruce Lyon Memorial Research Center has continuously operated as a medical laboratory within the Children's Hospital complex. However, it is no longer associated with the Children's Hospital Oakland Research Institute (CHORI). Therefore, it retains a moderate level of integrity related to association.

Conclusion

In conclusion, the Bruce Lyon Memorial Research Center is not eligible for individual listing in the California Register of Historical Resources.

E. THE FORD RESEARCH AND DIAGNOSTIC CENTER EVALUATION

The following section evaluates the Ford Research and Diagnostic Center for its eligibility for listing in the California Register of Historical Resources. It then evaluates the integrity of the Ford Research and Diagnostic Center (see pages 4-5 for evaluative criteria).

Criterion 1 (Events)

The Ford Research and Diagnostic Center does not appear to be eligible for the California Register under Criterion 1. The building was constructed in 1962 in part with a $450,000 endowment from William H. and Helen C. Ford. The building was constructed for the purpose of expanding ambulatory outpatient services, laboratory uses, and x-ray facilities. While these uses have been important for the functionality of the hospital, they do not appear to have been significant at a level that would qualify the building for listing in the California Register under this criterion.

Criterion 2 (Persons)

The Ford Research and Diagnostic Center does not appear eligible for the California Register under Criterion 2. Although prominent people have been associated with research at Children's Hospital, research has failed to reveal a significant association that would justify the building's inclusion in the California Register under this criterion.

Criterion 3 (Architecture)

The Ford Research and Diagnostic Center does not appear to be eligible for the California Register under Criterion 3. The original two story building includes ribbon windows, full-height glass entry bay, an asymmetrical primary façade, and an emphasis on horizontal planes with minimal ornamentation. Though it uses International style design elements and typical materials from that design era, it is not a distinguishable design and does not appear significant for its architecture. It does not display high artistic values, either. Furthermore, the building sustained a third story addition in 1974 that diminished its original design.

The architecture firm of Stone, Marraccini and Patterson are responsible for the design of the Ford Research and Diagnostic Center. They also designed the Bruce Lyon Memorial Research Center (1958) at the Children's Hospital, as well as numerous other hospital and medical buildings through the 1970s and 1980s. Though they were prolific in the design of this property type, the Ford Research and Diagnostic Center is a rather simple example of a medical building and compared to this building, there are likely better examples (with higher integrity) from their portfolio of work. Therefore, the Ford Research and Diagnostic Center is not significant in association with this architecture firm.

Criterion 4 (Information Potential)

The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is for cases when the building itself is the principal source of important construction-related information. Based on historic research, Criterion 4 is not applicable to the Ford Research and Diagnostic Center.

Conclusion

According to CEQA, the Ford Research and Diagnostic Center does not qualify as a historic resource since it is not significant under any California Register criterion and therefore is not eligible for listing in the California Register.

Ford Research and Diagnostic Center Integrity

The following section will evaluate the integrity of the Ford Research and Diagnostic Center. Evaluative criteria are described in detail on pages 4-5 of this report.

The Ford Research and Diagnostic Center maintains integrity of location, materials, and workmanship; a moderate degree of integrity of association; and no longer retains integrity of setting, design, or feeling from its period of construction. A detailed evaluation of the building's integrity according to each aspect follows.

Location

The location of the Ford Research and Diagnostic Center has not changed. The hospital complex has expanded into the surrounding Temescal neighborhood, but the Ford Research and Diagnostic Center remains in its original location at the north east corner of the complex.

Setting

When the Ford Research and Diagnostic Center was constructed in 1962, it was the third addition to the Children's Hospital site (after the B/C Wing and the Bruce Lyon Memorial Research Center) and was visible from three facades (east, north, and west). It replaced several small scale residential buildings at the north east corner of the Hospital's site and faced onto a residential section of Dover Street. The construction of the Grove Shafter Freeway in 1968 directly to the east of the building, and the resulting cessation of Dover Street as a through-street south of 52nd Street changed the setting of the Ford Research and Diagnostic Center, making it less visually accessible to the surrounding neighborhood. The construction in 1982 of the Patient Tower further removed the Ford Research and Diagnostic Center from public view; after this date only the north façade was readily visible to the public, and the entrance and the former primary (east) façade was switched to an emergency exit. The 1993 addition of the Cardiac Catheterization Lab further altered the setting of the Ford Research and Diagnostic Center, blocking visual access to the southern façade.

The extensive alterations to the complex's overall form have compromised the Ford Research and Diagnostic Center's integrity of setting. Additionally, the building no longer retains a strong relationship to the neighborhood setting, which has been greatly altered since the building was constructed.

Design

When evaluated independently of its addition, the Ford Research and Diagnostic Center generally retains integrity of its International-style design, including ribbon windows, full-height glass entry bay, an asymmetrical primary façade, and an emphasis on horizontal planes with minimal ornamentation. However, the integrity of many of these design elements has been compromised by changes to the building and the site. The addition of the Patient Tower in 1982 necessitated the alteration of the westernmost bay of the north façade of the Ford Research and Diagnostic Center. The primary entrance of the Ford Research and Diagnostic Center was also shifted at this time: access to the building is gained from inside the Patient Tower, and the original primary entrance is now an emergency exit. The 1974 addition of a third story also compromised the original building's emphasis on horizontal planes and changes the massing of massing and scale of the building. In sum, the Ford Research and Diagnostic Center has diminished integrity of design due to alterations to the building and additions to the Hospital site.

Materials
The exterior materiality of the original 1962 building remains largely intact, including ribbon windows, metal spandrel panels and window sashes, and stucco cladding. Certain areas of the building's north façade were changed to accommodate the addition of the Patient Tower. The addition of the third story in 1974 did not remove materials from the original facades. Therefore the building retains integrity of materials.

Workmanship
The Ford Research and Diagnostic Center displays little in the way of decorative elements or ornament. Most of the materials are mass produced and applied as assemblies. However, since the building's original materials remain largely intact, the building retains integrity of workmanship.

Feeling
The Ford Research and Diagnostic Center's integrity of feeling has changed due to additions at the Hospital site and changes to the surrounding neighborhood. The Ford Research and Diagnostic Center was, at the time of its construction, the Hospital building with the strongest street presence; it was the only hospital building with an entrance located along a public street, it had facades facing both 53rd Street and Dover Street, and the west façade was next to a surface parking lot and was visible from 53rd Street and Grove Street. The construction of the Grove Shafter Freeway in 1968 changed this relation to the neighborhood, and the construction of the Patient Tower in 1982 changed it even further. The feeling of the actual building changed with the addition of a third story in 1974 and the cessation of the use of the entrance at the east façade as the primary entrance. Dover Street stopped being used as a through street south of 52nd Street, as well, further changing the feeling of the Ford Research and Diagnostic Center. In sum, changes to the building and to the building's surroundings have severely lowered the building's integrity of feeling.

Association
The Ford Research and Diagnostic Center has continuously been used as a medical laboratory within the Children's Hospital complex. Its original use as a space for ambulatory outpatient care has been shifted to the Outpatient Center, constructed north of 52nd Street in 1993. Therefore, the Ford Research and Diagnostic Center retains a moderate level of integrity of association.

Conclusion
In conclusion, the Ford Research and Diagnostic Center is not eligible for individual listing in the California Register of Historical Resources.

F. EVALUATION OF MAGNOLIA TREE

The magnolia tree does possess a level of significance as the remaining extant tie to the McElrath mansion which housed the original Baby Hospital. However, this association does not raise the tree to a level of significance that it would be eligible for listing as an individual resource in the California Register. In addition, it was planted well before the Hospital was conceived, not in direct relationship to the Hospital's development, and has no association with reasons for which the hospital is significant. It does not appear that the tree was planted as part of a broader landscape design. Furthermore, its setting has completely changed from the era of its planting. Therefore, it does not qualify as a historic resource (landscape object).

G. EVALUATION OF OTHER BUILDINGS ON THE MAIN HOSPITAL SITE

The other buildings in the hospital complex were not evaluated for listing in the California Register or for listing as a City of Oakland Designated Historic Property, as they are less than forty-five years old and do not possess a level of significance that would qualify them for listing despite their more recent construction dates. These buildings include the Central Plant/West Site Plant (1979), Patient Tower (1982), Cafeteria (1987), Outpatient Center (1993), Parking Garage (1993), Cardiac Catheterization Lab (1993), Bruce Lyon Memorial Center Addition (1992) and the Helistop (2000).

H. EVALUATION OF THE HOSPITAL COMPLEX AS A HISTORIC DISTRICT

Historic districts are made up of components which are significant only when grouped together, rather than collections of individually significant buildings. Districts must work together to tell the story of their significance and must have distinguishable boundaries. Typically, while working toward understanding the historic context and significance of an area, historic districts become apparent. Boundaries of a historic district are frequently defined by use, connection to an event, or architectural style. Historic districts will include both contributors and non-contributors, and not all resources need to be of the same historical or architectural quality. The district functions as a group, and includes both contextual buildings and the stand-outs which help anchor a district.

Eligibility for listing for historic districts in the California Register, just as for individual resources, is based on two factors: Criteria and Integrity. Criteria are a means of evaluating a resource's historical significance. In addition to embodying one or more of the necessary criteria, it is also imperative that the district have sufficient integrity. In the case of historic resources, integrity is defined as the physical characteristics which must be maintained in order to allow a resource to convey its historical significance.

Based on the evaluation below, the study area of the Children's Hospital and Research Center (which does not include the CHORI site) does not possess sufficient significance or integrity as a whole to be eligible as a historic district in the California Register.

Criterion 1 (Events)

The Children's Hospital and Research Center does not possess significance as a whole to be eligible as a historic district in the California Register under Criterion 1. The property is primarily significant for its early contributions to children's healthcare and as a teaching hospital in the early 20th century. It is also associated with important research conducted at the Children's Hospital Oakland Research Institute (CHORI). However, the complex as a whole is not associated with CHORI or its research contributions. And while the magnolia tree adjacent to the B/C Wing has some association with the Hospital, specifically the fundraising organization that supports the Hospital ("The Branches"), it was not planted in relation to the Hospital and as such is primarily associated with a much earlier era outside of the Hospital site's general period of development. The Hospital complex grew over many years, and most of the recent buildings do not contribute directly to associations with any particular events. Thus, the period of significance under Criterion 1 remains primarily associated with the earliest years (1912-1926), which are represented only by the A/B Wing.

Criterion 2 (Persons)
The Children's Hospital and Research Center does not appear to be eligible for the California Register as a historic district under Criterion 2. Although prominent persons have been associated with the hospital and CHORI, research has failed to reveal a significant association that would justify the entire complex's inclusion in the California Register as a historic district in association with any particular person.

Criterion 3 (Architecture)
The Children's Hospital and Research Center complex is also not significant under California Register Criterion 3 because the various buildings were constructed in different decades and in a variety of architectural styles. Aside from the B/C Wing, which was designed in the vocabulary of the original A/B Wing, the other buildings do not attempt to be stylistically or materially compatible with the early buildings. Each was designed in a style popular during its years of construction. Further, the additions were generally constructed in an ad-hoc fashion, without following a design master plan and without any unifying architectural theme. As a result, the main hospital building is a large mass comprised of many additions. Construction dates on the site range from 1926 to 1993, and the complex as a whole does not represent a particular type, period, or method of construction or represent high artistic values. Different architecture firms were involved in the designs of each section and the complex as a whole is not associated with any one firm to the extent that it would be considered historically significant in association. Thus, there is no period of significance associated with architecture beyond construction of the A/B and B/C Wings from 1926-1948.

Criterion 4 (Information Potential)
The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to built resources, it is for cases when the building itself is the principal source of important construction-related information. Based on historic research, Criterion 4 is not applicable to the Children's Hospital and Research Center as a historic district.

Conclusion

According to CEQA, the Children's Hospital and Research Center does not qualify as a historical resource, since it is not significant under any California Register criteria and therefore not eligible for listing in the California Register.

Children's Hospital and Research Center Integrity

In addition to being determined eligible under at least one of the four California Register criteria, a historic district deemed to be significant must also retain sufficient historical integrity. Though the Children's Hospital and Research Center was not found to be significant as a historic district under any California Register criteria and is therefore not eligible for listing, the following section evaluates the integrity of the complex for informational purposes.

Integrity for historic districts is largely a factor of the ratio of contributing resources to non-contributing resources. Determining which properties are contributing versus non-contributing depends on whether they are associated with the historic district's reason for significance; whether they were constructed or existed during the period of significance; and whether they each retain sufficient integrity as individual buildings to represent that period and reason for significance. Typically, a two-thirds majority of contributing resources is desired, though at least half of the resources should be contributors. This is important so that the historic district can convey its significance.

The Children's Hospital complex contains 12 permanent stand-alone buildings and large additions, as well as several semi-permanent portable buildings. All but four are under 45 years of age and would therefore not be considered historic resources individually. Their dates of construction are too recent to be able to understand their context with sufficient historical perspective, and were constructed outside a potential period of significance. Three of the four age-eligible resources are not individually significant, and none of them retain integrity. Only the A/B Wing was constructed within the period of significance. Therefore, the Children's Hospital complex would not be eligible as a historic district because it does not possess any contributors.

VII. EVALUATION OF CHILDREN'S HOSPITAL FOR ELIGIBILITY AS A CITY OF OAKLAND DESIGNATED HISTORIC PROPERTY

This section of the report will evaluate the four buildings at the Children's Hospital site that are more than 45 years old. Evaluative criteria for these evaluations are included in Appendix D of the Historic Preservation Element of the Oakland General Plan and have been described briefly on pages 8-9 of this report. [174] The full excerpted Appendix D is located in the Appendix of this report for reference.

In order to determine whether a property is eligible as a landmark, the property is rated on an Evaluation Sheet for each of fourteen evaluation criteria.[175] The ratings are then converted to numerical scores and added together for a total score, which is then converted into an overall rating—A, B, C, or D. Buildings of no interest are given E ratings and buildings that are too recent to rate are giving a rating of F (synonymous with the use of *). A property that has been altered or that is less than fifty years old may also have a contingency rating shown by a lowercase letter, indicating that the property may be eligible for a higher rating in the future. Buildings also receive a numerical rating indicating their association with a district: 1 indicates the building is in an Area of Primary Importance (API), 2 indicates that the building is in an Area of Secondary Importance (ASI), and 3 indicates that the building is not associated with a district. A "+" indicates that a building is a contributor to the district, a "-" indicates that it is not a contributor, and a "*" indicates that it is a potential contributor.

A. A/B WING (BABY HOSPITAL)

The Oakland Cultural Heritage Survey assigned the A/B Wing (Baby Hospital) a preliminary rating of "Cb3" based on a reconnaissance survey and cursory research. This rating means that the building has secondary importance, but with more information could be elevated to a rating of "B," which would signify that the building is of major importance. The "3" rating indicates that the Baby Hospital is not located within a historic district. In the particular case of the Baby Hospital, the dual rating reflects uncertainty about the degree to which the historical and architectural integrity of the building has been affected by additions and alterations.

A brief explanation of the evaluation, including each of the fourteen evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent **(E)**, Very Good (VG), Good (G), and Fair/Poor (FP).

A. Architecture

1. Exterior/Design

The A/B Wing (Baby Hospital) has very good (VG) quality of form, detailing and overall visual quality. The building was designed in the Northern Italian Renaissance style, and includes the low

[174] City of Oakland, Oakland General Plan, Historic Preservation Element, Sept. 1993.

[175] Both the OCHS and the Landmarks Preservation Advisory Board (LPAB) criteria and evaluations determine eligibility for Oakland's Local Register. Using either would determine if a building, structure, object, or site is eligible for the Local Register. The OCHS criteria are based on the National and California Register criteria, which has already been analyzed in the Historic Resource Evaluation. Therefore, using the LPAB criteria gives an alternate evaluation, making the analysis more comprehensive in determining which properties warrant preservation.

pitched tile roofs, rhythmic fenestration pattern, first and second story porches and balconies, chimney with arcaded cap, two solarium bays, terra cotta cornice, and ornamental detailing of that style. Ornamental detail includes floral and acanthus-leaf motifs, urns, fleur-de-lis, cherub's heads, and griffins.

2. Interior

The space is largely reconfigured due to evolving use needs, but some original details remain in place. However, in the City of Oakland's evaluation process, ratings are only provided for interiors of public buildings, and the A/B Wing (Baby Hospital) is not a public building. Therefore, the interior of the A/B Wing (Baby Hospital) does not receive a rating.

3. Construction

Construction is good (G). The A/B Wing (Baby Hospital) is a reinforced concrete building clad in pressed brick, a construction type which reflects its era of construction as well as the programmatic needs of the hospital (1926). Construction materials also include terra cotta, roof tiles, and multi-paned large solarium windows.

4. Designer/Builder

Designer/Builder rating is good (G), indicating that Edward W. Cannon is a designer of tertiary importance. Cannon built a handful of buildings in Oakland and the Bay Area, most notable of which is the six-story addition to Kahn's Department Store, which is listed on the National Register. However, he was not an especially active designer and his contributions do not elevate him to the level of primary or secondary importance.

5. Style/Type

Style/Type is very good (VG), as the design of the A/B Wing (Baby Hospital) embodies many early 20th century hospital design trends. The building is narrow and linear in form and is clad in brick and terra cotta to fireproof the structure and prevent the spread of contagious disease. Oriented to the south to maximize its exposure to sunlight, the building includes solariums and a high number of windows to ensure light and airflow. The floor plan also contains a large open-plan ward to allow nurses to maintain surveillance of the maximum number of patients at one time. The building is also a very good example of the Northern Italian Renaissance style.

B. History/Association

6. Person/Organization

The A/B Wing (Baby Hospital)'s association with a Person/Organization is very good (VG). The A/B Wing (Baby Hospital) is the oldest extant building associated with the establishment of the Baby Hospital, the first children's hospital in the East Bay. The site is intimately connected to a benevolent organization that played a major role in the development of improving the health of the community of Oakland, and has remained in operation in this use since its construction.

7. Event

Although the site of ongoing important personal-level events, no specific significant event was found to have happened at the A/B Wing (Baby Hospital), and therefore receives a rating of FP (no connections with event of importance).

8. Patterns

The A/B Wing (Baby Hospital) effectively illustrates a broad pattern of Oakland history, namely the establishment of care for the city's children. The site is intimately connected to a pattern of secondary importance, and as such qualifies for a rating of very good (VG).

9. Age

The A/B Wing (Baby Hospital) was constructed in 1926 to house an organization that had been established in 1912 and housed originally in a Queen Anne residential building. Both the extant building and the Baby Hospital organization date from the era between May 1906 and 1945, which qualifies it for a rating of good (G).

10. Site

The A/B Wing (Baby Hospital) is located on the site on which it was constructed and therefore receives a rating of excellent (E).

C. Context

11. Continuity

The A/B Wing (Baby Hospital) receives an FP rating for continuity because the building is not located in an Area of Primary Importance (API) or an Area of Secondary Importance (ASI).

12. Familiarity

The A/B Wing (Baby Hospital) receives G/FP rating for familiarity. The associated numerical score is an average between G and F (see Appendix). The additions to the A/B Wing, as well as the addition of other hospital buildings directly adjacent to the A/B Wing, have largely obscured it from public view within the neighborhood. In addition, connection between the A/B Wing and the surrounding neighborhood has been weakened by the construction of the elevated Grove-Shafter Freeway (State Route 24) and adjacent on-ramp, the closure of 51st Street, and the closure of Dover Street south of 52nd Street to public access. The east façade of the A/B Wing (Baby Hospital) is visible from the elevated Grove-Shafter Freeway, so the building is marginally conspicuous or familiar within the neighborhood, city, and region.

D. Integrity

Ratings in this category are Excellent **(E)**, Good (G), Fair (F), and Poor (P).

13. Condition

The A/B Wing (Baby Hospital) receives a good (G) rating for condition, which is a measure of surface wear or structural problems to the building. The building exhibits only minor deterioration of this sort.

14. Exterior and Alterations

The A/B Wing (Baby Hospital) has undergone a series of alterations which brings its rating in this category to good (G)/Fair (F). The associated numerical score is an average between G and F (see Appendix). The addition in 1946 of the B/C Wing expanded the A/B Wing (Baby Hospital) from its original L-shaped design into a new U-shaped configuration to accommodate the second phase of Douglas Stone's master plan. However, only the B/C Wing was constructed per the master plan and even this wing, though similar, was not constructed exactly as originally proposed. The additions ca. 1948 and ca. 1962 to the third story at the northeast corner of the building and the removal in 1962 of the original colonnade porch at the southwest portion of the building and replacement with a two-story entrance lobby changed the scale of the building again as well as its primary point of entry. In addition, other alterations have occurred over time, including metal awnings over some windows; contemporary walkways, ramps, and metal railings to approach the building; stairs at the southwest corner leading to the west porch; metal security gates at the first floor patio and second floor balcony; solid infill of window and door openings; air conditioning units in place of glass panes in the windows; and composite roofing. However, these alterations are relatively minor and a majority of materials on those facades remain intact.

Conclusion

Page & Turnbull's intensive survey and evaluation assigns the A/B Wing (Baby Hospital) a rating of "B3," signifying that the building is of secondary importance, not located in a district or area of importance.

B. THE B/C WING

The Oakland Cultural Heritage Survey has not assigned the B/C Wing a preliminary rating. A brief explanation of the evaluation, including each of the fourteen evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent (E), Very Good (VG), Good (G), and Fair/Poor (FP).

A. Architecture

1. Exterior/Design

The B/C Wing has good (G) quality of form and detailing, with good overall visual quality. The form of the building was designed to match that of the A/B Wing (Baby Hospital), and the footprint is the inverse of the A/B Wing (Baby Hospital). It is a modern compatible addition with respect to form, materials, scale, massing, and size. Overall detailing replicates the ornament on the A/B Wing (Baby Hospital) and new detailing is simplified. However, the design is not distinguished individually within its era of construction (1946-1948).

2. Interior

The interior of the B/C Wing was not surveyed for this report; it includes intensive care areas of the hospital and was not available for survey. Furthermore, in the City of Oakland's evaluation process, ratings are only provided for interiors of public buildings, and the B/C Wing is not a public building. Therefore, the interior of the B/C Wing does not receive a rating.

3. Construction

The B/C Wing receives a good (G) rating for construction. It is a steel reinforced concrete building with pressed brick cladding, characteristic of its era of construction.

4. Designer/Builder

Designer/Builder is good (VG). The B/C Wing was constructed by the firm of Stone and Mulloy, which became known for their hospital designs and designed approximately 20 hospitals and medical buildings in Northern California in the post-war era, including Peralta Hospital in Oakland (1950), Eden Hospital in Castro Valley (1954), and Pacific Presbyterian Medical Center in San Francisco (1960). The firm changed names and partners over the years but continued to specialize in hospital design and designed at least two additional buildings at Children's Hospital. Thus, the B/C Wing is associated with this firm of secondary importance in the region.

5. Style/Type

The B/C Wing receives a rating of good (G) for style/type criterion. The building is a good example of simplified modern architectural style that reinterprets the A/B Wing (Baby Hospital). However, the building was constructed in form to match the older A/B Wing (Baby Hospital), and as such it is not a very good or excellent example of hospital design during its era of construction, during which the "Nightingale ward" design seen at the A/B Wing (Baby Hospital) was being replaced with the block plan in response to changing interior spatial needs.

B. History/Association

6. Person/Organization

The B/C Wing receives a rating of good (G) for this criterion, as it was constructed to house the expanding needs of Children's Hospital after the hospital's primary period of significance. As such, it can be considered intimately connected to an organization of tertiary importance (prominent but not leading role) to the City's development.

7. Event

Research has uncovered no specific significant events that took place at the B/C Wing. Thus, the building receives a FP rating for this criterion.

8. Patterns

The B/C Wing receives a good (G) rating for this criterion. The B/C Wing was built to provide continued care for Oakland's growing population after World War II. However, this population surge had an effect on the city's entire civic infrastructure, not specifically hospitals. The population increase could be considered a pattern of tertiary importance, garnering the B/C Wing a rating of good for this criterion.

9. Age

The building was constructed in 1946-1948 and as such receives an FP rating for this criterion.

10. Site

The building has not been moved and as such receives a rating of excellent (E) for this criterion.

C. Context

11. Continuity

The B/C Wing is not located in an API or ASI, and therefore receives an FP rating for this criterion.

12. Familiarity

The B/C Wing receives an FP rating for this criterion, due to the way changes in the area have largely removed the B/C Wing from public view. It is no longer conspicuous or familiar within its surrounding context. The construction of the Ford Research and Diagnostic Center in 1962, the construction of the Grove/Shafter Freeway (State Route 24) in 1968, the closure of 51st Street, the closure of public access to Dover Street south of 52nd Street, the construction of the West Site Plant in 1979, and the construction of the Patient Tower in 1982 have combined to severely alter and limit the B/C Wing's familiarity within the neighborhood.

D. Integrity

Ratings in this category are Excellent (E), Good (G), Fair (F), and Poor (P).

13. Condition

The B/C Wing receives a good (G) rating for condition, which is a measure of surface wear or structural problems to the building. The building exhibits only minor deterioration of this sort.

14. Exterior and Alterations

The B/C Wing has undergone a series of alterations which lower its rating in this category to fair (F). A third story addition at the northern part of the building in 1958 altered the scale of the building. The construction of the West Site Plant in 1979 directly abutting the building changed the western façade and required the blinding and the alteration of several window groups. The construction of the Patient Tower in 1982 directly abutting the building completely obscured the building's original north façade. The enclosure of the porch at the first story of the east façade in 1987 continued to alter the building's original design and also impaired its stylistic relationship with the A/B Wing (Baby Hospital), which retains its original first story porch.

Conclusion

Page & Turnbull's intensive survey and evaluation assigns the B/C Wing a rating of **C3**, signifying that the building is of secondary importance, not located in a district or area of importance.

C. THE A/B WING AND B/C WING TOGETHER

The Oakland Cultural Heritage Survey did not assign the A/B Wing and B/C Wing together a preliminary rating based on a Reconnaissance Survey. A brief explanation of the evaluation, including each of the fourteen evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent **(E)**, Very Good (VG), Good (G), and Fair/Poor (FP).

A. Architecture

1. Exterior/Design

The A/B and B/C Wings together have very good (VG) quality of form and detailing. The A/B Wing was designed in the Northern Italian Renaissance style, and includes the low pitched tile roofs, rhythmic fenestration pattern, first and second story porches and balconies, chimney with arcaded cap, two solarium bays, terra cotta cornice, and ornamental detailing of that style. Ornamental detail includes floral and acanthus-leaf motifs, urns, fleur-de-lis, cherub's heads, and griffins. The B/C Wing was designed as a compatible addition to the A/B Wing and incorporates many design cues from the A/B Wing, including replication of the detailing and configuration of the solarium bay, an extension of the terra cotta cornice, and massing and footprint that mimic the L-plan of the A/B Wing (rather than reflecting contemporary hospital design, which had by that point shifted to block massing). The B/C Wing also incorporates design updates that reflect its era of construction, such as larger multi-lite steel sash windows and a modern solarium at the southernmost façade. In sum, the building presents very good overall visual quality.

2. Interior

The City of Oakland's evaluation process only provides ratings for interiors of public buildings. Therefore, the interior of the A/B and B/C Wings together does not receive a rating.

3. Construction

The A/B and B/C Wing together receive a good (G) rating for construction. Both wings are steel reinforced concrete buildings with pressed brick cladding, characteristic of both eras of construction.

4. Designer/Builder

Designer/Builder is good (VG). The A/B Wing was constructed by Edward W. Cannon, a Bay Area designer of tertiary importance, and the B/C Wing was constructed by the firm of Stone and Mulloy, Bay Area designers of secondary importance who became known for their hospital designs and designed approximately 20 hospitals and medical buildings in Northern California in the post-war era.

5. Style/Type

The A/B and B/C Wings together receive a rating of very good (VG) for style/type criterion. The A/B Wing embodies many early 20th century hospital design trends. The building is narrow and linear in form, to facilitate a "Nightingale ward" arrangement. The building is a good example of Northern Italian Renaissance style, clad in brick and terra cotta to fireproof the structure and prevent the spread of contagious disease. Oriented to the south to maximize its exposure to sunlight, the building includes solariums and a high number of windows to ensure light and airflow. The B/C Wing continues the layout and design of the A/B Wing, and was designed as part of a master plan undertaken to expand the function but maintain the aesthetic of the existing A/B Wing. Modern style details at the B/C Wing reinterpret the Northern Italian Renaissance style in an updated but sensitive way.

B. History/Association

6. Person/Organization

The A/B and B/C Wings receive a rating of good (G) for this criterion, since the two wings together represent the expanding needs of the Children's Hospital after the hospital's primary period of significance. As such, they can be considered intimately connected to an organization of tertiary importance (prominent but not leading role) to the City's development.

7. Event

Research has uncovered no specific significant events that took place at the A/B and B/C Wings. Thus, the building receives a FP rating for this criterion.

8. Patterns

The A/B Wing and B/C Wing together receives a good (G) rating for this criterion. The A/B and B/C Wings are associated with improved healthcare for children and the need for larger facilities to serve Oakland's growing population after World War II. However, this population surge had an effect on the city's entire civic infrastructure, not specifically hospitals. The population increase could be considered a pattern of tertiary importance, garnering the A/B Wing and B/C Wing a rating of good for this criterion.

9. Age

The A/B Wing was constructed in 1926 and received a G rating, while the B/C Wing was constructed in 1946-1948 and as such receives an FP rating for this criterion. The associated numerical score for this criterion is averaged between the two (see Appendix).

10. Site

The A/B and B/C Wings have not been moved and as such receive a rating of excellent (E) for this criterion.

C. Context

11. Continuity

The A/B and B/C Wings are not located in an API or ASI, and therefore receive an FP rating for this criterion.

12. Familiarity

The A/B and B/C Wings receive an FP rating for this criterion, due to the way changes in the area have largely removed both wings from public view. Only the east façade of the A/B Wing is visible from the elevated Grove-Shafter Freeway. On the whole, however, the wings are no longer conspicuous or familiar within their surrounding context. The construction of the Ford Research and Diagnostic Center in 1962, the construction of the Grove/Shafter Freeway (State Route 24) in 1968, the closure of 51st Street, the closure of public access to Dover Street south of 52nd Street, the construction of the West Site Plant in 1979, and the construction of the Patient Tower in 1982 have combined to severely alter and limit the A/B and B/C Wing's familiarity within the neighborhood.

D. Integrity

Ratings in this category are Excellent **(E)**, Good (G), Fair (F), and Poor (P).

13. Condition

The A/B Wing and B/C Wing together receive a good (G) rating for condition, which is a measure of surface wear or structural problems to the building. The building exhibits only minor deterioration of this sort.

14. Exterior and Alterations

The A/B Wing and B/C Wing together have undergone a series of alterations The A/B Wing receives a rating of good (G) while the B/C Wing receives a rating of fair (F). The associated numerical score for this criterion is averaged between the two ratings (see Appendix). Additions to the two wings include demolition of the main arched entry and replacement with a modern two-story entry in 1962; infill of some windows on the A/B Wing; and third story additions at the northern sections of both wings in ca. 1948, 1958, and ca. 1962, The construction of the West Site Plant in 1979 directly abutting the B/C Wing changed the western façade and required the blinding and the alteration of several window groups. The construction of the Patient Tower in 1982 directly abutting the B/C Wing completely obscured the building's original north façade. The enclosure of the B/C Wing's porch at the first story of the east façade in 1987 continued to alter the building's original design and also impaired its stylistic relationship with the A/B Wing, which retains its original first story porch. Many original features and materials are retained, however, particularly on the A/B Wing.

Conclusion

Page & Turnbull's intensive survey and evaluation assigns the A/B and B/C Wings as one building a rating of **C3**, signifying that the building is of secondary importance, not located in a district or area of importance.

D. THE BRUCE LYON MEMORIAL RESEARCH CENTER

The Oakland Cultural Heritage Survey has not assigned the Bruce Lyon Memorial Research Center a preliminary rating. A brief explanation of the evaluation, including each of the fourteen evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent **(E)**, Very Good (VG), Good (G), and Fair/Poor (FP).

A. Architecture

1. Exterior/Design

The Research Center shows good (G) quality of form and composition, with a clearly identifiable International style design influence at the first story, including ribbon windows, glass entry vestibule, cantilevered planes at the vestibule, minimal applied ornamentation, extensive use of glass, emphasis on horizontal planes, and stack bond brick cladding details. The incompatible second story addition reduces its ability to express its original design style.

2. **Interior**

The interior of the building was not evaluated for this report.

3. **Construction**

The building is a steel reinforced concrete building with brick cladding, characteristic of its era of construction, and therefore receives a rating of good (G) for this criterion.

4. Designer/Builder

The Research Center was designed by the firm Stone, Marraccini and Patterson, a later iteration of the firm Stone and Mulloy, which designed the B/C Wing. The firm specialized in hospital design and also designed the Ford Diagnostic and Treatment Center. The Bruce Lyon Center is a rather simple example of a medical building and compared to this building, there are likely better examples (with higher integrity) from their portfolio of work. Nevertheless, the firm's focus on hospital design and their prolific output qualifies the Research Center for a rating of very good (VG) for its association with this firm of secondary importance.

5. Style/Type

The Research Center receives a good (G) rating for this criterion as it is a good example of institutional International style design at the first story. The second story addition at the building reduces its ability to express its original design style.

B. History/Association

6. Person/Organization

The Research Center receives a rating of good (G) for this criterion for its association with the Children's Hospital and the Children's Hospital Oakland Research Institute (CHORI). Because most of CHORI's work at the Research Center occurred in recent decades (less than 50 years ago) and some of their greater medical successes occurred after the organization vacated the building, the Bruce Lyon Research Center can be considered loosely connected to an organization of secondary importance (major but not decisive role) to the City's development.

7. Event

Research has revealed no specific events that took place at the research Center that have made a significant contribution to the community. The research Center receives a rating of FP for this criterion.

8. Patterns

The Research Center receives a rating of good (G) for this criterion, as it is associated with a pattern of shifting hospital design and expansion during its era of construction. As hospitals began to include research in their programmatic needs, hospital design shifted to accommodate this need. The Research Center is the first building at the Children's Hospital site to reflect this new programmatic turn in hospital design.

9. Age

The building was constructed in 1958 and as such receives a rating of FP for this criterion.

10. Site

The building has not been moved and as such receives a rating of excellent (E) for this criterion.

C. Context

11. Continuity

The Research Center is not included in an API or ASI. As such, the building receives a rating of FP for this criterion.

12. Familiarity

The research Center receives an FP rating for this criterion, meaning that it is not particularly conspicuous or familiar within the surrounding neighborhood. This is due to changes in the area that have largely removed the building from public view. The original primary façade faces a busy highway interchange ramp and elevated BART tracks, which reduces its street visibility. The 1974 second story addition also limits visual access to the original 1958 building. Visual access to the building is further diminished by the placement of portable buildings directly to the north and the construction of the Research Center Addition directly to the south in 1992. Employee entrance to the building is now at the east façade, which is otherwise characterized by utility sheds and portable structures. These factors combine to lower the buildings' familiarity.

D. Integrity

Ratings in this category are Excellent (E), Good (G), Fair (F), and Poor (P).

13. Condition

The Research Center receives a good (G) rating for condition, which is a measure of surface wear or structural problems to the building. The building exhibits only minor deterioration of this sort.

14. Exterior and Alterations

The Research Center has undergone a series of alterations which lower its rating in this category to fair (F). The construction in 1974 of an addition at the second story dramatically changed the scale of the building and literally overshadows the original one-story building. This second story addition has little design relationship to the first story. The addition includes an entrance on the east façade which has supplanted the building's original entry vestibule at the west façade. Another addition constructed in 1992 to the south of the original building further altered the design and scale of the original building.

Conclusion

This evaluation assigns the Bruce Lyon Memorial Research Center a rating of **C3**, signifying that the building is of secondary importance not located in a district or area of importance.

E. THE FORD DIAGNOSTIC AND RESEARCH CENTER

The Oakland Cultural Heritage Survey has not assigned the Ford Diagnostic and Research Center a preliminary rating. A brief explanation of the evaluation, including each of the fourteen evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent (E), Very Good (VG), Good (G), and Fair/Poor (FP).

A. Architecture

1. Exterior/Design

The Ford Center shows good (G) quality of form with identifiable International style influences including ribbon windows, full height glass entry bay, asymmetrical primary façade, emphasis on horizontal planes, and minimal ornamentation. The building does not feature much in the way of originality, artistic merit, craftsmanship, or sensitivity to surroundings, however.

2. Interior

The interior of the Ford Center includes a series of research offices and medical-use rooms with no notable architectural detail or association, and as such the building receives a rating of FP.

3. Construction

The construction materials or methods include steel frame concrete with brick cladding, characteristic of its era of construction and therefore receives a rating of good (G) for this criterion.

4. Designer/Builder

The Ford Center was designed by the firm Stone, Marraccini and Patterson, a later iteration of the firm Stone and Mulloy, which designed the B/C Wing and the Bruce Lyon Memorial Research Center. The firm's focus was on hospital design and their output was prolific, however the Ford Center is a rather simple example of a medical building and compared to this building, there are likely better examples (with higher integrity) from their portfolio of work. Nevertheless, the firm's focus on hospital design and their prolific output qualifies the Ford Center for a rating of very good (VG) for its association with this firm of secondary importance.

5. Style/Type

The Ford Center receives a good (G) rating for this criterion as it is a good example of institutional International style design at the first and second story, including ribbon windows, full height glass entry bay, asymmetrical primary façade, an emphasis on horizontal planes, and minimal applied ornament. The third story addition, constructed in 1974, reduces its ability to express its original design style.

B. History/Association

6. Person/Organization

The Ford Center receives a rating of good (G) for this criterion for its association with the Children's Hospital. This building was constructed after the Hospital's primary period of significance, and as such can be considered intimately connected to an organization of tertiary importance (prominent but not leading role) to the City's development.

7. Event

Research has uncovered no significant event that has taken place at the Ford Center, and as such it receives a rating of FP for this criterion.

8. Patterns

The Ford Center receives a rating of good (G) for this criterion, as it is associated with a pattern of shifting hospital design and expansion during its era of construction. As hospitals began to include research in their programmatic needs, hospital design shifted to accommodate this need. The Ford Center joined the Bruce Lyon Memorial Research Center as the earliest buildings at the Children's Hospital site to reflect this new programmatic turn in hospital design.

9. Age

The Ford Center was constructed in 1962 and as such receives a rating of FP for this criterion.

10, Site

The building has not been moved and as such receives a rating of excellent (E) for this criterion.

C. Context

11. Continuity

The Ford Center is not included in an API or ASI. As such, the building receives a rating of FP for this criterion.

12. Familiarity

The Ford Center receives a rating of good (G) for this criterion as the oldest extant building at the Hospital with street façade that is currently prominent. The Ford Center qualifies as a familiar feature in the context of the Temescal neighborhood.

D. Integrity

Ratings in this category are Excellent (E), Good (G), Fair (F), and Poor (P).

13. Condition

The Ford Center receives a rating of good (G) for this criterion, which is a measure of surface wear or structural problems to the building. The building exhibits only minor deterioration of this sort.

14. Exterior and Alterations

The Ford Center has undergone a series of alterations which lower its rating in this category to fair (F). The construction in 1974 of an addition at the third story substantially changed the scale of the building and diminished the horizontality of the original building's International style design. The construction in 1982 of the Patient Tower obscured the building's west façade, and the construction in 1993 of the Cardiac Catheterization Lab obscured parts of the original entrance lobby and the south façade. Windows at the first story of the south façade have been blinded, and interior spatial reconfigurations have made it so that the original entrance doors at the east façade are in use only as emergency exit doors.

Conclusion

This evaluation assigns the Ford Diagnostic and Research Center a rating of **C3**, indicating that it is a building of secondary importance, not located in a district or area of importance.

VIII. EVALUATION OF THE CHILDREN'S HOSPITAL COMPLEX AS A CITY OF OAKLAND LOCAL HISTORIC DISTRICT

The Historic Preservation Element of the City of Oakland General Plan describes two levels of Preservation Districts: Class 1 Preservation Districts are all Areas of Primary Importance (API) identified by the intensive survey and other areas that meet the "Guidelines for Determination of Preservation District Eligibility" and Class 2 Preservation Districts are all Areas of Secondary Importance (ASI) identified by the intensive survey and other areas that meet the "Guidelines for Determination of Preservation District Eligibility." [176] Areas of Primary Importance are areas that have been identified by an intensive survey as having a high proportion of individual properties with ratings of "C" or higher. At least two-thirds of the properties within an API must be contributory to the API, i.e. they reflect the API's principle historical or architectural themes. APIs appear eligible for the National Register of Historic Places either as districts or as historically related complexes. Areas of Secondary Importance are similar to Areas of Primary Importance except that (a) an ASI does not appear eligible for the National Register and (b) altered properties which do not now contribute to the ASI but would if restored are counted as contributors for purposes of the two-thirds threshold.

The Children's Hospital complex does not appear eligible for listing as a City of Oakland Designated Historic District, either as an API or an ASI. Only four of the twelve buildings at the Hospital complex are older than 45 years old, which is below the two-thirds threshold established in the Preservation Element. The A/B Wing (Baby Hospital) received a score of **B3** (major importance) while the other three buildings received ratings of **C3**, indicating that they are buildings of secondary importance. They do not illustrate a unified significant architectural or historical theme. Therefore, the Children's Hospital complex does not qualify as a City of Oakland Local Historic District.

[176] Oakland General Plan, Historic Preservation Element, Chapter 4: Preservation Incentives and Regulations, Policy 2.2: Landmark and Preservation District Eligibility Criteria.

IX. STATUS OF CHILDREN'S HOSPITAL BUILDINGS AS HISTORICAL RESOURCES UNDER CEQA

A building may qualify as a historical resource if it falls within at least one of five categories established by the City of Oakland (See page 9-10 for the list of categories). The following describes the status of the hospital buildings as historic resources for the purposes of CEQA, based on the California Register and City of Oakland Designated Historic Property evaluations in the previous sections.

Status of the A/B Wing (Baby Hospital) as a Historical Resource Under CEQA
Based on our analysis, the A/B Wing (Baby Hospital) is not eligible for listing in the California Register, though it is eligible for listing as a City of Oakland Designated Historic Property. Therefore, the A/B Wing (Baby Hospital) qualifies as a historical resource under CEQA.

Status of the B/C Wing as a Historical Resource Under CEQA
Based on our analysis, the B/C Wing is not eligible for listing in the California Register or as a City of Oakland Designated Historic Property. Therefore, it does not qualify as a historical resource under CEQA.

Status of the A/B Wing and B/C Wing as a Historical Resource Under CEQA
Based on our analysis, the A/B Wing and B/C Wing, considered together as one building, are not eligible for listing in the California Register or as a City of Oakland Designated Historic Property . Therefore, they do not qualify together as a historical resource under CEQA.

Status of the Bruce Lyon Memorial Research Center as a Historical Resource Under CEQA
Based on our analysis, the Bruce Lyon Memorial Research Center is not eligible for listing in the California Register or as a City of Oakland Designated Historic Property, and, therefore, does not qualify as a historical resource under CEQA.

Status of the Ford Diagnostic and Research Center as a Historical Resource Under CEQA
Based on our analysis, the Ford Diagnostic and Research Center is not eligible for listing in the California Register or as a City of Oakland Designated Historic Property, and, therefore, does not qualify as a historical resource under CEQA.

Status of Other Buildings on the Main Hospital Site
The other properties in the hospital complex are less than forty-five years old and do not possess a level of significance that would qualify them for listing as historic resources under CEQA. These buildings include the Cardiac Catheterization Lab, Central Plant/West Site Plant, Patient Tower, Cafeteria, Helistop, Outpatient Center, and parking garage.

Status of the Children's Hospital and Research Center as a Historic District Under CEQA

Based on our analysis, the Oakland Children's Hospital and Research Center is not eligible for listing in the California Register or as a City of Oakland Designated Historic Property, and, therefore, does not qualify as a historical resource under CEQA.

X. A/B WING (BABY HOSPITAL) CHARACTER-DEFINING FEATURES DIAGRAMS

Though the A/B Wing (Baby Hospital) was not found eligible for listing in the California Register due to a loss of integrity, it was found eligible for listing as a City of Oakland Designated Historic Property with a rating of **B3**. This section addresses the character-defining features of the building and presents diagrams which show areas of character-defining and non-contributing features.

CHARACTER DEFINING FEATURES OF THE A/B WING (BABY HOSPITAL)

The A/B Wing (Baby Hospital) retains certain elements of its design and materials that can be described as character defining features. These include:

- The building's footprint; its narrow linear form and its southern orientation reflect the era of the building's construction and its status when built as a modern hospital.
- The ratio of solid to void; the building's evenly spaced smaller windows are characteristic of the Northern Italian Renaissance style in which it was designed.
- Brick and terra cotta cladding; this cladding is original to the building's design and construction, and is representative both of its Northern Italian Renaissance design style and the programmatic sanitation and fire-safety requirements of the Baby Hospital.
- Two two-story five-sided bays; these bays were used as solariums during an era when sunlight was believed to have healing qualities and are character defining for their programmatic use.
- Original windows of the primary type and surrounds: the building retains most of its original windows within original window surrounds—paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels—which are representative of the building's era of construction.
- Ornamentation and architectural detail: the building is distinguished by its high level of design detail, including fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins, molded frieze depicting animal and bird motifs, bambino medallion, and a terra cotta balcony supported by ornamented brackets with floral and acanthus-leaf motifs.

The character-defining features represented in the following diagrams (colored red) consist of original features and materials, described above. Non-contributing features are those that have been modified, replaced, or added since the A/B Wing (Baby Hospital)'s period of significance (1926).

Children's Hospital - A/B Wing
CHARACTER-DEFINING FEATURES DIAGRAM

South (End Solarium) Elevation

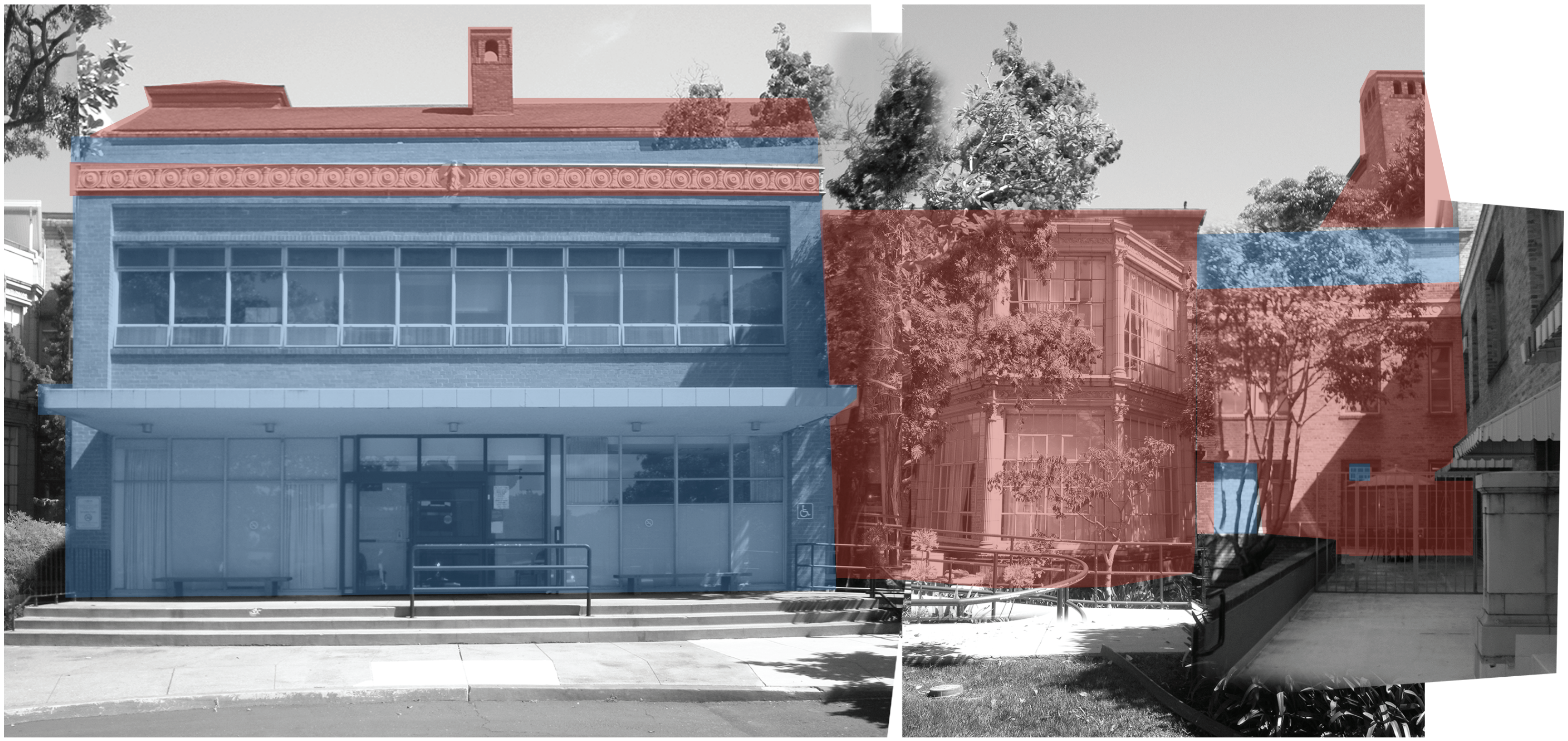
LEGEND

Character-Defining

Non-Contributing

Children's Hospital - A/B Wing
CHARACTER-DEFINING FEATURES DIAGRAM

South (Entrance Facade) Elevation



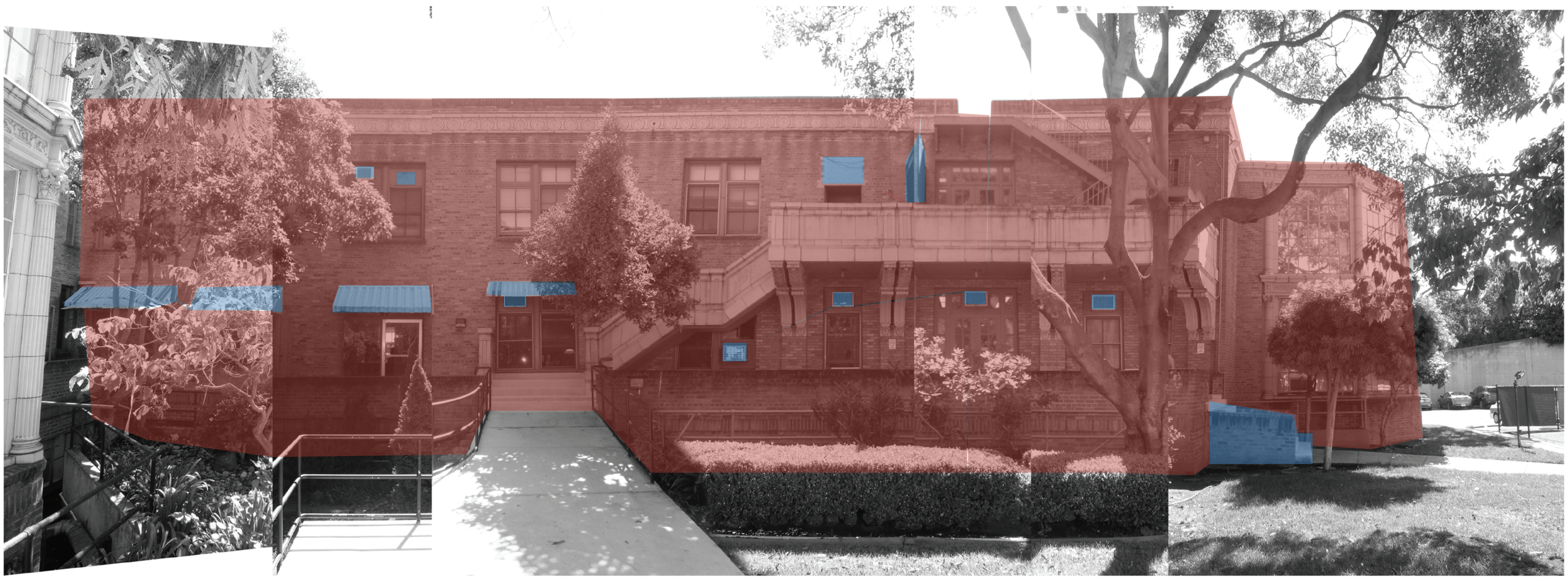
LEGEND

Character-Defining

Non-Contributing

Children's Hospital - A/B Wing
CHARACTER-DEFINING FEATURES DIAGRAM

West Elevation



LEGEND

Character-Defining

Non-Contributing

Children's Hospital - A/B Wing
CHARACTER DEFINING FEATURES DIAGRAM

East Elevation

LEGEND

Character-Defining

Non-Contributing

Children's Hospital - A/B Wing
CHARACTER DEFINING FEATURES DIAGRAM

North Elevation

LEGEND

Character-Defining

Non-Contributing

XI. RESIDENTIAL/COMMERCIAL PROPERTIES EVALUATION

This section provides an inventory of the fourteen residential, mixed-use, and commercial properties within the study area (See **Figure 2** on page 18). Included as part of this inventory are an architectural description, building history, current historic status, and an evaluation of eligibility for inclusion in the California Register of Historical Resources and designation as a City of Oakland Designated Historic Property. A description of the 55th and Dover Residential District is also included.

A. 55TH AND DOVER RESIDENTIAL DISTRICT

The 55th and Dover Residential District is a residential neighborhood in North Oakland bounded by 52nd and 55th streets to the south and north, Martin Luther King Jr. Way to the west, and the Grove-Shafter Freeway (State Route 24) to the east. The predominant architectural styles are Craftsman and Colonial Revival. Most buildings in the district are wood frame, one-and-a-half- to two-story residences clad in wood clapboard siding, wood shingles, or stucco. The residences are sited on fairly uniformly-sized lots and display regular setbacks from the street and spacing between buildings. Most buildings were built between 1900 and 1920, according to Oakland Cultural Heritage Survey (OCHS) estimates.

The area was surveyed by the OCHS in 1996 and assigned a rating of Area of Secondary Importance (ASI). As an ASI, at least two-thirds of the properties within its boundaries must have an existing or contingency rating of C or above and be rated as contributors (noted by "+"). The 55th and Dover Residential District is not a designated historic district at present, but the ASI rating is taken into account by city planners when projects are proposed within the district. According to the City Of Oakland's General Plan, ASIs (and their contributors) are not considered historical resources for the purposes of CEQA.

Page & Turnbull was not asked to complete a residential district evaluation for either the state or local registers as part of the scope of work for this project. However, such an evaluation is necessary to fully understand the existing conditions, historic context, and integrity of the district. Based on its current status as an ASI and reconnaissance surveys and research on the subject properties, the district does not appear to have sufficiently cohesive historical or visual themes such that it would be eligible for listing in the California Register. Therefore, it does not appear to be a historic resource under CEQA.

B. 682 52ND STREET

Figure 56. 682 52nd Street, looking north.
Source: Page & Turnbull, April 2008.

Description

Built in 1922, 682 52nd Street is a one-story, wood-frame, single-family residence designed in the Craftsman style **(Figure 56)**. The rectangular-plan building is clad in stucco on the primary façade and wood clapboard siding on the secondary façades. It is capped by a cross-gable roof clad in asphalt shingles. The foundation is not visible. The primary façade faces south. Typical fenestration consists of fixed wood-sash windows, sliding vinyl-sash windows, and wood-sash casement windows. The primary entrance features a flush wood door. Architectural and site details include concrete stairs, molded window surrounds, a metal window awning, simple wood eave brackets, and a stuccoed chimney. The building appears to be in good condition. A concrete driveway runs past the west side of the house. A one-story garage is shown at the rear of the building on Sanborn Fire Insurance Maps dating to 1930, though today there appears to be a smaller shed at the rear of the lot.

Historic Context

Emma M. Williams owned two vacant lots on Dover Street from ca. 1905 until 1922.[177] The 1920 Census indicates that Williams lived on 23rd Street in Oakland.[178] By 1922, the lots were divided, reoriented to front on 52nd Street, and the eastern lot was sold to John Andrews.[179]

In 1922, Andrews commissioned builder R. L. Robins to build a house at 682 52nd Street for $3,000.[180] John Andrews was born ca. 1874 in Lithuania and married Ursula, another Lithuanian

[177] 1900, 1905, 1921, 1923 Block Books.
[178] 1920 Census.
[179] 1923 Block Book.

immigrant, one year after he arrived in the United States in 1903.[181] The Andrews had two daughters, Violet and Clara, who were born in California. In 1930, Andrews worked as a machinist and Clara worked as a telephone operator. At that time, the house was valued at $5,500. John Andrews continued to reside at 682 52nd Street through 1940, though he is listed as a widower in the 1940 Census. It is likely he sold the property soon after Ursula's death. By 1967, the property was under the possession of Jewel Edward Brown. Mr. Brown was born in 1912 in Louisiana. He moved to Oakland during the 1930s and worked as a porter.[182] He stayed at 682 52nd Street until his death in 1990.[183]

The builder of 682 52nd Street was Rockford L. Robins, a contractor who lived on Broadway in North Oakland.

Current Historic Status

682 52nd Street has an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that it is a building of secondary importance that contributes to the 55th and Dover Residential District, an Area of Secondary Important (ASI). Buildings that contribute to ASIs are Potentially Designated Historic Properties, or PDHPs. This rating for 682 52nd Street is shown on the Citywide Preliminary Historical and Architectural Inventory field map, though it is not included in the 55th and Dover Residential District's Preliminary Property List attached to the 1996 District Primary Record.

Evaluation for the California Register

682 52nd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a simple Craftsman style building without high artistic values that was constructed by a little-known builder (Criterion 3).[184]

682 52nd Street retains integrity of location and feeling as a 1920s residence. While the building appears to have been altered with the addition of stucco cladding, some replacement windows, and conversion to office use, it retains some degree of integrity of design, materials, and workmanship. It lacks integrity of setting, due to the adjacent highway and large modern hospital development across the street. Since the building has been converted to offices and does not retain its original function, it lacks integrity of association.

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180 Building Permit #68273, 14 April 1922.
181 1930 United States Federal Census.
182 1940 Census.
183 *U.S., Social Security Death Index, 1935-Current* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2011.
184 682 52nd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in a the 55th and Dover Residential District (an ASI), and acts as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

682 52nd Street as a Historical Resource Under CEQA

682 52rd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 682 52rd Street does not appear to be a historic resource under CEQA.

C. 688 52ND STREET

Figure 57. 688 52nd Street, looking north.
Source: Page & Turnbull, April 2008.

Description

Built in 1922, 688 52nd Street is a one-story, wood-frame, single-family residence designed in the Craftsman style **(Figure 57)**. The rectangular-plan building, clad in smooth stucco, is capped by a gable roof covered with asphalt shingles. The foundation is not visible. The primary façade faces south. Typical fenestration consists of fixed and double-hung vinyl-sash windows and fixed wood-sash windows. The primary entrance features a flush wood door. Architectural and site features include concrete stairs, an entry porch, molded window surrounds, metal window awnings, simple wood eave brackets, and a chimney with a molded crown. The building appears to be in good condition. A garage clad in channel drop wood siding sits behind the building and fronts onto Dover Street. This garage is shown on Sanborn Fire Insurance Maps dating from 1930.

Historic Context

Emma M. Williams owned two vacant lots facing onto Dover Street from ca. 1905 until 1922.[185] The 1920 Census indicates that Williams lived on 23rd Street in Oakland.[186] By 1922, the lots were divided, reoriented to front onto 52nd Street, and the western lot was sold to A. A. Moore.[187]

In 1922, Arthur A. Moore commissioned builder M. Bensen to build a house at 688 52nd Street at a cost of $3,800.[188] The 1920 Census indicates that Moore lived with his parents at 478 Roce Street in Oakland.[189] Both Arthur and his father, Alexander, worked as lathers in the construction industry.

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[185] 1900, 1905, 1921, 1923 Block Books.
[186] 1920 Census.
[187] 1923 Block Book.
[188] Building Permit #71876, 1 September 1922.
[189] 1920 Census.

Two years after their marriage, Arthur and Elsie Moore bought the property at 688 52nd Street.[190] By 1930, four people lived at 688 52nd Street: Arthur and Elsie, their young daughter Muriel, and Arthur's widowed father. At that time the house was valued at $6,000.[191] Sometime during the following decade, the Moore family relocated to a different house in the district. O.J. Rollie was residing at 688 52nd Street by 1969 and continued to own the property until his death in 1991.[192] Rollie was born in Texas in 1912. He and his wife moved to Oakland after they were married in 1937.

The builder of 688 52nd Street, Martin Bensen, was born ca. 1885 in Sweden. He immigrated to the United States in 1903 and was naturalized in 1912. In 1920, he worked as a carpenter and rented a house with his wife, Jennie, and three children in Oakland's Fruitvale district.[193]

Current Historic Status

688 52nd Street has an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that it is a building of secondary importance that contributes to the 55th and Dover Residential District, an Area of Secondary Important (ASI),. Buildings that contribute to ASIs are Potentially Designated Historic Properties, or PDHPs. This rating for 688 52nd Street is shown on the Citywide Preliminary Historical and Architectural Inventory field map, though it is not included in the 55th and Dover Residential District's Preliminary Property List attached to the 1996 District Primary Record.

Evaluation for the California Register

688 52nd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a simple Craftsman style building without high artistic values and was constructed by a little-known builder (Criterion 3).[194]

688 52nd Street retains integrity of location, design, and feeling as a 1920s residence. While the building appears to have been altered with the addition of stucco cladding and some replacement windows, it retains some degree of integrity of materials and workmanship. It lacks integrity of setting, due to the adjacent highway and large modern hospital development across the street. As no important historic event or person is associated with the property, it lacks integrity of association.

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[190] 1930 Census.
[191] Ibid.
[192] *U.S., Social Security Death Index, 1935-Current* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2011.
[193] 1920 Census.
[194] 688 52nd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in the 55th and Dover Residential District (and ASI) and acts as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

688 52nd Street as a Historical Resource Under CEQA

688 52nd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 688 52nd Street does not appear to be a historic resource under CEQA.

D. 720 52ND STREET

Figure 58. 720 52nd Street, looking north.
Source: Page & Turnbull, May 2013.

Description

Built in 1907, 720 52nd Street is a one-story, wood-frame, single-family residence designed in a modified Simple Bungalow style **(Figure 58)**. The rectangular-plan building, clad in wood clapboard siding, is capped by a hip roof covered with asphalt shingles. A wide square bay window is located on the front façade and is surmounted by a gable end clad in wood shingles. The foundation is not visible. The primary façade faces south. Typical fenestration consists of double-hung vinyl-sash windows, some set in angled window bays. The primary entrance is covered by a metal security gate. Architectural and site features include concrete stairs, a recessed corner entry porch supported by a square post, molded wood window surrounds, and a brick chimney. The building appears to be in good condition.

Historic Context

In 1905, J. C. Rudolph owned most of the south side of the block bounded by 52nd, 53rd, Grove, and Dover streets. Rudolph lived at 5203 Dover Street (see *D. 5203 Dover Street)*. In 1907, builder W. H. Keifer purchased 5203 Dover Street and the vacant lot on 52nd Street, where he built the subject property at 720 52nd Street that year.[195] Architect Thomas D. Newsom designed the residence, which was constructed by the lot owner, Keifer. Keifer sold the property to Jennie M. Sessions in 1908.

Architect Thomas Dean Newsom was born ca. 1857 to Scottish and Irish parents who had immigrated to Canada.[196] He married his wife, Kittie, ca. 1885, and they had four children in California. By 1889, Thomas established an architecture office under the business name John J. & T.

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[195] 1907 Block Book.
[196] 1910 Census.

D. Newsom.[197] The Newsoms lived in East Oakland. The architectural office was located in San Francisco at 504 Kearny in 1891, but it moved to downtown Oakland by 1900.[198] In 1908, Newsom designed a two-story apartment building in Oakland for William F. Schroeder, a local building contractor.[199] Before construction, the building was touted as "one of the most novel ever built in Oakland" for its massing, which referenced that of the Egyptian pyramids.[200]

William Hammond Keifer, the owner and builder of 720 52nd Street, was born in 1857 in Pennsylvania and lived with his wife, Elizabeth, three children, his father, and his sister in Oakland in 1900.[201] Elizabeth died between 1900 and 1910, and Keifer and his youngest child moved in with his sister and brother-in-law in Oakland by 1910. At that time Keifer, a carpenter by trade, was the vice president of Oakland Builders Supply.[202] Most likely, Keifer built the house on speculation and never occupied it, as he sold the property to Jennie M. Sessions in 1908.[203] No information was found on Sessions at local repositories or in online census databases.

In 1920, Herman Garloff rented 720 52nd Street.[204] He lived there with his wife Mamie, sister-in law Lizzie Salmina, and two brothers-in-law, George and Albert Salmina. Herman worked as a shipfitter, George worked as a dairy farmer, and Albert was employed with a railroad company as a pipe fitter. The Salminas were born in California to Swiss-Italian and English immigrant parents.

E. W. Roberts (or Ernest H. Roberts) purchased the house ca. 1922.[205] In 1930, 40-year-old Roberts still lived in the house with his wife Selina and their son Ernest.[206] Ernest worked as a bookkeeper, probably for a cannery. In 1940, Roberts still lived in the house with his wife and son.[207] By 1967, Graham McClendon was residing at 750 52nd Street McClendon, a former farmer born in Mississippi ca. 1923, moved to Oakland after serving in World War II.

Current Historic Status

720 52nd Street has an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that the building is of minor importance. It is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are Potentially Designated Historic Properties, or PDHPs.[208]

Evaluation for the California Register

720 52nd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local,

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197 1889-91 San Francisco City Directory.
198 Ibid.; *Oakland Tribune*, 3 May 1908, 58.
199 Ibid.; 1910 Census.
200 *Oakland Tribune*, 3 May 1908, 58.
201 1900 Census.
202 1910 Census; Oakland City Directory, 1910.
203 1908 Block Book.
204 1920 Census.
205 1921, 1923 Block Books.
206 1930 Census.
207 1940 Census
208 "City of Oakland Historic Preservation Programs."

state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a Simple Bungalow style building without high artistic values. It was constructed by a local architect who today is not widely known and cannot be considered a master architect (Criterion 3).[209]

720 52nd Street retains integrity of location, design, workmanship, association, and feeling as an early 20th-century residence. While the building appears to have been altered with replacement windows, it retains some degree of integrity of materials. It lacks integrity of setting, due to an adjacent large modern Children's Hospital Outpatient Building, the large modern hospital complex across the street, and the nearby highway. The property also lacks integrity of association, as the nearby modern buildings visually overshadow the property and physically separate it from its historic association with much of the adjacent residential neighborhood.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district, and acts as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

720 52nd Street as a Historical Resource Under CEQA

720 52nd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 720 52nd Street does not appear to be a historic resource under CEQA.

[209] 720 52nd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

E. 5203 DOVER STREET

Figure 59. 5203 Dover Street, looking west.
Source: Page & Turnbull, April 2008.

Description

Built ca. 1905, 5203 Dover Street is a one-story, wood-frame, single-family residence designed in the Simple Bungalow style with Classical Revival detail **(Figure 59)**. The rectangular-plan building, clad in wood channel-drop and clapboard siding, is capped by a hip roof covered with asphalt shingles. A front-facing gable end is clad in wood shingles and features a multi-light wood-sash window. A side-facing dormer holds a multi-light wood-sash window. The foundation is not visible. The primary façade faces east. Typical fenestration consists of double-hung and fixed wood-sash windows, some set in angled and square window bays. The primary entrance features a partially-glazed wood door. Architectural and site features include wood stairs, an entry porch with Classical columns, molded wood window surrounds, a hip-roof dormer, and a brick chimney. The building appears to be in good condition.

Historic Context

In 1905, J. C. Rudolph owned most of the south side of the block bounded by 52nd, 53rd, Grove, and Dover streets. He lived at 5203 Dover Street in a house built ca. 1905.[210] 5203 Dover Street and the vacant property to the west at 720 52nd Street were sold to W. H. Keifer ca. 1907. The builder of 5203 Dover Street is unknown.

Emma C. Krone bought the house and property at 5203 Dover Street from Keifer ca. 1908. It is unclear whether she ever lived on the property: In 1910 she lived on Oak Grove Avenue with her

[210] 1900, 1905 Block Books.

young son and daughter and a 42-year-old boarder, Howard W. Caldwell.[211] Krone, a 33-year-old divorcee, worked as a secretary at a land company in 1910.

Krone sold the property at 5203 Dover Street to Walter B. and Mertie F. Hutchings (or Hutshing) in 1910.[212] Walter B. Hutchings was 30 years old, and his wife Mertie was 26. They had been married for one year. Hutchings lived off his "own income."[213] By 1912, ownership of the property was transferred to Mertie F. Hutchings.[214] In 1915, Mertie F. Butler owned the house, indicating that Mertie and Walter Hutchings separated either through death or divorce , and Mertie remarried Frank Butler. In 1920, Frank, Mertie, and three daughters under 10 years old occupied the house.[215] Frank worked as an accountant at an automobile company.

In 1930, Louise A. Searper, age 44, rented the house for $35 per month. Searper lived with her sons Charles S. and Leslie L. White; William B. Butler, a boarder from Hawaii; and an uncle and aunt, Bruce and Edith Gibson. Searper was divorced and worked as a saleslady at a department store. Charles White worked as a restaurant cook, Leslie White worked as a marine engineer, William Butler worked as a city health inspector, and the Gibsons were unemployed or retired. Searper is not recorded in the 1940 Census. By 1967, Rosemon (or Roseman) Willis was residing at 5203 Dover Street. Willis was born in Mississippi in 1913 and died in in 1991.[216] He lived with his wife, Mary.

Current Historic Status

5203 Dover Street has an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that the building is of minor importance. It is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are considered Potential Designated Historic Properties, or PDHPs.[217]

Evaluation for the California Register

5203 Dover Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a Simple Bungalow style building with a minor amount of Classical Revival detail, and does not possess high artistic values. The architect or builder are unknown and cannot be considered a master architect (Criterion 3).[218]

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211 1930 Census.
212 1910 Census.
213 Ibid.
214 1912 Block Book.
215 1920 Census.
216 *U.S., Social Security Death Index, 1935-Current* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2011.
217 "City of Oakland Historic Preservation Programs."
218 5203 Dover Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

5203 Dover Street retains integrity of location, design, workmanship, materials, and feeling as an early 20th-century residence. It lacks integrity of setting, due to the nearby large Children's Hospital Outpatient Center, the large modern hospital complex across the street, and the nearby Grove-Shafter Freeway. The building also lacks integrity of association because it is use as offices and is no longer associated with its original function as a residence.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

5203 Dover Street as a Historical Resource Under CEQA

5203 Dover Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 5203 Dover Street does not appear to be a historic resource under CEQA.

F. 5212-5214 DOVER STREET

Figure 60. 5212-5214 Dover Street, looking north.
Source: Page & Turnbull, May 2013.

Description

Built in 1910, 5212-5214 Dover Street is a two-story, wood-frame, multi-family residence that has been altered from its original style **(Figure 60)**. The rectangular-plan building is clad in wood clapboard siding on the primary façade and stucco on the secondary façades. It is capped by a flat roof. The foundation is concrete. The primary façade faces west. Typical fenestration consists of sliding vinyl-sash windows and fixed and double-hung wood-sash windows. The primary entrance features a flush wood door with sidelights. Architectural and site features include concrete stairs, a porch with tapered columns, and pent roofs above the first and second stories. The building appears to be in good condition.

Historic Context

Harry M. Swalley, a contractor and house carpenter, bought the vacant lot at 5214 Dover Street ca. 1907 and constructed a house on it in 1910.[219] In 1912, a rear structure was built on the property.[220] A second rear structure was constructed before 1930.[221]

Harry Swalley was born ca. 1874 in Missouri and married his wife, Emma, around 1905.[222] Their son Leavitt was born ca. 1909.[223] From 1908-09, Swalley also owned a nearby property at 5325 Dover Street.[224] The Swalleys had moved near Oakland's Lake Merritt by 1916, and in 1920 Harry was working as a concessionaire at an amusement park. [225]

219 1907 Block Book; Building Permit #12305, 1908.
220 1912 Block Book.
221 1930 Sanborn Fire Insurance Map.
222 1910 Census.
223 Ibid.
224 1908, 1909 Block Books.
225 California Voter Registrations 1900-1968, Alameda County; 1920 Census.

Edward S. Howland, a guard at a government shipyard, bought the property at 5212-14 Dover ca. 1915.[226] Howland, born ca. 1872, was married to Johanna and they had two daughters.[227] By 1920, one daughter, Matie, and her husband Albert E. Swan, also lived at 5214 Dover, along with Johanna's father, Charles T. Grimme. Albert Swan and Emma Howland both worked at a retail meat market.

Clyde A. Croswell bought the property at 5212-14 Dover ca. 1922.[228] By 1930, the house was valued at $7,500 and included a unit rented for $35 per month. Clyde Croswell, age 33, lived at 5214 Dover with his wife, E. Glo, and mother-in-law, Margaret E. Shinkle.[229] Clyde worked as an inspector with the police department, and his wife was associated with detective work. The rental unit at 5212 Dover Street was occupied by Clyde's father, Jesse B. Croswell, his wife Isabella, and their teenage daughters. Jesse Croswell worked as an electrician. During the 1960s, Frank A. Boykin took over ownership of the property. Boykin was employed as a bus driver and lived at 5212 Dover Street with his wife Jewel. According to Oakland city phone directories, Jewel continued to reside at the property until 2002.

Between 1930 and 1952, a rear addition was constructed.[230] A second one-story structure was built at the rear of the property ca. 1968.[231] The front porch was added after 1969.

Current Historic Status

5212-5214 Dover Street has an Oakland Cultural Heritage Survey rating of Dc2+, indicating that it is a building of minor importance located in the 55th and Dover Residential District, an Area of Secondary Importance (ASI), and contributes to that district. Its contingency rating of "c" indicates that the building rating may be upgraded in the future if inappropriate alterations are reversed.

Evaluation for the California Register

5212-5214 Dover Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working- and middle-class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is an altered Craftsman style building and does not possess high artistic values. The builder, Harry M. Swalley, is not well-known and cannot be considered a master architect (Criterion 3).[232]

5212-5214 Dover Street retains integrity of location. The building appears to have been altered with replacement windows, a porch addition, rear addition, and replacement cladding, which compromises

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[226] Ibid.; 1915 Block Book.
[227] 1920 Census.
[228] 1921, 1923 Block Books.
[229] 1930 Census.
[230] 1930, 1952 Sanborn Fire Insurance Maps.
[231] 1967, 1969 Sanborn Fire Insurance Maps.
[232] 5212-14 Dover Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

integrity of materials, design, workmanship, and feeling as an early 20th-century residence. It retains some degree of integrity of residential setting, though a large modern apartment building was constructed on the property to the north. As no important historic event or person is associated with the property, it lacks integrity of association.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **D2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

5212-5214 Dover Street as a Historical Resource Under CEQA

5212-5214 Dover Street is not eligible for listing in the California Register and received a "D" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 5212-5214 Dover Street does not appear to be a historic resource under CEQA.

G. 5225 DOVER STREET

Figure 61. 5225 Dover Street, looking west. Source: Page & Turnbull, May 2013.

Description

Constructed in 1908, 5225 Dover Street is a two story over exposed basement, rectangular plan, Craftsman-style residence clad in asbestos shingle siding and capped with a double cross-gable roof **(Figure 61)**. A concrete foundation is visible at the base of the building. The primary façade faces east. The primary entrance is located at the east façade and features a flush wood door sheltered by a shed roof and accessed via a brick stair and a concrete porch. Fenestration is a mix of double-hung and casement wood sash at the first and second stories; all windows have security bars at the first story. The north façade includes an enclosed porch at the first story with Craftsman-style corner posts, and two large dormers at the second story. The south façade includes an additional entrance, a flush wood door accessed by a short wood stair and sheltered by a front-gable porch. Second story gable ends have lattice vents at the peak and are supported by simple wood brackets. The building appears to be in fair condition, as alterations to the cladding are visible and some windows are damaged.

Historic Context

Harry M. Swalley, a contractor and house carpenter, bought the vacant lot at 5225 Dover Street ca. 1907 from Anna Kaufner and in 1908 received a permit for the construction of a two-story house.[233] Swalley also owned property and built houses at 5212-5214 Dover Street and 5325 Dover Street.

Harry Swalley was born ca. 1874 in Missouri and married his wife, Emma, around 1905.[234] Their son Leavitt was born ca. 1909.[235] The Swalleys had moved near Oakland's Lake Merritt by 1916, and in 1920 Harry was working as a concessionaire at an amusement park. [236]

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[233] 1907 Block Book.
[234] 1910 Census.
[235] Ibid.

5225 Dover Street passed ownership rapidly several times; in 1911 the house was owned by Gertrude Cogswell, in 1912 by Jonathan Schneider, and in 1914 by Wesley P. Howland.[237] Wesley Howland was a clerk with a rail company who had previously lived on 33rd Street in Oakland before purchasing and moving in to the house on Dover. In 1920, Howland lived at 5225 Dover Street with his wife Edith and their four children, Wesley, Edith, Oliver, and Warren.[238] The Howlands remained in residence at this house into the 1940s.[239]

Arthur and Rosa Stringer occupied the property during the 1960s.[240] Stringer worked as a longshoreman for Far East Shipping Lines.

Current Historic Status

5225 Dover Street has an Oakland Cultural Heritage Survey (OCHS) rating of Dc2+, indicating that the building is of minor importance. Its contingency rating of "c" indicates that the building rating may be upgraded in the future if inappropriate alterations are reversed. The building is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are considered Potential Designated Historic Properties, or PDHPs.[241]

Evaluation for the California Register

5225 Dover Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a relatively simple Craftsman style building and does not possess high artistic values. The builder, Harry M. Swalley, is not well-known and cannot be considered a master architect (Criterion 3).[242]

5225 Dover Street remains where it was originally constructed, and therefore retains integrity of location. The building appears to have been altered with some replacement windows and contemporary cladding, however it does retain some degree of integrity of materials, design, workmanship, and feeling as a largely intact early 20th-century residence. It retains some degree of integrity of setting within the residential neighborhood, though it sits in the shadow of the large modern Children's Hospital Outpatient Building to the west and adjacent to a smaller contemporary building directly to the south. As no important historic event or person is associated with the property, it lacks integrity of association.

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[236] California Voter Registrations 1900-1968, Alameda County; 1920 Census.
[237] 1911, 1912, and 1914 Block Books.
[238] 1920 Census.
[239] Polk's 1946 Oakland City Directory.
[240] Polk's Oakland City Directory, 1967.
[241] "City of Oakland Historic Preservation Programs."
[242] 5225 Dover Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **D2+**, meaning that it is a building of minor importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the appendix.

5225 Dover Street as a Historical Resource Under CEQA

5225 Dover Street does not appear to be individually significant under any California Register criteria and received a "D" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 5225 Dover Street does not appear to be a historic resource under CEQA.

H. 665 53RD STREET

Figure 62. 665 53rd Street, looking southeast.
Source: Page & Turnbull, May 2013.

Description

665 53rd Street is a one-story, wood-frame office building with no discernible style **(Figure 62)**. The rectangular-plan building is capped by a flat roof with a shed roof over a full-length front porch. A stepped false parapet is located toward the east end of the roof. The foundation is not visible. The building is clad in wood panel and beveled cladding. The primary façade faces north. Typical fenestration consists of fixed vinyl-sash windows with false muntins. Entrances include flush and partially-glazed wood doors. Architectural and site features include a front parking area, a fenced front yard, steps and a ramp leading to the porch, and wood posts at the porch. The building appears to be in good condition.

Historic Context

No records are available providing the construction date of 665 53rd Street, but the building appears to be less than 50 years old and was likely constructed after the Children's Hospital and Research Center Oakland acquired the property in 1985. Buildings less than 50 years old do not fall under the provisions of CEQA and no historic research was conducted.

Current Historic Status

665 53rd Street is less than 50 years old. It does not have an Oakland Cultural Heritage Survey (OCHS) rating and is not listed as a contributor to the 55th and Dover Residential District.

Evaluation for the California Register

665 53rd Street is less than 45 years old and does not qualify as a historic resource under CEQA.

Evaluation for Designation as a City of Oakland Designated Historic Property

The building was not evaluated for designation as it is less than 45 years old.

665 53rd Street as a Historical Resource Under CEQA

In Conclusion, 665 53rd Street is not a historic resource under CEQA.

I. 671 53RD STREET

Figure 63. 671 53rd Street, looking south.
Source: Page & Turnbull, May 2013.

Description

Built in 1906, 671 53rd Street is a one-story, wood-frame, single-family residence designed in the Simple Bungalow style **(Figure 63)**. The rectangular-plan building, clad in wood shingles, is capped by a hip roof clad in asphalt shingles. A hip-roof dormer at the front of the roof features a sliding aluminum-sash window. The foundation is not visible. The primary façade faces north. Typical fenestration consists of fixed and double-hung wood-sash windows. The primary entrance features a paneled, partially-glazed wood door. Architectural and site features include wood stairs, a recessed corner entry porch with a classical column, molded door and window surrounds, exposed rafter tails, and a brick chimney. The building appears to be in good condition.

Historic Context

Edward H. and Mary Davis purchased the vacant lot at 671 53rd Street in 1906 and hired Carl P. Kreischer to build a house on the property the same year.[243] Edward Davis was born in Indiana ca. 1882 and married Mary Black, a California native, in 1904.[244] The Davises had two children, Lucille and Elvin.[245]

The builder of 671 53rd Street was Carl Phillip Kreischer, an Ohio native born ca. 1860 to German immigrant parents.[246] Kreischer was a contractor and house carpenter who resided in North Oakland and later in North Berkeley. Census and voter records show that the family moved frequently. Carl

[243] 1906, 1907 Block Books; Building Permit #4474, 29 August 1906.
[244] 1910 Census.
[245] Ibid.; 1920 Census.
[246] Ibid.

lived with his wife Minnie and their two grown children, who worked as a schoolteacher and a laborer.[247]

In 1910, property owner Edward Davis worked as a shipping clerk in a retail jewelry store. May's sisters, Grace and Gertrude Black, lived with the Davis family. Grace worked as a financial clerk for the State Board of Health, and Gertrude worked as a department store salesperson. In 1920 the sisters still lived with the family, and Edward worked as a route agent at a newspaper.[248] By 1930, the Davis' house on 53rd Street was valued at $3,000.[249] At that time, Edward Davis was employed as an auto mechanic, and May's retired father Robert Black lived at the house with them. They continued to reside at the address through the 1940 census.

Current Historic Status

671 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of C2+, indicating that the building is of secondary importance. It is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs or have a rating of C or higher are Potential Designated Historic Properties, or PDHPs.[250]

Evaluation for the California Register

671 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. Though little altered, the building is also not significant for its architecture because it is a relatively typical Simple Bungalow style building and does not possess high artistic values. The builder, Carl Phillip Kreischer, is not well-known and cannot be considered a master architect (Criterion 3).[251]

671 53rd Street retains a high degree of integrity of location, design, materials, workmanship, and feeling as an early 20th-century residence. The building lacks integrity of setting, as the construction of the Grove-Shafter Freeway caused the closure of 53rd Street, and modern apartment buildings were constructed nearby. This block lacks the intact block-face and visual cohesiveness that characterize the rest of the 55th and Dover Residential District. As no important historic event or person is associated with the property, it lacks integrity of association.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that

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247 California Voter Registrations.
248 1920 Census.
249 1930 Census.
250 "City of Oakland Historic Preservation Programs."
251 671 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

671 53rd Street as a Historical Resource Under CEQA

671 53rd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 671 53rd Street does not appear to be a historic resource under CEQA.

J. 675 53RD STREET

Figure 64. 675 53rd Street, looking south.
Source: Page & Turnbull, May 2013.

Description

Built ca. 1911, 675 53rd Street is a one-story over raised basement, wood-frame, single-family residence designed in the Simple Bungalow style **(Figure 64)**. The rectangular-plan building, clad in textured stucco, is capped by a hip roof covered with asphalt shingles. A hip-roof dormer at the front of the roof contains a multi-light wood window. The foundation is not visible. The primary façade faces north. Typical fenestration consists of double-hung, wood-sash windows and multi-light wood-sash casement windows set in a six-sided window bay. The primary entrance features a partially glazed and paneled wood door. Architectural and site features include an integral garage with a roll-up door at the basement level, concrete stairs, a recessed corner entry porch with tapered wood posts, and a stucco-clad chimney. The building appears to be in good condition.

Historic Context

Minnie Bouton owned two vacant lots facing onto Dover Street from 1907 until ca. 1913.[252] The house at 675 53rd Street was constructed by Edward Collins ca. 1911.[253] It is unlikely that Bouton ever lived on the property, as the 1910 Census shows her as a San Francisco resident. By 1913, the lots were divided, reoriented to front onto 53rd Street, and the eastern house and property sold to Ada E. Kinney. Kinney sold the property to Alma B. Anderson by 1914.[254] No information was found on either woman.

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[252] 1907, 1910, 1913 Block Books.
[253] 1911 Block Book.
[254] 1914 Block Book.

In 1920, Herman and Jamie Lewenthal rented the house at 675 53rd Street.[255] Herman was born ca. 1877 in California to German immigrant parents and sold "men's furnishings" at Smiths Money Back Store.[256] Jamie Lewenthal was born ca. 1881 in England. The Lewenthals did not occupy the house long, as they lived in a house on Market Street in North Oakland in 1922.[257]

Henry C. and Irmgard J. Christian bought the property from Alma Anderson in 1921.[258] One year earlier, in 1920, 37-year-old Henry C. Christian and his wife, 25-year-old Irmgard (or Irma) rented a house on 56th Street with Irmgard's mother Mary McLean and a cousin, Charles H. Veary.[259] Henry worked as an auto mechanic, and Charles Veary worked in a mill as a planing machine operator. The Christians sold 675 53rd Street after 1925 and lived in Berkeley by 1930.[260]

By 1930, Soren Gammelgard owned the house, which was valued at $4,000.[261] The 55-year-old Danish immigrant lived there with his wife Marie, also a Danish immigrant, and their California-born son, Samuel. Soren and Marie immigrated to the United States in 1905. Soren worked as a motorman for the electric railroad, while Samuel worked as a fireman for the steam railroad.

By 1940, Anders and Elizabeth Yttrup owned the house. They lived with their young children William and Marylin. Like the Gammelgards, the Yttrups were Danish immigrants with California-born children. Anders was a maintenance man for a creamery.[262] The home then passed into the hands of Rebecca and George Avedikian, naturalized Turkish immigrants. George died at some point during the 1950s and Rebecca continued to live at 675 53rd Street. They had three children together, at least two of whom were grown and out of the house by the time they acquired the property.[263] [264]

Current Historic Status

675 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of Dc2+, indicating that the building is of minor importance. Its contingency rating of "c" indicates that the building rating may be upgraded in the future if inappropriate alterations are reversed. The building is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are Potential Designated Historic Properties, or PDHPs.[265]

Evaluation for the California Register

675 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little

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255 1920 Census.
256 Oakland City Directory, 1915; Ibid.
257 Oakland City Directory, 1922.
258 1921, 1923 Block Books.
259 1920 Census.
260 1925 Block Book; 1930 Census.
261 Ibid.
262 1940 Census
263 1940 census
264 Polk's Oakland City Directory.
265 "City of Oakland Historic Preservation Programs."

information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is an altered Simple Bungalow style building and does not possess high artistic values. The builder Edward Collins, is not well-known and cannot be considered a master architect (Criterion 3).[266]

675 53rd Street retains integrity of location, workmanship, and feeling as an early 20th-century residence. While the building appears to have been altered with a curved window bay and stucco cladding, it retains some degree of integrity of design and materials. The building lacks integrity of setting, as the construction of the Grove-Shafter Freeway caused the closure of 53rd Street, and modern apartment buildings were constructed nearby. This block lacks the intact block-face and visual cohesiveness that characterize the rest of the 55th and Dover Residential District. As no important historic event or person is associated with the property, it lacks integrity of association.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's survey and evaluation assigns this building a rating of **D2+**, meaning that it is a building of minor importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

675 53rd Street as a Historical Resource Under CEQA

675 53rd Street is not eligible for listing in the California Register and received a "D" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 675 53rd Street does not appear to be a historic resource under CEQA.

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266 675 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

K. 677-679 53RD STREET

Figure 65. 677-679 53rd Street, looking south.
Source: Page & Turnbull, April 2008.

Description

Built in 1921, 677-679 53rd Street is a two-story, wood-frame, two-unit residence designed in a simplified Classical Revival style **(Figure 65)**. The rectangular-plan building, clad in stucco, is capped by a hip roof clad in asphalt shingles. The foundation is not visible. The primary façade faces north. Typical fenestration consists of fixed and double-hung wood-sash windows, some set in a square window bay at the first story level. Visible windows have a four-over-one or two-over-one muntin pattern. The building has two entrances; one consists of a wood door behind a metal security gate and the other is a paneled, partially-glazed wood door. Architectural and site features include concrete stairs, pilasters flanking both entrances, and shallow hoods over both entries. The building appears to be in good condition. A one-story rear garage is shown on Sanborn Fire Insurance Maps dating from 1930, but no longer appears extant.

Historic Context

Minnie Bouton owned two vacant lots facing onto Dover Street from 1907 until ca. 1913.[267] By 1913, the lots were divided, reoriented to front onto 53rd Street, and the undeveloped western lot was sold to Francis D. Giblin, a San Francisco resident who worked as a warehouse packer in 1910 and a chauffeur in 1920.[268] Giblin sold the property to Gertrude W. and Fred G. Kelley ca. 1920.[269]

267 1907, 1910, 1913 Block Books.
268 1910, 1913 Block Books; 1910 Census; 1920 Census.
269 1919, 1921 Block Books.

In 1921, 40-year-old Fred Kelley constructed a house for his family at 679 53rd Street at a cost of $5,000.[270] Fred was a civil engineer employed in the surveying and drafting industry.[271] Fred, his wife Gertrude, and their daughter Alice still lived in the house in 1930.[272]

The building was divided into two rental units by 1940. Albert and May Bowles began renting 679 53rd Street for 25 dollars a month before 1935.[273] Albert was 60 years old and had been born in Missouri. May was born in California. They continued to live in the house until at least 1940. Albert was a machinist and worked for the Public Utility Company. Adam and Ella James, Scottish immigrants, rented the other half of the building, at 677 53rd St during the same period. They lived with their daughter Doris. Adam was a machine operator at paint manufacturer. Ella was a cook at a hospital. The building is currently used as offices for the Children's Hospital.

Current Historic Status

677-679 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that the building is of minor importance. It is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are Potential Designated Historic Properties, or PDHPs.[274]

Evaluation for the California Register

677-679 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it was designed in a very simplified Classical Revival style and does not possess high artistic values. The builder, Fred Kelley, a civil engineer, may have only built this house for himself and cannot be considered a master architect (Criterion 3).[275]

677-679 53rd Street retains integrity of location, design, and feeling as an early 20th-century residence. The building appears to have sustained few alterations and retains integrity of materials and workmanship. The building lacks integrity of setting, as the construction of the Grove-Shafter Freeway caused the closure of 53rd Street, and modern apartment buildings were constructed nearby. This block lacks the intact block-face and visual cohesiveness that characterize the rest of the 55th and Dover Residential District. As no important historic event or person is associated with the property and the building is no longer used as residences, it lacks integrity of association.

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[270] City of Oakland Building Permit #61301, 1921.
[271] 1930 Census.
[272] Ibid.
[273] 1940 Census
[274] "City of Oakland Historic Preservation Programs."
[275] 677-679 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

677-679 53rd Street as a Historical Resource Under CEQA

677-679 53rd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 677-679 53rd Street does not appear to be a historic resource under CEQA.

L. 685-689 53RD STREET

Figure 66. 685-689 53rd Street, looking south.
Source: Page & Turnbull, May 2013.

Description

Built ca. 1914, 685-689 53rd Street is a one-story, wood-frame, mixed-use building with no discernible style **(Figure 66)**. The rectangular-plan building, clad in smooth stucco, is capped by a flat roof. The foundation is not visible. The primary façade faces north. Typical fenestration consists of fixed and double-hung wood-sash windows and metal-sash plate glass windows. The commercial entrance features a partially-glazed wood door with a multi-light wood-sash transom and is located on the angled corner of the building. The residential entrance is recessed and located at the east end of the front façade. It contains a flush wood door and concrete steps clad in ceramic tiles. Architectural features include a ceramic tile water table and a flat, semi-circular hood over the commercial entrance. An associated garage is located to the south, and is not shown in the 1930 Sanborn map. The building appears to be in good condition.

Historic Context

Minnie Bouton owned two vacant lots facing onto Dover Street from 1907 until ca. 1913.[276] By 1913, the lots were divided, reoriented to front onto 53rd Street, and the undeveloped property at 685-689 53rd Street was sold to Harvey M. Carter, a 41-year-old tailor.[277]

Carter commissioned the mixed-use building ca. 1914.[278] The building contained a dwelling and a commercial unit, both occupied by Carter from 1915-16.[279] Carter sold the property to Fred Josephson in 1918 and had moved to San Francisco by 1920.[280]

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[276] 1907, 1910, 1913 Block Books.
[277] 1913 Block Book.
[278] 1914 Block Book.
[279] Polk's Oakland/Berkeley/Alameda Directory, 1915, 1916.
[280] 1918 Block Book; 1920 Census.

Fred Josephson and his family may have never lived at the property at 685-689 53rd Street. Josephson, a 54-year-old Navy officer born in Sweden, bought the property in 1918 and sold it three years later. In 1916, the Josephson family lived on the 600 block of 53rd Street, with Harvey Carter as a neighbor. By 1920, they lived on Andover Street in Oakland.[281] They sold the property at 685-689 53rd Street to C. E. and G. C. Lowell around 1921.[282]

It is unclear who in the Lowell family owned the property at 685-689 53rd Street. C. E. and G. C. Lowell bought the property ca. 1921, and Sophia Lowell, a widow in her thirties, is listed as the property owner in 1930.[283] As early as 1923, however, Sophia, her daughter Elaine, and her brother John D. Lowell lived in the dwelling at 689 53rd Street and operated a grocery store in the commercial unit.[284] After John's death in 1933 or 1934, Sophia Lowell ran the grocery by herself until at least 1943. The commercial unit remained in use as a store until at least 1969.[285] The Lowells previously operated a grocery at 6025 Shattuck Avenue.[286]

A small one-story ancillary building appears on Sanborn maps dating from 1930. This building was demolished between 1952 and 1967 and an addition to the dwelling unit at 685 53rd Street was constructed.[287] A larger garage was constructed in the rear, probably at the same time as the addition.

Current Historic Status

685-689 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of Fd2*, indicating that the building has been modernized. The "d" is a contingency rating indicating that the building may be eligible for a D rating in the future if inappropriate alterations are reversed. It is located in the 55th and Dover Residential District, an Area of Secondary Importance (ASI), but is not a contributor to that ASI.[288]

Evaluation for the California Register

685-689 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. The building is also not significant for its architecture because it is a very altered mix-used building without a discernible style. It does not possess high artistic values. The builder is unknown and cannot be considered a master architect (Criterion 3).[289]

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281 Polk's Directory, 1916.
282 1920 Census.
283 1921 Block Book; 1930 Census.
284 Polk's Directory, 1923, 1933, 1943.
285 Ibid., 1923, 1933, 1943; 1969 Sanborn Map.
286 1920 Census, Polk's Directory, 1922.
287 1952, 1967 Sanborn Fire Insurance Maps.
288 "City of Oakland Historic Preservation Programs."
289 685-689 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

685-689 53rd Street retains integrity of location. The building appears to have been altered with stucco cladding, replacement windows, and removal of storefront windows, and therefore lacks integrity of design, materials, workmanship, and feeling as a mixed-use building from the 1910s. It retains some degree of integrity of setting within a residential neighborhood. The building lacks integrity association since no important historic event or person is associated with the property and the storefront is no longer in use.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **D2+**, meaning that it is a building of minor importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

685-689 53rd Street as a Historical Resource Under CEQA

685-689 53rd Street is not eligible for listing in the California Register and received a "D" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 685-689 53nd Street does not appear to be a historic resource under CEQA.

M. 707 53RD STREET

Figure 67. 707 53rd Street, looking south.
Source: Page & Turnbull, April 2008.

Description

Built in 1907, 707 53rd Street is a two-story, wood-frame residence designed in the Shingle style **(Figure 67)**. The rectangular-plan building, clad in wood shingles, is capped by steep hip roof covered with asphalt shingles and featuring large hip-roof dormers and flared eaves. The foundation is concrete. The primary façade faces north. Typical fenestration consists of double-hung wood-sash windows and wood-sash casement windows in groups of four with louvered transoms. Some windows are set in square window bays that are capped with hip roofs and supported by brackets. The primary entrance features a flush wood door. Architectural and site features include concrete and wood stairs, molded door and window surrounds, a wood balconette, exposed rafter tails, and a brick chimney. The building appears to be in good condition. A detached garage is located at the southwest corner of the lot.

Historic Context

Anna Kaufman purchased two lots facing onto 53rd Street in 1906.[290] In 1907, houses were constructed on both properties, the subject property at 707 53rd Street and the corner property to the east.[291] The house at 707 53rd Street was designed by architect William A. Walker and built by A. Walker & Son. William A. Walker, an Illinois native, was a partner in the North Oakland contracting firm of Walker & Bradhoff in 1910.[292] No information was found on Walker's other architectural

[290] 1906 Block Book.
[291] Building Permit #8077, 13 April 1907.
[292] 1920 Census.

work. No information was found on A. Walker & Son, but the company was likely related to William A. Walker.

It is unclear whether Kaufman ever lived in the house at 707 53rd Street. Around 1908 she sold the house and property at 707 53rd Street to Elizabeth M. Scoby, age 52.[293] Scoby was either widowed or divorced. The 1900 Census records that she lived on 10th Street as the partner of Cornelia Gardener, who operated a small rooming house.[294] At that time, Scoby worked as a stenographer, but the 1910 Census shows her living off her own income.[295] Around 1911, she sold the property to Estelle Oliver.[296]

The Oliver family—including 31-year-old Estelle, husband Frank, daughter Harriet, and mother Harriet Curtis—moved to 707 53rd Street from Oakland's Fruitvale district. Oliver sold the property at 707 53rd Street to Milton D. Horner in 1919 or 1920.[297] By 1920, the Olivers lived in Washington state.

In 1920, 34-year-old Milton Horner lived at 707 53rd Street with his wife Elsie, their son Howard, and Milton's mother Mary.[298] The house was mortgaged. Milton worked as the manager of a wholesale plumbing supplies company. By 1930, Mary no longer lived with the Horner family, and Milton and Elsie had another son, John Van Cleve.[299] Milton continued to manage the plumbing supplies company. At that time the house was valued at $5,000. Two rear auxiliary buildings, a one-story building and a two-story building, are shown in Sanborn Fire Insurance Maps dating from 1930, though neither appear extant today. Horner continued to live at 707 53rd Street and worked for Oakland Plumbing Supply Co. through World War II.[300] The building was listed as vacant in the 1967 Oakland city directory, but was re-occupied in 1969 by Johnathon L. Moore. [301]

Current Historic Status

707 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of C2+, indicating that the building is of secondary importance. It is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs or have a rating of C or higher are Potential Designated Historic Properties, or PDHPs.[302]

Evaluation for the California Register

707 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local,

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[293] 1908 Block Book.
[294] 1900 Census.
[295] 1910 Census.
[296] 1911 Block Book.
[297] 1919, 1920 Block Books.
[298] 1920 Census.
[299] 1930 Census.
[300] *U.S., World War II Draft Registration Cards, 1942* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2010.
[301] Polk's Oakland City Directory 1967
[302] "City of Oakland Historic Preservation Programs."

state, or national context (Criterion 2). Owners and occupants were working- and middle-class people and little information was found on them in local and online archives that would indicate any level of significant contributions. Though quite intact, the building is also not significant for its architecture and it does not possess high artistic values. The architect was William A. Walker, but little information was found about his career and he cannot be considered a master architect (Criterion 3).[303]

707 53rd Street retains integrity of location, design, materials, workmanship, and feeling as an early 20th-century residence. The building lacks integrity of setting, as a the large modern Children's Hospital Outpatient Building has been constructed very close to the subject property. The building also lacks integrity of association as part of a dense residential neighborhood, as it is located on a block-face that is, for the most part, occupied by a large parking garage. This block lacks the intact block-face and visual cohesiveness that characterize the rest of the 55th and Dover Residential District.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

707 53rd Street as a Historical Resource Under CEQA

707 53rd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 707 53rd Street does not appear to be a historic resource under CEQA.

[303] 707 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

N. 715 53RD STREET

Figure 68. 715 53rd Street, looking south.
Source: Page & Turnbull, April 2008.

Description

Built ca. 1906, 715 53rd Street is a one-story, wood-frame residence designed in the Craftsman style **(Figure 68)**. The rectangular-plan building, clad in wood clapboard siding, is capped by a hip roof clad in asphalt shingles. A gable dormer at the front of the roof features a multi-light wood-sash window. The foundation is concrete. The primary façade faces north. Typical fenestration consists of fixed and casement wood-sash windows. The primary entrance features a paneled, partially-glazed wood door. Architectural and site features include concrete steps, a recessed corner porch, exposed purlins and rafter tails, and a brick chimney. The building appears to be in good condition. Two one-story auxiliary buildings are shown to the rear of the house in Sanborn Fire Insurance Maps dating from 1930.

Historic Context

J. V. Galindo bought the property at 715 53rd Street ca. 1906. Shortly afterwards, a house was constructed on the property.[304] Census records from 1910 show 30-year-old J. Vincent Galindo living at 715 53rd Street with his wife Ellen and their young son J. Vincent.[305] Galindo managed the Galindo estate, which was likely the grand family house at 5401 Telegraph Avenue.[306] Galindo died in 1914 or 1915, and ownership of 715 53rd Street passed to Ellen I. Galindo. In 1920, the house was owned free of mortgages.[307] It was valued at $7,000 in 1930.[308] At that time Ellen Galindo's son Vincent and

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[304] 1906 Block Book.
[305] 1910 Census.
[306] Ibid.; "Danced in the Barn," *Oakland Tribune*, 10 February 1900, 6.
[307] 1920 Census.
[308] 1930 Census.

his wife Doris lived with her, along with Ellen's sister Martha Manning. Doris Galindo worked as a saleslady at a dry goods store. Ellen and Martha still resided at 715 53rd St in 1940, at which time the home was valued at $3500.[309]

Current Historic Status

715 53rd Street has an Oakland Cultural Heritage Survey (OCHS) rating of Dc2+, indicating that the building is of minor importance. Its contingency rating of "c" indicates that the building rating may be upgraded in the future if inappropriate alterations are reversed. The building is a contributor to the 55th and Dover Residential District, an Area of Secondary Importance (ASI). Buildings that contribute to ASIs are Potential Designated Historic Properties, or PDHPs.[310]

Evaluation for the California Register

715 53rd Street does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working-class people and little information was found on them in local and online archives that would indicate any level of significant contributions. Though quite intact, the simple Craftsman style building is also not significant for its architecture and it does not possess high artistic values. The builder is unknown and cannot be considered a master architect (Criterion 3).[311]

715 53rd Street retains a high degree of integrity of location, design, materials, workmanship, and feeling as an early 20th-century residence. The building lacks integrity of setting, as the large modern Children's Hospital Outpatient Building has been constructed immediately behind to the subject property and the hospital's multi-story parking garage was constructed immediately adjacent to the west. The building lacks integrity of association as part of a dense residential neighborhood, as it is located on a block-face that is, for the most part, occupied by the large parking garage. This block lacks the intact block-face and visual cohesiveness that characterize the rest of the 55th and Dover Residential District.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in an ASI district and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

715 53rd Street as a Historical Resource Under CEQA

715 53rd Street is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 715 53rd Street does not appear to be a historic resource under CEQA.

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[309] 1940 census.
[310] "City of Oakland Historic Preservation Programs."
[311] 715 53rd Street was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

O. 5204 MARTIN LUTHER KING JR. WAY

Figure 69. 5204 Martin Luther King Jr. Way, looking east.
Source: Page & Turnbull, May 2013.

Description

Estimated to have been built during the 1920s, 5204 Martin Luther King Jr. Way is a two-story, wood-frame residence set over an integral garage. It is designed in the Mediterranean Revival style **(Figure 69)**. The rectangular-plan building, clad in smooth stucco, is capped by a cross-gable roof clad with red asphalt shingles and red tile decoration at the gable ends. The primary façade faces west. The façade fenestration consists of arched iron frame windows. The sides and rear feature double-hung wood-sash windows with ogee lugs. The primary entrance features a flush wood door within a small entry landing atop concrete steps. The foundation is not visible. Architectural and site features include molded rosette motifs above the façade windows and garage, spiral engaged columns at the living room window, iron balconettes, and two chimneys, one of which has a molded crown. The building appears to be in good condition.

Historic Context

Jacob Pederson acquired the parcel where 5204 Martin Luther King Jr. Way stands in 1910. A year later he was operating a grocery store out of two single-story abutting frame buildings at the very front of the lot, while living a few blocks away at 993 54th Street. He also maintained a small shed at the southeast corner of the parcel. By 1921 Pederson had relocated to 5206 Grove Street, the address historically associated with the larger of the two grocery buildings.[312]

In 1922, he sold the parcel to H.C. Hagenson, who shortly thereafter constructed the extant two-story residence at the back of the lot where the small shed once stood. Hagenson, in turn, sold or leased the residence to Joseph Bossola in 1935.[313] Bossola, born in Italy in 1880, was a naturalized

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312 Ancestry.com. *U.S. City Directories, 1821-1989.* Provo, UT, USA: Ancestry.com Operations, Inc., 2011. Website accessed on June 26, 2013.
313 Polk's City Directory, Oakland, 1935.

citizen, who worked for the City of Oakland as a street sweeper.[314] Bossola shared the residence with his spouse, Theresa, a seamstress, and their son Lawrence. Lawrence was born in California in 1913, and went on to enlist in 1942. Joseph and Theresa continued to reside at 5204 Grove Street until Joseph's death in 1968.[315]

The grocery store continued to operate into the 1950s. By 1951, the larger of the two grocery buildings had been converted to storage, but the smaller abutting structure retained its original use. A new shed was also constructed during the 1940s at the northeast corner next to the residence, bringing the total number of building on the parcel to four. The dwelling is the only extant building on the parcel today. It is likely that the original store buildings and the adjacent home on the corner lot (5202 Grove Street) were demolished during the late 1960s when the Grove-Shafter Freeway (State Route 24) was built, and Grove Street and 52nd Street were widened to accommodate increasing traffic and the expanding BART system.

Current Historic Status

5204 Martin Luther King Jr. Way was given an Oakland Cultural Heritage Survey (OCHS) rating of D2+, indicating that it is a building of secondary importance that is located in the 55th and Dover Residential District, an Area of Secondary Importance (ASI), and contributes to that district. However, given the property's complete loss of integrity of setting, feeling, and association, the rating is no longer considered for evaluation purposes.

Evaluation for the California Register

5204 Martin Luther King Jr. Way does not appear to be significant under any California Register criteria. It is not directly associated with important broader development trends or other specific events in the Temescal neighborhood (Criterion 1), nor is it associated with persons significant within a local, state, or national context (Criterion 2). Owners and occupants were working class people and little information was found on them in local and online archives that would indicate any level of significant contributions. Though quite intact, the simple Craftsman style building is also not significant for its architecture and it does not possess high artistic values. The builder is unknown and cannot be considered a master architect (Criterion 3).[316]

5204 Martin Luther King Jr. Way retains integrity of location, design, materials, and workmanship as a 1920s residence. However, it lacks integrity of setting, feeling, and association due to the surrounding development, the widening of both 52nd Street and Martin Luther King Jr. Way, and the loss of associated buildings on the parcel.

Evaluation for Designation as a City of Oakland Designated Historic Property

Page & Turnbull's intensive survey and evaluation assigns this building a rating of **C2+**, meaning that it is a building of secondary importance, located in the 55th and Dover Residential District (an ASI)

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[314] Ancestry.com. *U.S., World War II Draft Registration Cards, 1942* [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2010.
[315] Ancestry.com. *California, Death Index, 1940-1997* [database on-line]. Provo, UT, USA: Ancestry.com Operations Inc, 2000.
[316] 5204 Martin Luther King Jr. Way was not evaluated for eligibility under Criterion 4, which is beyond the scope of this report since "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources.

and is recorded as a contributor to that district. Evaluative considerations for each of the fourteen criteria are included on the Evaluation Worksheet for this building found in the Appendix.

5204 Martin Luther King Jr. Way as a Historical Resource Under CEQA

5204 Martin Luther King Jr. Way is not eligible for listing in the California Register and received a "C" rating based on City of Oakland Designated Historic Property evaluation criteria. Therefore, 688 52nd Street does not appear to be a historic resource under CEQA.

XII. CONCLUSION

Page & Turnbull evaluated the Children's Hospital buildings and adjacent residential and commercial buildings to arrive at two findings which determine whether they are considered historic resources for the purposes of CEQA:

1. Individual rating of A or B under the Oakland Designated Historic Property Criteria for Eligibility; and
2. Eligibility for listing as an individual resource or historic district (hospital complex only) in the California Register.

The A/B Wing (Baby Hospital) of the Children's Hospital appears to be significant for its role in providing medical care and services to children and as a teaching hospital (California Register Criterion 1) as well as for its architectural merit (California Register Criterion 3). The A/B Wing was one of the earliest purpose-built hospitals for children in the East Bay, and is a building that embodies the distinctive characteristics of an early 20th-century hospital. Designed in 1926 by Edward W. Cannon, the reinforced concrete building is designed in a Northern Italian Renaissance style that features rich architectural detailing. The A/B Wing (Baby Hospital) retains integrity of location, workmanship, and association. However, integrity of design and materials is moderate and it lacks integrity of setting and feeling. Consequently, the A/B Wing (Baby Hospital) is not eligible for listing in the California Register of Historical Resources. However, based on a detailed evaluation for Landmark Eligibility, the A/B Wing (Baby Hospital) was assigned an Oakland Designated Historic Property rating of **B3** and is therefore considered a historic resource for the purposes of CEQA.

The B/C Wing, Bruce Lyon Memorial Research Center, and the Ford Diagnostic and Treatment Center at the Children's Hospital do not appear to possess sufficient significance or retain integrity to be eligible for listing in the California Register and were assigned Oakland Designated Historic Property ratings of **C3**. None of these buildings are considered historic resources under CEQA.

The A/B Wing and B/C Wing, when considered together as one building, are not eligible for listing in the California Register due to insufficient integrity. The A/B Wing and B/C Wing, when considered together as one building, are not eligible for listing in the California Register due to insufficient integrity. Based on a detailed evaluation for Landmark Eligibility, the A/B Wing and B/C Wing together are assigned an Oakland Designated Historic Property of **C3**. This means that they do not qualify as a historic resource under CEQA.

The magnolia tree to the east of the B/C Wing does not qualify as a historic resource under CEQA.

The other properties in the hospital complex are less than forty-five years old and do not qualify as historic resources according to CEQA. These buildings include the Cardiac Catheterization Lab, Central Plant/West Site Plant, Patient Tower, Cafeteria, Helistop, Outpatient Center, and parking garage.

None of the adjacent fourteen residential and commercial properties that were evaluated appear to be significant as individual historical resources under the criteria for eligibility to the California Register of Historical Resources. Page & Turnbull was not tasked with evaluating the district for California Register eligibility; however, based on its current status as an ASI and reconnaissance surveys and research on fourteen properties, this district does not appear to possess sufficiently significant historical context or visual themes to qualify for listing in the California Register. One property was not age-eligible and was therefore not evaluated. Nine properties were assigned Oakland Designated Historic Property ratings of C2+ and four properties were assigned ratings of D2+.

In sum, none of the buildings on the Children's Hospital site, nor the residential and commercial buildings in the vicinity, appear to qualify as historic resources under CEQA.

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F. OTHER

Dedication plaque at the base of the magnolia tree.

Stone and Mulloy Rendering, Children's Hospital, Oakland, n.d.

XIV. APPENDICES

A. OAKLAND GENERAL PLAN – HISTORIC PRESERVATION ELEMENT – APPENDIX D (SEPTEMBER 1993)

B. CITY OF OAKLAND EVALUATION SHEETS FOR LANDMARK ELIGIBILITY

APPENDIX D: LANDMARKS PRESERVATION ADVISORY BOARD GUIDELINES FOR DETERMINATION OF LANDMARK ELIGIBILITY

(Appendix 3 of Landmarks Preservation Advisory Board's Rules of Procedure)

APPENDIX 3: GUIDELINES FOR DETERMINATION OF ELIGIBILITY FOR LANDMARK DESIGNATION

These guidelines are for the purpose of interpreting the landmark eligibility criteria at Section 2002(p) of the Zoning Regulations. The guidelines are expressed as the attached Evaluation Criteria and Ratings for Landmark Eligibility and the accompanying Evaluation Sheet and Evaluation Tally Sheet.

In order to determine whether a property is eligible as a landmark, the property is rated on the Evaluation Sheet for each of the fourteen evaluation criteria shown on the Sheet and defined in the Evaluation Criteria and Ratings.

The Evaluation Sheet ratings are next converted to numerical scores on the Evaluation Tally Sheet and added together for a total score. The total scores are then converted into an overall rating -- A, B, C, or D.

Properties receiving A or B ratings are considered eligible as landmarks.

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LPAB FORM 3.1

City of Oakland -- Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

Address____________________

Name____________________

A.	ARCHITECTURE				
1.	Exterior/Design	E	VG	G	FP
2.	Interior	E	VG	G	FP
3.	Construction	E	VG	G	FP
4.	Designer/Builder	E	VG	G	FP
5.	Style/Type	E	VG	G	FP
B.	HISTORY				
6.	Person/Organization	E	VG	G	FP
7.	Event	E	VG	G	FP
8.	Patterns	E	VG	G	FP
9.	Age	E	VG	G	FP
10.	Site	E	VG	G	FP
C.	CONTEXT				
11.	Continuity	E	VG	G	FP
12.	Familiarity	E	VG	G	FP
D.	INTEGRITY				
13.	Condition	E	VG	G	FP
14.	Exterior Alterations	E	VG	G	FP

Evaluated by__________ Date__________

STATUS

Rating:__________

City Landmark Eligibility: ☐ Eligible ☐ Not eligible

National Register Status: ☐ Listed ☐ In process

☐ Determined eligible ☐ Appears eligible

☐ Appears ineligible

Site of Opportunity ☐

This evaluation sheet was accepted by the Landmarks Preservation Advisory Board at its meeting of____________________.
(Date)

Attest:____________________
(Secretary)

LPAB FORM 3.2

City of Oakland -- Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

Address________________________________

Name________________________________

12	6	3	0	1. Exterior/Design		
6	3	2	0	2. Interior		
6	3	2	0	3. Construction		
4	2	1	0	4. Designer/Builder		
6	3	2	0	5. Style/Type		
				A. ARCHITECTURE TOTAL		(max. 26)
30	15	8	0	6. Person/Organization		
30	15	8	0	7. Event		
18	9	5	0	8. Patterns		
8	4	2	0	9. Age		
4	2	1	0	10. Site		
				B. HISTORY TOTAL		(max. 60)
4	2	1	0	11. Continuity		
14	7	4	0	12. Familiarity		
				C. CONTEXT TOTAL		(max. 14)
PRELIMINARY TOTAL (Sum of A, B and C)						(max. 100)
-0	-3%	-5%	-10%	13. Condition (From A,B and C total)		
-0	-25%	-50%	-75%	14. Exterior Alterations (From A,B and C total excluding 2)		
				D. INTEGRITY		
ADJUSTED TOTAL (Preliminary total minus Integrity)						

STATUS/RATING

Present Rating (Adjusted Total): ☐ A(35+) ☐ B(23-34) ☐ C(11-22) ☐ D(0-10)

Contingency Rating (Preliminary Total): ☐ A(35+) ☐ B(23-34) ☐ C(11-22) ☐ D(0-10)

City Landmark Eligibility: ☐ Eligible (Present Rating is A or B)
☐ Not eligible

F-116 3EVALTAL.CB

CITY OF OAKLAND—LANDMARKS PRESERVATION ADVISORY BOARD
EVALUATION CRITERIA AND RATINGS
FOR LANDMARK ELIGIBILITY

GENERAL NOTE: IF A PROPERTY HAS EXPERIENCED KNOWN LOSSES OF INTEGRITY (CRITERIA GROUP D), CRITERIA GROUPS A, B AND C SHOULD NORMALLY BE APPLIED TO THE PROPERTY AS IT EXISTED BEFORE THOSE LOSSES WERE SUSTAINED. CRITERIA GROUP D SHOULD THEN BE APPLIED TO THE PROPERTY.

CRITERION	RATINGS	COMMENTS AND GUIDELINES
A. ARCHITECTURE		
1. EXTERIOR/DESIGN QUALITY OF FORM, COMPOSITION, DETAILING, AND ORNAMENT MEASURED IN PART ON ORIGINALITY, ARTISTIC MERIT, CRAFTSMANSHIP, SENSITIVITY TO SURROUNDINGS AND OVERALL VISUAL QUALITY.	E EXCELLENT VG VERY GOOD G GOOD FP UNDISTINGUISHED	APPLIES TO NATURAL FEATURES AS WELL AS TO MAN-MADE FEATURES. A "G" RATING IS APPROPRIATE FOR PROPERTIES WHICH HAVE ANY CLEARLY IDENTIFIABLE VISUAL OR DESIGN VALUE. AN "E" RATING IS APPROPRIATE FOR PROPERTIES WHICH BASED ON EXTERIOR VISUAL QUALITY ALONE APPEAR ELIGIBLE FOR OAKLAND LANDMARK DESIGNATIONS.
2. INTERIOR DESIGN QUALITY OF INTERIOR ARRANGEMENT, FINISH, CRAFTSMANSHIP AND/OR DETAIL OR ASSOCIATION WITH A PERSON, GROUP, ORGANIZATION OR INSTITUTION USING THE	E EXCELLENT VG VERY GOOD G GOOD FP UNDISTINGUISHED	IN MOST USES, THIS CRITERION WILL BE APPLIED ONLY TO INTERIORS WHICH ARE ACCESSIBLE TO THE PUBLIC. UNLIKE THE CASE OF EXTERIORS, THIS CRITERION SHOULD BE APPLIED TO INTERIORS <u>AS THEY PRESENTLY EXIST</u>, REGARDLESS OF ALTERATIONS.
3. CONSTRUCTION SIGNIFICANCE AS EXAMPLE OF A PARTICULAR STRUCTURAL MATERIAL, SURFACE MATERIAL OR METHOD OF CONSTRUCTION.	E ESPECIALLY FINE OR VERY EARLY EXAMPLE IF FEW SURVIVE VG ESPECIALLY FINE OR VERY EARLY EXAMPLE IF MANY SURVIVE; GOOD EXAMPLE IF FEW SURVIVE. G GOOD EXAMPLE IF MANY SURVIVE OF ANY MATERIAL OR METHOD NOT GENERALLY IN CURRENT USE (SUCH AS BRICK MASONRY OR BALLOOM FRAMING) OR OF A HIGHLY DURABLE METHOD OF CONSTRUCTION DURABLE METHOD OF CONSTRUCTION (STEEL FRAME, REINFORCED CONCRETE, ETC.) FP OF NO PARTICULAR INTEREST.	EXAMPLES OF "ESPECIALLY FINE" CONSTRUCTION METHODS OR STRUCTURAL MATERIALS INCLUDE THOSE WHICH SUCCESSFULLY ADDRESS CHALLENGING STRUCTURAL PROBLEMS, OR WHICH ARE TREATED AS VISIBLE DESIGN ELEMENTS THAT CONTRIBUTE SIGNIFICANTLY TO THE FEATURE'S OVERALL DESIGN QUALITY, OR WHICH EXHIBIT FINE CRAFTSMANSHIP. SURFACE MATERIALS SHOULD BE TREATED UNDER THIS CRITERION ONLY ACCORDING TO THEIR TYPE AND ACCORDING TO THE LEVEL OF CRAFTSMANSHIP WHICH THEY REPRESENT. THE CONTRIBUTION OF SURFACE MATERIALS TO A FEATURE'S DESIGN QUALITY SHOULD BE TREATED IN CRITERION 1. (EXTERIOR/DESIGN) EXAMPLES OF "ESPECIALLY FINE" SURFACE MATERIALS INCLUDE STONE (GRANITE, MARBLE) AND POLYCHROME TERRA COTTA.

CRITERION	RATINGS	COMMENTS AND GUIDELINES
4. DESIGNER/BUILDER DESIGNED OR BUILT BY AN ARCHITECT, ENGINEER, BUILDER, ARTIST, OR OTHER DESIGNER WHO HAS MADE A SIGNIFICANT CONTRIBUTION TO THE COMMUNITY, STATE, OR NATION.	E DESIGNER OF PRIMARY IMPORTANCE. VG DESIGNER OF SECONDARY IMPORTANCE. G DESIGNER OF TERTIARY IMPORTANCE. FP DESIGNER UNKNOWN OR OF NO PARTICULAR INTEREST.	NORMALLY, AN ESPECIALLY ACTIVE DESIGNER WILL BE RATED AT LEAST "G".
5. STYLE/TYPE SIGNIFICANCE AS AN EXAMPLE OF A PARTICULAR TYPE, STYLE OR CONVENTION.	E ESPECIALLY FINE OR VERY EARLY EXAMPLE IF FEW SURVIVE. VG ESPECIALLY FINE OR VERY EARLY EXAMPLE IF MANY SURVIVE; GOOD EXAMPLE IF FEW SURVIVE. G GOOD EXAMPLE OF ANY TYPE, STYLE OR RENT USE. FP OF NO PARTICULAR INTEREST.	A "GOOD EXAMPLE" SHOULD GENERALLY EXHIBIT MOST OF THE ARCHTYPICAL CHARACTERISTICS OF THE TYPE, STYLE OR CONVENTION THE EXAMPLE IS INTENDED TO REPRESENT.
B. HISTORY/ASSOCIATION		
6. PERSON/ORGANIZATION ASSOCIATED WITH THE LIFE OR ACTIVITIES OF A PERSON, GROUP, ORGANIZATION, OR INSTITUTION THAT HAS MADE A SIGNIFICANT CONTRIBUTION TO THE COMMUNITY, STATE OR NATION.	E PERSON/ORGANIZATION OF PRIMARY IMPORTANCE INTIMATELY CONNECTED WITH THE PROPERTY. VG PERSON/ORGANIZATION OF PRIMARY IMPORTANCE LOOSELY CONNECTED, OR PERSON/ORGANIZATION OF SECONDARY IMPORTANCE INTIMATELY CONNECTED. G PERSON/ORGANIZATION OF SECONDARY IMPORTANCE LOOSELY CONNECTED, OR PERSON/ORGANIZATION OF TERTIARY IMPORTANCE INTIMATELY CONNECTED. FP PERSON/ORGANIZATION OF TERTIARY IMPORTANCE LOOSELY CONNECTED OR NO CONNECTION WITH PERSON/ORGANIZATION OF IMPORTANCE.	THE SIGNIFICANCE OF THE PERSON, GROUP, ORGANIZATION OR INSTITUTION MUST ITSELF BE ESTABLISHED BEFORE THIS CRITERION IS APPLIED. SUCH SIGNIFICANCE MAY BE AT EITHER THE LOCAL, STATE OR NATIONAL/INTERNATIONAL LEVELS. "INTIMATELY CONNECTED" WILL OFTEN MEAN THAT THE FEATURE WAS INTIMATELY ASSOCIATED WITH AN IMPORTANT PERIOD IN THE LIFE OR ACTIVITIES OF THE PERSON, GROUP, ORGANIZATION OR INSTITUTION. A PERSON/ORGANIZATION OF PRIMARY IMPORTANCE AT THE LOCAL LEVEL WILL HAVE PLAYED A DECISIVE AND FAR REACHING ROLE IN THE DEVELOPMENT OF OAKLAND AS A COMMUNITY (EXAMPLES: MAYOR FRANK MOTT, CENTRAL PACIFIC RAILROAD.) A PERSON/ORGANIZATION OF SECONDARY IMPORTANCE AT THE LOCAL LEVEL WILL HAVE PLAYED A MAJOR OR LEADING (BUT NOT DECISIVE) ROLE IN THE DEVELOPMENT OF OAKLAND AS A COMMUNITY OR A DECISIVE ROLE IN THE DEVELOPMENT OF A PARTICULAR NEIGHBORHOOD OR OF A PARTICULAR ETHNIC GROUP OR SEGMENT OF THE COMMUNITY (EXAMPLES: H.C. CAPWELL, JAMES LARUE, LEW HING, REALTY SYNDICATE). A PERSON/ORGANIZATION OF TERTIARY IMPORTANCE AT THE LOCAL LEVEL WILL HAVE PLAYED A PROMINENT ROLE (BUT NOT A REAL LEADERSHIP ROLE) IN THE DEVELOPMENT OF A PARTICULAR NEIGHBORHOOD OR OF A PARTICULAR ETHNIC GROUP OR SEGMENT OF THE COMMUNITY (EXAMPLES: JOHN NICHOLL CHARLES HESSEMAN). THE STATE AND NATIONAL/INTERNATIONAL LEVELS ARE TREATED SIMILARLY. IF THE PROPERTY HAS BEEN SIGNIFICANTLY ALTERED SINCE THE TIME OF ITS ASSOCIATION WITH THE PERSON/ORGANIZATION AND IF SUCH ALTERATION IS NOT REFLECTED IN CRITERIA GROUP D, THEN THE PERSON/ORGANIZATION WILL BE CONSIDERED TO BE ONLY "LOOSELY CONNECTED" WITH THE PROPERTY.

CRITERION	RATINGS	COMMENTS AND GUIDELINES
7. EVENT ASSOCIATED WITH AN EVENT THAT HAS MADE A SIGNIFICANT CONTRIBUTION TO THE COMMUNITY, STATE OR NATION.	E EVENT OF PRIMARY IMPORTANCE INTIMATELY CONNECTED WITH THE PROPERTY. VG EVENT OF PRIMARY IMPORTANCE LOOSELY CONNECTED, OR EVENT OF SECONDARY IMPORTANCE INTIMATELY CONNECTED. G EVENT OF SECONDARY IMPORTANCE LOOSELY CONNECTED, OR EVENT OF TERTIARY IMPORTANCE INTIMATELY CONNECTED. FP EVENT OF TERTIARY IMPORTANCE LOOSELY CONNECTED OR NO CONNECTIONS WITH EVENT OF IMPORTANCE.	SEE COMMENTS FOR CRITERION 6 (PERSON/ORGANIZATION).
8. PATTERNS ASSOCIATED WITH AND EFFECTIVELY ILLUSTRATIVE OF BROAD PATTERNS OF CULTURAL, SOCIAL, POLITICAL, ECONOMIC, OR INDUSTRIAL HISTORY, OR OF THE DEVELOPMENT OF THE CITY, OR OF DISTINCT GEOGRAPHIC REGIONS OR ETHNIC GROUPS, OR OF A PARTICULAR WELL-DEFINED ERA.	E PATTERNS OF PRIMARY IMPORTANCE INTIMATELY CONNECTED WITH THE PROPERTY. VG PATTERNS OF PRIMARY IMPORTANCE LOOSELY CONNECTED, OR PATTERNS OF SECONDARY IMPORTANCE INTIMATELY CONNECTED. G PATTERNS OF SECONDARY IMPORTANCE LOOSELY CONNECTED, OR PATTERNS OF TERTIARY IMPORTANCE INTIMATELY CONNECTED. FP PATTERNS OF TERTIARY IMPORTANCE LOOSELY CONNECTED OR NO CONNECTION WITH PATTERNS OF IMPORTANCE.	A HELPFUL MEASURE OF THIS CRITERION IS TO CONSIDER HOW USEFUL THE PROPERTY WOULD BE FOR THE TEACHING OF CULTURAL HISTORY. A PROPERTY IS NORMALLY "INTIMATELY CONNECTED" WITH A PATTERN IF THE PROPERTY EXHIBITS THE ESSENCE OF THE PATTERN. A PROPERTY IS NORMALLY "LOOSELY CONNECTED" WITH A PATTERN IF THE PROPERTY ONLY EXHIBITS THE INFLUENCE OF THE PATTERN. A PATTERN WILL NORMALLY BE CONSIDERED "INTIMATELY CONNECTED" WITH THE PROPERTY IF ONLY A FEW EXAMPLES ASSOCIATED WITH THE PATTERN SURVIVE. "INTIMATE" AND "LOOSE" CONNECTIONS FOR SIGNIFICANTLY ALTERED PROPERTIES ARE TREATED THE SAME WAY AS FOR CRITERION 6 (PERSON/ORGANIZATION). SEE ALSO OTHER COMMENTS FOR CRITERION 6 (PERSON/ORGANIZATION).
9. AGE COMPARATIVELY OLD IN RELATION TO DEVELOPMENT OF THE CITY.	E ESTABLISHED PRIOR TO 1869. VG ESTABLISHED BETWEEN 1869 AND APRIL 1906. G ESTABLISHED BETWEEN MAY 1906 AND 1945. FP ESTABLISHED SINCE 1945.	THE WESTERN TERMINUS OF THE TRANSCONTINENTAL RAILROAD WAS COMPLETED IN OAKLAND IN 1869, INAUGURATING AN IMPORTANT PERIOD OF RAPID URBAN DEVELOPMENT. THE 1906 EARTHQUAKE HELPED STIMULATE ANOTHER IMPORTANT PERIOD OF RAPID DEVELOPMENT IN OAKLAND. AT THE END OF WORLD WAR II, URBAN DEVELOPMENT BEGAN TO SHIFT FROM CENTRAL CITIES LIKE OAKLAND TO THE SUBURBS. IF THE PROPERTY HAS BEEN SIGNIFICANTLY ALTERED SINCE THE TIME OF ITS ORIGINAL CONSTRUCTION OR ESTABLISHMENT, USE THE ORIGINAL DATE IF THE NATURE OF THE ORIGINAL DESIGN IS STILL RECOGNIZABLE (E.G. ROOF SHAPE OR AT LEAST SOME ELEMENTS OF THE ORIGINAL FACADE COMPOSITION); USE THE DATE OF THE ALTERATION IF THE NATURE OF THE ORIGINAL DESIGN IS NOT RECOGNIZABLE.

CRITERION	RATINGS	COMMENTS AND GUIDELINES
10. SITE RELATION OF FEATURE TO ITS ORIGINAL SITE AND NEIGHBORHOOD.	E HAS NOT BEEN MOVED. G HAS BEEN MOVED WITHIN THE BOUNDARIES OF ITS ORIGINAL SITE. F HAS BEEN RELOCATED TO A NEW SITE IN THE SAME NEIGHBORHOOD AS THE ORIGINAL SITE. P HAS BEEN RELOCATED TO A NEW SITE IN A DIFFERENT NEIGHBORHOOD.	•"ORIGINAL SITE" MEANS THE SITE OCCUPIED BY THE FEATURE AT THE TIME THE FEATURE ACHIEVED SIGNIFICANCE, WHICH IN SOME CASES MAY HAVE BEEN AFTER THE FEATURE WAS CONSTRUCTED OR ESTABLISHED.
C. <u>CONTEXT</u>		
11. CONTINUITY CONTRIBUTES TO THE VISUAL, HISTORIC OR OTHER ENVIRONMENTAL CONTINUITY OR CHARACTER OF THE STREET OR AREA.	E HELPS ESTABLISH THE CHARACTER OF AN AREA OF PRIMARY IMPORTANCE OR CONSTITUTES A DISTRICT. VG MAINTAINS THE CHARACTER OF AN AREA OF PRIMARY IMPORTANCE OR HELPS ESTABLISH THE CHARACTER OF AN AREA OF SECONDARY IMPORTANCE OR CONSTITUTES A FEATURE GROUP. G COMPATIBLE WITH THE CHARACTER OF AN AREA PRIMARY IMPORTANCE OR MAINTAINS THE CHARACTER OF AN AREA OF SECONDARY IMPORTANCE. FP INCOMPATIBLE WITH AN AREA OF PRIMARY IMPORTANCE OR NOT LOCATED IN AN AREA OF PRIMARY OR SECONDARY IMPORTANCE.	"AREA OF PRIMARY OR SECONDARY IMPORTANCE" GENERALLY MEANS A DISTRICT, GROUP OF PROPERTIES, OR OTHER AREA NOTABLE ENOUGH TO WARRANT SPECIAL RECOGNITION, SUCH AS INCLUSION IN THE CITY'S S-7 PRESERVATION COMBINING ZONE. AREAS OF PRIMARY IMPORTANCE ARE LIMITED TO POTENTIAL NATIONAL REGISTER DISTRICTS. IF THE FEATURE HAS BEEN REMOVED (I.E., GIVEN A "P" RATING UNDER CRITERION 14), AND THE PROPERTY HAS THEREFORE BECOME ONLY A "SITE", CONTINUITY SHOULD BE EVALUATED BY IMAGINING THE FEATURE RESTORED TO ITS SITE, BUT IN THE EXISTING SURROUNDINGS.
12. FAMILIARITY PROMINENCE OR FAMILIARITY WITHIN THE NEIGHBORHOOD, CITY OR REGION.	E A FEATURE WHICH MAY BE TAKEN AS SYMBOL FOR THE CITY OR REGION AS A WHOLE. VG A CONSPICUOUS AND FAMILIAR FEATURE IN THE CONTEXT OF THE CITY OR REGION. G A CONSPICUOUS AND FAMILIAR FEATURE IN THE CONTEXT OF THE NEIGHBORHOOD. FP NOT PARTICULARLY CONSPICUOUS OR FAMILIAR.	A HELPFUL MEASURE OF THIS CRITERION IS TO CONSIDER WHETHER A TYPICAL RESIDENT OF THE NEIGHBORHOOD, CITY OR REGION WOULD NOTICE THE FEATURE AND REMEMBER IT. IF THE FEATURE HAS BEEN REMOVED, THIS CRITERION SHOULD BE EVALUATED BY CONSIDERING THE FEATURE'S ROLE (IF ANY) AS A "LANDMARK" PRIOR TO ITS REMOVAL.
D. <u>INTEGRITY</u>		
13. CONDITION EXTENT TO WHICH THE FEATURE HAS EXPERIENCED DETERIORATION.	E NO APPARENT SURFACE WEAR OR STRUCTURAL PROBLEMS. G EXHIBITS ONLY MINOR SURFACE WEAR. F EXHIBITS CONSIDERABLE SURFACE WEAR <u>OR</u> SIGNIFICANT STRUCTURAL PROBLEMS. P EXHIBITS CONSIDERABLE SURFACE WEAR <u>AND</u> SIGNIFICANT STRUCTURAL PROBLEMS.	"MINOR SURFACE WEAR" GENERALLY MEANS THAT NO REPLACEMENT OF DESIGN ELEMENTS DUE TO DETERIORATION IS REQUIED. "CONSIDERABLE SURFACE WEAR" GENERALLY MEANS THAT SOME DESIGN ELEMENTS HAVE DETERIORATED TO SUCH AN EXTENT THAT THEY MUST BE REPLACED. "SIGNIFICANT STRUCTURAL PROBLEMS" WILL GENERALLY BE ASSOCIATED WITH SAGGING FLOOR LINES, OUT-OF-PLUMB WALLS AND FIRE DAMAGE.

F-HPE2 4NHPCOLD.CB

CRITERION	RATINGS	COMMENTS AND GUIDELINES
14. EXTERIOR ALTERATIONS DEGREE OF ALTERATION TO IMPORTANT EXTERIOR MATERIALS AND DESIGN FEATURES.	E NO CHANGES OR VERY MINOR ALTERATIONS WHICH DO NOT CHANGE THE OVERALL CHARACTER. G MINOR CHANGES TO OVERALL CHARACTER. F MAJOR CHANGES TO OVERALL CHARACTER. P FEATURE HAS BEEN REMOVED OR DEMOLISHED.	

F- 1EVALUATE.CB

AUGUST 6, 1987

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street

Name: Bruce Lyon Memorial Research Center

A. ARCHITECTURE

1.	**Exterior/Design:** International style details at windows, vestibule, cladding	**E**	**VG**	**G**	**FP**
2.	**Interior:** not evaluated	**E**	**VG**	**G**	**FP**
3.	**Construction:** steel frame amd concrete construction with brick cladding	**E**	**VG**	**G**	**FP**
4.	**Designer/Builder:** Stone, Marraccini and Patterson, not sig. example	**E**	**VG**	**G**	**FP**
5.	**Style/Type:** good exprsn. of Intl. style at 1st story, expression reduced by addtn.	**E**	**VG**	**G**	**FP**

B. HISTORY

6.	**Person/Organization:** assoc. with expanding scope of Hosp. mission, CHORI	**E**	**VG**	**G**	**FP**
7.	**Event:** no assoc. with sig. event	**E**	**VG**	**G**	**FP**
8.	**Patterns:** assoc. with shifts in hosp. design and mission	**E**	**VG**	**G**	**FP**
9.	**Age:** built 1958	**E**	**VG**	**G**	**FP**
10.	**Site:** not moved	**E**	**VG**	**G**	**FP**

C. CONTEXT

11.	**Continuity:** not in API or ASI but maintains char. or area (hosp. complex)	**E**	**VG**	**G**	**FP**
12.	**Familiarity:** orig. prime. fac. barely visible, addition blocks view of orig. bldg..	**E**	**VG**	**G**	**FP**

D. INTEGRITY

13.	**Condition:** minor surface wear	**E**	**G**	**F**	**P**
14.	**Exterior Alterations:** 1974 addition completely overshadows orig. building	**E**	**G**	**F**	**P**

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ________________________________.

(Date)

Attest: ______________________________________

Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: Bruce Lyon Memorial Research Center

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**9**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**17**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**0**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					26
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.78
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	13
				D. INTEGRITY	**13.78**
ADJUSTED TOTAL (Preliminary total minus Integrity)				**12 (rounded from 12.22)**	

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STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: A/B Wing and B/C Wing together, Children's Hospital

A. ARCHITECTURE

1. **Exterior/Design:** very good form and design as an original Northern Italian Renaissance design with a modern compatible addition that forms a U-plan with center courtyard. Use of terra cotta cornice, solarium bays with matching ornament on both wings. **E VG G FP**
2. **Interior:** not evaluated **E VG G FP**
3. **Construction:** steel frame concrete with brick cladding **E VG G FP**
4. **Designer/Builder:** Edward W. Cannon and Stone and Mulloy **E VG G FP**
5. **Style/Type:** very good example of hospital design and N. Italian Renaissance Style with simpler Modern interpretation at addition (B/C Wing) **E VG G FP**

B. HISTORY

6. **Person/Organization:** growth of Children's Hospital of East Bay **E VG G FP**
7. **Event:** no association with significant event **E VG G FP**
8. **Patterns:** assoc. with improved healthcare for children and the need for larger facilities to serve general population increase after World War II **E VG G FP**
9. **Age:** built 1926; 1946-1948 **E VG G FP**
10. **Site:** not moved **E VG G FP**

C. CONTEXT

11. **Continuity:** not in API or ASI **E VG G FP**
12. **Familiarity:** only portion of east façade on A/B Wing are visible to the public **E VG G FP**

D. INTEGRITY

13. **Condition:** minor surface wear **E G F P**
14. **Exterior Alterations:** additions to both wings include demolition of main arched entry and replacement with modern 2-story entry in 1962; additions to third story on both wings; one-story build-out on east façade of B/C Wing; infill of some windows on A/B Wing; exterior alterations due to attachment of later additions. Many original features and ornament are retained, however. **E G F P**

Evaluated by: Christina Dikas, Page & Turnbull **Date:** July 12, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ____________________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: A/B Wing and B/C Wing together, Children's Hospital

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**13**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
		(1*)		10. Site	
4	2	1	0		
				B. HISTORY TOTAL (max. 60)	**22**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
			(1*)		
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					36
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	1.08
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B	
		(37.5%*)		and C total excluding 2)	13.5
				D. INTEGRITY	**14.58**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**21 (rounded from 21.42)**

*Note: Score numbers averaged between G and F due to condition on the low end of G.

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 747 52nd Street, Oakland CA
Name: A/B Wing, Baby Hospital

A. ARCHITECTURE

1.	**Exterior/Design:** rhythmic fenestration, good ornament and design detail, including tile roofs, terra cotta cornice, chimney with arcaded cap, and two solarium bays	**E**	**VG**	**G**	**FP**
2.	**Interior:** some reconfig. with double-loaded corridors and stair circ. remaining	**E**	**VG**	**G**	**FP**
3.	**Construction:** pressed brick clad reinforced concrete, terra cotta, roof tiles, multi-paned large solarium windows	**E**	**VG**	**G**	**FP**
4.	**Designer/Builder:** Oakland architect Edward W. Cannon	**E**	**VG**	**G**	**FP**
5.	**Style/Type:** very good example of hosp. design and of N. Ital. Renaissance style	**E**	**VG**	**G**	**FP**

B. HISTORY

6.	**Person/Organization:** oldest extant bldg. associated with earliest area children's hospital, Children's Hospital of the East Bay (historic Baby Hospital), a benevolent organization	**E**	**VG**	**G**	**FP**
7.	**Event:** no known assoc. with sig. event	**E**	**VG**	**G**	**FP**
8.	**Patterns:** intimately connected with pattern of improved healthcare for children	**E**	**VG**	**G**	**FP**
9.	**Age:** built 1926	**E**	**VG**	**G**	**FP**
10.	**Site:** not moved	**E**	**VG**	**G**	**FP**

C. CONTEXT

11.	**Continuity:** not located in an API or ASI	**E**	**VG**	**G**	**FP**
12.	**Familiarity:** east façade visible from elevated Grove-Shafter freeway (SR-24)	**E**	**VG**	**G**	**FP**

D. INTEGRITY

13.	**Condition:** minor surface wear	**E**	**G**	**F**	**P**
14.	**Exterior Alterations:** main arched entry demolished and replaced with modern entry, additions to third story, some windows infilled, and stairs installed at the southwest corner, though a majority of materials on the east, west, and north facades remain intact.	**E**	**G**	**F**	**P**

Evaluated by: Stacy Farr, Page & Turnbull **Date:** July 23, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ____________________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street, Oakland CA
Name: A/B Wing, Baby Hospital

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**12**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**30**
4	2	1	0	11. Continuity	
14	7	4 (2*)	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**2**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					44
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	1.32
-0	-25%	-50% (37.5%*)	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	16.5
				D. INTEGRITY	17.82
ADJUSTED TOTAL (Preliminary total minus Integrity)					**26 (rounded from 26.18)**

*Note: Score numbers averaged between G and F due to condition on the low end of G.

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 747 52nd Street
Name: B/C Wing, Children's Hospital

A. ARCHITECTURE

		E	VG	G	FP
1.	**Exterior/Design:** modern compatible addition with respect to form, materials, scale, massing, and size; ornament at replicated bay from A/B Wing	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** steel frame concrete with brick cladding, steel-sash windows	E	VG	G	FP
4.	**Designer/Builder:** Stone and Mulloy, active hospital designers	E	VG	G	FP
5.	**Style/Type:** some Modernist design cues, reinterprets A/B Wing	E	VG	G	FP

B. HISTORY

		E	VG	G	FP
6.	**Person/Organization:** 2nd expansion, growth of Children's Hospital of East Bay	E	VG	G	FP
7.	**Event:** no association with significant event	E	VG	G	FP
8.	**Patterns:** assoc. with general pop. increase after WW2	E	VG	G	FP
9.	**Age:** built 1946-1948	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

		E	VG	G	FP
11.	**Continuity:** not in API or ASI	E	VG	G	FP
12.	**Familiarity:** only portions of rear façade are visible to the public	E	VG	G	FP

D. INTEGRITY

		E	G	F	P
13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** several additions to building, including one-story build-out on east façade and third story addition and alterations at locations of abutting West Site Plant and Patient Tower	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** July 23, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ____________________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street

Name: B/C Wing, Children's Hospital

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**9**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**17**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**0**
PRELIMINARY TOTAL (Sum of A, B and C)				(max. 100)	26
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.78
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	13
				D. INTEGRITY	**13.78**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**12 (rounded from 12.22)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 682 52nd Street
Name:

A. ARCHITECTURE

1.	**Exterior/Design:** nested roofs, stucco stair walls, roof brackets, gable roof, asymmetrical	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame with stucco cladding	E	VG	G	FP
4.	**Designer/Builder:** Rockford L. Robins, local contractor, no known sig.	E	VG	G	FP
5.	**Style/Type:** good example of simple Craftsman bungalow	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known assoc. with important person or organization	E	VG	G	FP
7.	**Event:** no known assoc. with specific important event	E	VG	G	FP
8.	**Patterns:** style and location assoc. with residential expansion, late d.o.c. for area	E	VG	G	FP
9.	**Age:** built 1922	E	VG	G	FP
10.	**Site:** unmoved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** maintains character of the ASI	E	VG	G	FP
12.	**Familiarity:** not noticeable or conspicuous in the neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** possible stucco reclad, some windows replaced, porch enclosed	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 682 52nd Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	4.75
				D. INTEGRITY	**5.32**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**14 (rounded from 13.68)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 688 52nd Street
Name:

A. ARCHITECTURE

			E	VG	G	FP
1.	**Exterior/Design:**	asymmetry, front-gable porch, massive stucco stair walls, roof brackets	E	VG	G	FP
2.	**Interior:**	not evaluated	E	VG	G	FP
3.	**Construction:**	no sig. materials or methods used	E	VG	G	FP
4.	**Designer/Builder:**	local builder Martin Bensen	E	VG	G	FP
5.	**Style/Type:**	modest but good example of Craftsman bungalow	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:**	no known assoc. with significant person or organization	E	VG	G	FP
7.	**Event:**	no known association with significant event	E	VG	G	FP
8.	**Patterns:**	style & location assoc. with res. development, late const. date (1922)	E	VG	G	FP
9.	**Age:**	built 1922	E	VG	G	FP
10.	**Site:**	not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:**	maintains character of ASI	E	VG	G	FP
12.	**Familiarity:**	not particularly conspicuous in neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:**	only minor surface wear	E	G	F	P
14.	**Exterior Alterations:**	new windows, re-clad, minor changes to character	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 688 52nd Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C)				(max. 100)	19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	4.75
				D. INTEGRITY	**5.32**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**14 (rounded from 13.68)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 720 52nd Street
Name:

A. ARCHITECTURE

			E	VG	G	FP
1.	**Exterior/Design:**	window groups, hipped roof, gable window	E	VG	G	FP
2.	**Interior:**	not evaluated	E	VG	G	FP
3.	**Construction:**	wood frame with wood cladding	E	VG	G	FP
4.	**Designer/Builder:**	arch. Thomas Dean Newsom, bldr Wm. Hammond Keifer, not sig.	E	VG	G	FP
5.	**Style/Type:**	modest but good example of Simple Bungalow type	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:**	no known association with sig. person or organization	E	VG	G	FP
7.	**Event:**	no known assoc. with sig. event	E	VG	G	FP
8.	**Patterns:**	in age, style and date of constr., assoc. with residential settlement	E	VG	G	FP
9.	**Age:**	built 1907	E	VG	G	FP
10.	**Site:**	not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:**	maintains (rather than establishes) character of ASI	E	VG	G	FP
12.	**Familiarity:**	not particularly conspicuous in the neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:**	minor surface wear	E	G	F	P
14.	**Exterior Alterations:**	minor changes to character (windows replaced)	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of __________.
(Date)

Attest: __________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 720 52nd Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	4.75
				D. INTEGRITY	**5.32**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**14 (rounded from 13.68)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 671 53rd Street
Name:

A. ARCHITECTURE

1.	**Exterior/Design:** hip roof, grouped windows, shingle clad, dormer, asymmetry	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame and shingle cladding	E	VG	G	FP
4.	**Designer/Builder:** local builder Carl Phillip Kreischer	E	VG	G	FP
5.	**Style/Type:** modest example of simple bungalow type	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	FP
7.	**Event:** no known association with specific significant event	E	VG	G	FP
8.	**Patterns:** representative in age, style and location of pattern of res. expansion	E	VG	G	FP
9.	**Age:** constructed Aug 1906	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** in ASI, good rep. in good condition, helps establish character	E	VG	G	FP
12.	**Familiarity:** not particularly conspicuous in neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** very minor changes to overall character	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ____________________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 671 53rd Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**2**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					20
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.61 0
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	
				D. INTEGRITY	**.60**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**19 (rounded from 19.4)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: **675 53rd Street**

Name:

A. ARCHITECTURE

1.	**Exterior/Design:** modest size, asymmetry, hipped roof, hipped dormer, porch roof columns	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame and stucco	E	VG	G	FP
4.	**Designer/Builder:** local builder Edward Collins, not significant	E	VG	G	FP
5.	**Style/Type:** modest example of simple Bungalow style	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	FP
7.	**Event:** no know association with significant event	E	VG	G	FP
8.	**Patterns:** style, location and date associated with pattern of res. settlement	E	VG	G	FP
9.	**Age:** 1911 construction	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** good but altered rep. of its type, maintains character of ASI	E	VG	G	FP
12.	**Familiarity:** not conspicuous in neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** addition (large semicircular bay) at primary facade	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ________________.

(Date)

Attest: ________________

Secretary

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 675 53rd Street
Name: ____

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	9.5
				D. INTEGRITY	**8.93**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**9 (rounded from 8.93)**

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: **677-679 53rd Street**
Name:

A. ARCHITECTURE

			E	VG	G	FP
1.	**Exterior/Design:**	hip roof, symmetrical façade, engaged pilasters at entries	E	VG	G	FP
2.	**Interior:**	not evaluated	E	VG	G	FP
3.	**Construction:**	wood frame with stucco cladding	E	VG	G	FP
4.	**Designer/Builder:**	local builder Fred Kelley	E	VG	G	FP
5.	**Style/Type:**	fair example of highly simplified Classical Revival	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:**	no known association with sig. person or organization	E	VG	G	FP
7.	**Event:**	no known association with significant event	E	VG	G	FP
8.	**Patterns:**	style reflects pattern of res. settlement, late (1921) date of construction	E	VG	G	FP
9.	**Age:**	1921 construction	E	VG	G	FP
10.	**Site:**	not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:**	fair representative of type, altered, maintains char. of ASI	E	VG	G	FP
12.	**Familiarity:**	not particularly conspicuous in neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:**	minor surface wear	E	G	F	P
14.	**Exterior Alterations:**	minor changes (first floor new windows & doors) to hist. char.	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ____________________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary **❑ Final**

Address: 677-679 53rd Street

Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**5**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					17
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.51
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	4.25
				D. INTEGRITY	**4.76**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**12 (rounded from 12.24)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 685-689 53rd Street
Name:

A. ARCHITECTURE

			E	VG	G	FP
1.	**Exterior/Design:**	angled corner façade, multi-lite transom, curved entry hood, tile watertable	E	VG	G	FP
2.	**Interior:**	not evaluated	E	VG	G	FP
3.	**Construction:**	wood frame, stucco cladding	E	VG	G	FP
4.	**Designer/Builder:**	unknown	E	VG	G	FP
5.	**Style/Type:**	basic commercial type, no discernible style	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:**	no known association with any sig. person or org.	E	VG	G	FP
7.	**Event:**	no known association with any significant event	E	VG	G	FP
8.	**Patterns:**	loc. and d.o.c. shows assoc. with res settlement, type (comm.) is supporting	E	VG	G	FP
9.	**Age:**	built 1914	E	VG	G	FP
10.	**Site:**	not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:**	use and alterations incompatible with general character of AS	E	VG	G	FP
12.	**Familiarity:**	not particularly conspicuous in the neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:**	minor surface wear	E	G	F	P
14.	**Exterior Alterations:**	reclad in stucco, storefront windows covered, hist, char. altered	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 685-689 53rd Street
Name: ____________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**5**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					16
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.48
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	7
				D. INTEGRITY	**7.48**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**9 (rounded from 8.52)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 707 53rd Street
Name:

A. ARCHITECTURE

1.	**Exterior/Design:** good detailing (flared eaves, window groups, multi-roof forms, balconette)	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame with shingle cladding	E	VG	G	FP
4.	**Designer/Builder:** local builder William A. Walker, not significant	E	VG	G	FP
5.	**Style/Type:** simplified Shingle style, good example	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	FP
7.	**Event:** no known association with significant event	E	VG	G	FP
8.	**Patterns:** location, style & date of const. display assoc. with of pattern of res. dev.	E	VG	G	FP
9.	**Age:** built 1907	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** good rep. of type, unaltered, maintains the character of area	E	VG	G	FP
12.	**Familiarity:** complex façade & roofline noticeable	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** only minor surface wear	E	G	F	P
14.	**Exterior Alterations:** no noticeable alterations	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.
(Date)

Attest: ______________________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 707 53rd Street

Name:

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**5**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					23
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.69
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	0
				D. INTEGRITY	**.69**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**22 (rounded from 22.31)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 715 53rd Street
Name:

A. ARCHITECTURE

1.	**Exterior/Design:** flared eaves, multi-lite dormer window, asymmetry, exp. purlins & rafter tails	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame with wood clapboard siding	E	VG	G	FP
4.	**Designer/Builder:** unknown	E	VG	G	FP
5.	**Style/Type:** modest but good example of Craftsman bungalow	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	FP
7.	**Event:** no known association with significant event	E	VG	G	FP
8.	**Patterns:** assoc. (loc, style and date of const.) with pattern of res. settlement	E	VG	G	FP
9.	**Age:** ca. 1906	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** good rep. of type, few alterations, maintains character of ASI	E	VG	G	FP
12.	**Familiarity:** not particularly conspicuous in neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** new porch supports & railings, new	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary **❑ Final**

Address: 715 53rd Street
Name:

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**13**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					21
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.63
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	5.25
				D. INTEGRITY	**5.88**
ADJUSTED TOTAL (Preliminary total minus Integrity)				**15 (rounded from 15.12)**	

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: **5203 Dover Street**
Name:

A. ARCHITECTURE

1.	**Exterior/Design:** hipped roof & dormer, multi-lite dormer window, gable porch roof, Tuscan porch columns	**E**	**VG**	**G**	**FP**
2.	**Interior:** not evaluated	**E**	**VG**	**G**	**FP**
3.	**Construction:** wood frame with wood clapboard siding	**E**	**VG**	**G**	**FP**
4.	**Designer/Builder:** unknown	**E**	**VG**	**G**	**FP**
5.	**Style/Type:** modest but good example of Bungalow style	**E**	**VG**	**G**	**FP**

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	**E**	**VG**	**G**	**FP**
7.	**Event:** no known association with significant event	**E**	**VG**	**G**	**FP**
8.	**Patterns:** age, location and date of const. assoc. with pattern of res. development	**E**	**VG**	**G**	**FP**
9.	**Age:** constructed 1905	**E**	**VG**	**G**	**FP**
10.	**Site:** not moved	**E**	**VG**	**G**	**FP**

C. CONTEXT

11.	**Continuity:** maintains character of ASI	**E**	**VG**	**G**	**FP**
12.	**Familiarity:** not particularly distinguishable in the neighborhood	**E**	**VG**	**G**	**FP**

D. INTEGRITY

13.	**Condition:** exhibits only minor surface wear	**E**	**G**	**F**	**P**
14.	**Exterior Alterations:** minor changes to character (windows replaced)	**E**	**G**	**F**	**P**

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________

Secretary

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5203 Dover Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**13**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C)				(max. 100)	21
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.63
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	5.25
				D. INTEGRITY	**5.88**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**15 (rounded from 15.12)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board

EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5212-5214 Dover Street

Name:

A. ARCHITECTURE

1.	**Exterior/Design:** any original design and detail lost to alterations & façade reconfiguration	E	VG	G	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame, wood and stucco cladding	E	VG	G	FP
4.	**Designer/Builder:** local contractor Harry M. Swalley, not significant	E	VG	G	FP
5.	**Style/Type:** exhibits no discernible style or type	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	FP
7.	**Event:** no known association with significant event	E	VG	G	FP
8.	**Patterns:** assoc. in date of const. and location with pattern of res. settlement	E	VG	G	FP
9.	**Age:** built 1910	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** located in ASI but visually noncontributory	E	VG	G	FP
12.	**Familiarity:** not particularly conspicuous in the neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** façade reconfigured, new cladding, porch, and windows	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.

(Date)

Attest: ______________________________

Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5212-5214 Dover Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**2**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**0**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					13
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.39
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	6.5
				D. INTEGRITY	**6.11**
ADJUSTED TOTAL (Preliminary total minus Integrity)				**6 (rounded from 6.11)**	

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ Preliminary ❑ Final

Address: 5225 Dover Street
Name:

A. ARCHITECTURE

			E	VG	G	FP
1.	**Exterior/Design:**	roof brackets, lattice at gable peaks, stylized corner posts, window groups	E	VG	G	FP
2.	**Interior:**	not evaluated	E	VG	G	FP
3.	**Construction:**	wood frame construction	E	VG	G	FP
4.	**Designer/Builder:**	local builder Harry M. Swalley	E	VG	G	FP
5.	**Style/Type:**	example of Craftsman style	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:**	no known association with sig. person or organization	E	VG	G	FP
7.	**Event:**	no known association with significant event	E	VG	G	FP
8.	**Patterns:**	assoc. with pattern of res development in style, loc. and date of const.	E	VG	G	FP
9.	**Age:**	built 1908	E	VG	G	FP
10.	**Site:**	not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:**	maintains (rather than establishes) character of ASI	E	VG	G	FP
12.	**Familiarity:**	not particularly conspicuous in the neighborhood	E	VG	G	FP

D. INTEGRITY

13.	**Condition:**	minor surface wear	E	G	F	P
14.	**Exterior Alterations:**	changes (new windows, cladding, entrances) minor	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________.
(Date)

Attest: ______________________
Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5225 Dover Street
Name: ______________________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	9.5
				D. INTEGRITY	**10.07**
ADJUSTED TOTAL (Preliminary total minus Integrity				**8 (rounded from 8.3)**	

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5204 Martin Luther King Jr. Way
Name: ____________

A. ARCHITECTURE

1.	**Exterior/Design:** arched windows, molded rosettes, spiral columns, iron balconettes	E	VG	**G**	FP
2.	**Interior:** not evaluated	E	VG	G	FP
3.	**Construction:** wood frame construction	E	VG	**G**	FP
4.	**Designer/Builder:** Unknown	E	VG	G	**FP**
5.	**Style/Type:** modest example of Mediterranean Revival style	E	VG	**G**	FP

B. HISTORY

6.	**Person/Organization:** no known association with sig. person or organization	E	VG	G	**FP**
7.	**Event:** no known association with significant event	E	VG	G	**FP**
8.	**Patterns:** assoc. with pattern of res development in style, loc. and date of const.	E	VG	**G**	FP
9.	**Age:** built 1920s	E	VG	**G**	FP
10.	**Site:** not moved	**E**	VG	G	FP

C. CONTEXT

11.	**Continuity:** maintains (rather than establishes) character of ASI; now isolated amidst new construction	E	VG	**G**	FP
12.	**Familiarity:** not particularly conspicuous in the neighborhood	E	VG	G	**FP**

D. INTEGRITY

13.	**Condition:** minor surface wear	E	**G**	F	P
14.	**Exterior Alterations:** changes appear very minor	**E**	G	F	P

Evaluated by: Christina Dikas, Page & Turnbull **Date:** June 28, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ____________.
(Date)

Attest: ____________

Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 5204 Martin Luther King Jr. Way
Name: ____________________

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**7**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**11**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**1**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					19
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.57
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	0
				D. INTEGRITY	**.57**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**18 (rounded from 18.43)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

LPAB FORM 3.1

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: Ford Research and Diagnostic Center

A. ARCHITECTURE

1.	**Exterior/Design:** International style /utilitarian design, little ornament	E	VG	G	FP
2.	**Interior:** small offices, flexible spaces, labs	E	VG	G	FP
3.	**Construction:** steel frame concrete with brick cladding	E	VG	G	FP
4.	**Designer/Builder:** Stone, Marraccini and Patterson, not a significant example	E	VG	G	FP
5.	**Style/Type:** Intl. design cues- glass wall, ribbon windows, asymmetry. Addition.	E	VG	G	FP

B. HISTORY

6.	**Person/Organization:** continued association with Children's Hospital	E	VG	G	FP
7.	**Event:** no known association with any significant event	E	VG	G	FP
8.	**Patterns:** assoc. with CHO's continued expanding role (research) & hosp. design	E	VG	G	FP
9.	**Age:** built 1963	E	VG	G	FP
10.	**Site:** not moved	E	VG	G	FP

C. CONTEXT

11.	**Continuity:** not in API or ASI but maintains char. of area (hosp. site)	E	VG	G	FP
12.	**Familiarity:** two facades visible from street	E	VG	G	FP

D. INTEGRITY

13.	**Condition:** minor surface wear	E	G	F	P
14.	**Exterior Alterations:** addtn. to bldg. change scale & stylistic expression, changes to site obscure orig. bldg. design and reorient entrance to bldg.	E	G	F	P

Evaluated by: Stacy Farr, Page & Turnbull **Date:** June 25, 2013

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ________________________________.

(Date)

Attest: ____

Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: Ford Research and Diagnostic Center

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCIHTECTURE TOTAL (max. 26)	**9**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**17**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**4**
PRELIMINARY TOTAL (Sum of A, B and C)				(max. 100)	30
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	.90
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	15
				D. INTEGRITY	**15.90**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**14 (rounded from 14.1)**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

CUL-2 Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard (Page & Turnbull)

MEMORANDUM

DATE	November 5, 2013	PROJECT NO.	13019A
TO	Shannon Allen	PROJECT NAME	Children's Hospital Oakland Historic Resource Evaluation
OF	LSA 2215 5th Street Berkeley, CA 94710	FROM	Stacy Farr and Christina Dikas Page & Turnbull, Inc. 1000 Sansome St. Suite 200 San Francisco, CA 94110
CC	Heather Klein, Oakland Planning Department; Betty Marvin, Oakland Planning Department Preservation Staff; Landmarks Preservation Advisory Board	VIA	Email

HISTORIC RESOURCE EVALUATION PART I SUPPLEMENT: CHILDREN'S HOSPITAL OAKLAND MAGNOLIA TREE AND COURTYARD

INTRODUCTION

This memorandum supplements Page & Turnbull's Historic Resource Evaluation (HRE) Part I for the Oakland Children's Hospital and Research Center (August 5, 2013), which was presented to the Oakland Landmarks Preservation Advisory Board (LPAB) at their meeting on August 12, 2013. The HRE's Landmark Eligibility ratings for Hospital properties and adjacent residential properties were adopted by the Board at that time. In addition, the LPAB also confirmed the Oakland Cultural Heritage Survey's (OCHS's) revised historic ratings for the A/B Wing, B/C Wing, A/B and B/C Wings together, the Bruce Lyon Memorial Research Center, the Ford Diagnostic and Treatment Center, and the hospital building complex. The LPAB found, based on the HRE Part I, the OCHS forms, and the Landmark Eligibility ratings, that no Hospital or adjacent residential buildings appeared eligible for the California Register of Historical Resources. Only the A/B Wing of the Hospital was found eligible for Oakland City Landmark status. The LPAB requested additional evaluation of two site features: the courtyard located between the A/B Wing and the B/C Wing **(Figure 1)**, and the magnolia tree located within the courtyard, directly east of the B/C Wing **(Figure 2)**.

The HRE Part I assessed the magnolia tree for eligibility for listing in the California Register as an individually eligible resource and as a contributing element to the significance and setting of the A/B Wing and the B/C Wing. As part of this supplemental memorandum, Page & Turnbull has provided additional information to support the finding that the tree is not individually eligible for listing in the California Register, and evaluated the courtyard with the inclusion of the magnolia tree (per best practices; see Methodology below) to determine if the cultural landscape qualifies as individually significant. Page & Turnbull has also evaluated whether the magnolia tree and courtyard are character-defining supportive elements to the historically significant A/B Wing. A finding of individual eligibility for listing in the local register would qualify the cultural landscape as a historic resource under the California Environmental Quality Act (CEQA).

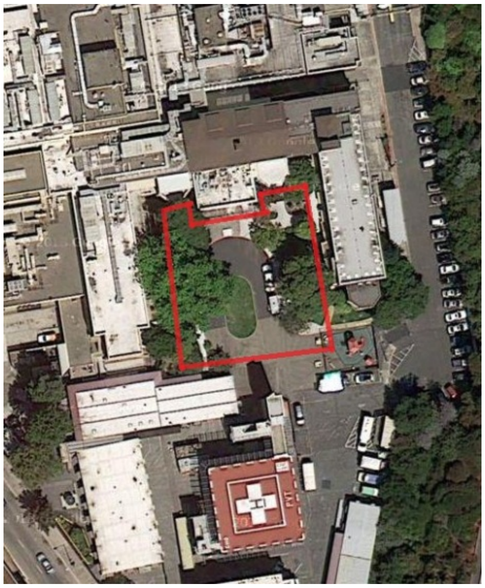

Figure 1: Approximate boundaries of the courtyard, Children's Hospital.

Figure 2: Approximate footprint of the magnolia tree, Children's Hospital.

This memorandum outlines the methodology that Page & Turnbull used to evaluate the magnolia tree and the courtyard and includes findings based on these evaluations, with an updated City of Oakland Evaluation Sheet for Landmark Eligibility for the A/B Wing (see attachment).

SUMMARY OF FINDINGS

The magnolia tree, which is in fair health according to the findings of a qualified arborist,[1] is not individually eligible for the California Register or the local register. Per state and national guidance and best practices, the tree is considered an element in a cultural landscape, not an individual resource.

The courtyard with the magnolia tree at Children's Hospital Oakland is not considered a cultural landscape. Specifically, the courtyard with the magnolia tree is not individually eligible for local register listing as a historic site because research has not revealed a significant direct association with any historic event, activity, or person. It is not individually eligible as a historic designed landscape because research has not revealed that it was consciously designed or planned by a landscape architect, master gardener, architect or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. Furthermore, the courtyard with the magnolia tree did not meet the basic criteria to be evaluated as a vernacular landscape or ethnographic cultural landscape.

[1] Gil Mitchell, RCA #317, ISA Certified Arborist WE-0134A, The Davey Tree Expert Co. Letter to Cleo Construction Management "Re: One Southern magnolia tree located at the Oakland Children's Hospital in Oakland, California" (October 25, 2013).

However, the courtyard and the magnolia tree at Children's Hospital Oakland have been identified as character-defining features of the A/B Wing. The magnolia tree may have tangentially influenced the siting of the hospital's buildings over time (the McElrath house, the A/B Wing, and the B/C Wing). The courtyard was created by the siting of the hospital's first purpose-built building, the L-shaped A/B Wing. The presence of the open space was integral to the design of the A/B Wing, which depended on sunlight, fresh air, and cross breeze as part of the healing intention of the hospital, considered medicinal at the time. Besides the magnolia tree, this finding does not name the present individual physical elements of the courtyard as character defining; rather, it is the spatial presence of the courtyard and magnolia tree that are considered character-defining features. These findings are consistent with the OCHS evaluation of the A/B Wing and of the A/B Wing and the B/C Wing together, which identifies the magnolia tree as a supportive element.

METHODOLOGY

According to the definition of property types in the Historic Preservation Element of the Oakland General Plan (September 1993, p. 2-5), the courtyard and its features as a cultural landscape can most closely be described as "Natural Features Related to Human Presence," further defined as "an individual living or nonliving element of nature introduced or significantly influenced by human activity or associated with significant persons, events, or historical patterns."

Because the Historic Preservation Element does not include formal criteria for the evaluation of "Natural Features Related to Human Presence" for local historic significance, Page & Turnbull sought guidance in national and state language about evaluating landscape features in order to adapt the City of Oakland's existing evaluative framework, which is generally used to evaluate buildings and structures.

An overview of Oakland's existing evaluative framework and thresholds for CEQA significance can be reviewed in the Appendix.

GUIDANCE FOR EVALUATING CULTURAL LANDSCAPES AND FEATURES

Page & Turnbull used the guidance of national and state guidelines as described below to determine if the magnolia tree and the courtyard are individually significant as a cultural landscape and if they are significant as character-defining supportive landmark elements of the historic A/B Wing .A finding of individual significance as a cultural landscape would qualify the magnolia tree and the courtyard as historic resources under CEQA. A finding of significance as character-defining supportive landmark elements of the historic A/B Wing would qualify any impacts to the magnolia tree and the courtyard to be considered in the analysis of any proposed projects at the site.

In considering how to apply Oakland's existing evaluative framework to the magnolia and the courtyard, best practices guidance was sought in the following sources:

- National Park Service, *National Register Bulletin 18: How To Evaluate and Nominate Designed Historic Landscapes*;
- National Park Service, *Guidelines for Cultural Landscape Preservation*, http://www.nps.gov/cultural_landscapes/Research.html;
- National Park Service, *Technical Preservation Services Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*;
- National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes,* 1996;
- *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques* by Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, for the Department of the Interior, Natural Park Service, 1998;
- California Department of Transportation, *Environmental Program's General Guidelines for Identifying and Evaluating Historic Landscapes*; and
- Email communication with California State Historian Jay Correia of the California Office of Historic Preservation.

All of these sources evaluate cultural landscapes using language laid out by the National Park Service, which defines a cultural landscape as a "geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity or person, or that exhibits other cultural or aesthetic values" (underline added for emphasis).[2] There are four general types of cultural landscapes, not mutually exclusive:

- Historic site: a landscape that is significant for its association with a historic event, activity or person.
- Historic designed landscape: a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition.
- Historic vernacular landscape: a landscape that evolved through use by the people whose activities or occupancy shaped that landscape, and
- Ethnographic landscapes: a landscape containing a variety of natural and cultural resources that associated people define as heritage resources.

All four of these cultural landscape types are composed of features, which the National Park Service defines as "the smallest element(s) of a landscape that contributes to the significance and that can be the subject of a treatment intervention. Examples include a woodlot, hedge, lawn, specimen plant, allee, house, meadow or open field, fence, wall, earthwork, pond or pool, bollard, orchard, or agricultural terrace."[3]

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[2] Charles A. Birnbaum, "Technical Preservation Services Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes" (National Park Service, 1994) p. 1.

[3] National Park Service, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes* (1996) 4.

Cultural Landscape for Individual Significance

Page & Turnbull's HRE Part I evaluated the magnolia tree and found that it was ineligible for the California Register. Based on the above guidance and best practices, the magnolia tree would be considered a feature within a cultural landscape and cannot be considered a cultural landscape in and of itself, or an individual historic resource.

The courtyard may be considered as both a potential historic site and a potential historic designed landscape. The courtyard is not evaluated as a potential historic vernacular landscape because vernacular landscapes are generally large acreage sites, like mining landscapes, agricultural areas, and industrial landscapes, that have evolved through use of the land. The courtyard is also not evaluated as a potential ethnographic landscape because ethnographic landscapes contain resources that people associated with these features define as heritage resources, such as sacred sites and ceremonial grounds. Based on best practices, the magnolia tree cannot be considered a cultural landscape in and of itself, but is rather considered a feature of the courtyard. A discussion of potential individual significance of the courtyard with the magnolia tree is contained in this memorandum.

Courtyard and Magnolia Tree as Character-Defining Supportive Landscape Features of the A/B Wing

Regarding the potential status of the magnolia tree and the courtyard as character-defining supportive landscape elements of the A/B Wing, in many instances, historic properties have a landscape component that is integral to the significance of the resource. For example, if the original design intent of a designed landscape was to complement an adjacent building, the landscape would potentially qualify as a character-defining supportive landscape element of the historic building, or could be considered as significant, if the original building was removed. An evaluation of a historic property must consider all of its components—the building and any associated landscape features. In addition to being found integral to the historic significance of the building, in order for a supportive landscape element to be character-defining, it must have been present during the historic building's period of significance. In this memorandum, the magnolia tree and the courtyard have been evaluated for their status as character-defining supportive landscape elements to the A/B Wing; an updated Landmark Eligibility Evaluation Sheet was also prepared for this purpose.

RESEARCH

To complete the evaluations related to the magnolia tree and courtyard as an individual cultural landscape and as potential contributing features to the significance of the A/B Wing, Page & Turnbull relied primarily on extensive research already conducted for the Historic Resource Evaluation for Children's Hospital, which included a site visit, photography, and research at repositories such as the Oakland Cultural Heritage Survey, the Oakland History Room at the Oakland Public Library, the San Francisco Public Library, and the Bancroft Library at the University of California, Berkeley. Additional information for the Historic Resource Evaluation was gathered from Children's Hospital records, voter registrations, census records, Sanborn Fire Insurance Maps and Page & Turnbull's in-house archive. Any additional extant plans or drawings for the design of the courtyard were sought, as well as documentation relating to design decisions as they might relate to the magnolia tree. Additional historic images of the courtyard and the magnolia tree were sought, and secondary research on the history of hospital courtyard design was conducted. Page & Turnbull also reviewed an arborist's report, prepared by Gil Mitchell of The Davey Tree Expert Co. The full arborist's report will be included as an attachment to the Planning Department Staff Report to the LPAB.

EVALUATIONS

EVALUATION OF THE CULTURAL LANDSCAPE FOR INDIVIDUAL SIGNIFICANCE

The Courtyard as a Historic Site

A historic site is a landscape that is significant for its association with a historic event, activity, or person. Research has revealed no discrete event that has taken place in the courtyard of Children's Hospital that meets the threshold for local historic significance. Similarly, patterns of activity that have taken place in the courtyard over its span of development, while certainly important on a personal or hospital scale, have not been found to meet the threshold for local historic significance. Lastly, research has not revealed the courtyard to have an association with any significant person that meets the threshold for local historic significance. The magnolia tree, as a feature of the courtyard, was reportedly planted in 1860 by members of the Alden family,[5] who settled this neighborhood and gave it its name prior to the turn of the 20th century. The tree was planted as part of a larger domestic landscape and was not originally part of a defined courtyard space, as shown below in Figure 3. The connection to the Alden family is a very basic level of association and does not raise the courtyard to the level of local historic significance.

The Courtyard as a Historic Designed Landscape

A historic designed landscape is a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. While there are currently design elements to be found at the courtyard, including the circular drive, planting beds, and furniture, research has not revealed any landscape architect, master gardener, architect or horticulturalist or amateur gardener involved in the original plans or designs for the courtyard. The circular drive which is at the center of the courtyard is not an original design element; a review of Sanborn maps and historic images shows that vehicle access to the south side of the original Baby Hospital building and, later, the A/B Wing, has always been limited and never included a strong connection to the street **(Figures 3, 4, 5, and 6)**.

[5] The magnolia tree has a plaque at its base that attributes its planting to the women of the Alden family, and dates the planting at 1860.

1000 Sansome Street, Suite 200, San Francisco, California 94111 | T 415.362.5154 F 415.362.5560 | www.page-turnbull.com

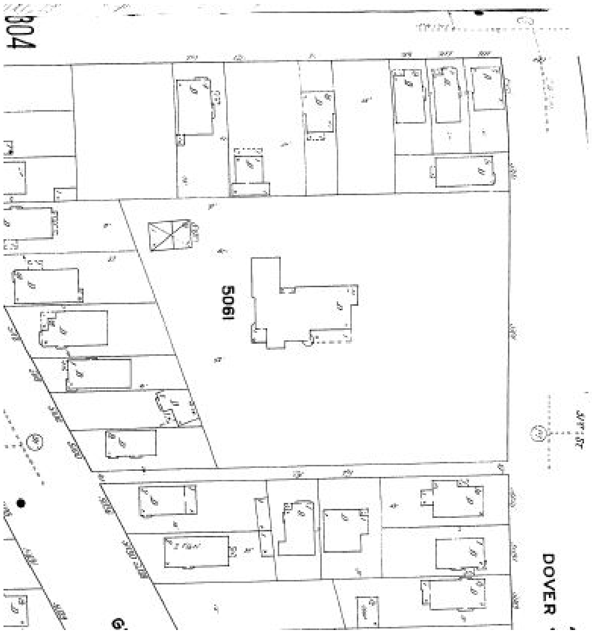

Figure 3: In 1911, the Alden-McElrath house was located at the center of the block on a large lot. 51st Street was a narrow alley at the time, and no other buildings on the property created a courtyard-type space. Source: Sanborn Fire Insurance Map for Oakland, California, 1911, page 310.

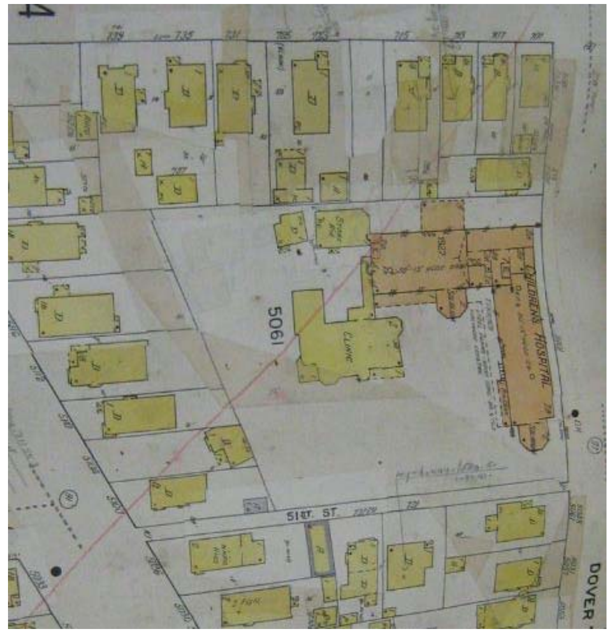

Figure 4: In 1931, the original Baby Hospital building (Alden-McElrath house) and the A/B Wing formed a complex with a courtyard space between them. 51st Street was still a narrow alley, and car and ambulance access to the Hospital was via a driveway passage from 52nd Street to Dover Street, with a porte-cochere on the north façade of the hospital. Source: Sanborn Fire Insurance Map for Oakland, California, 1931, page 310.

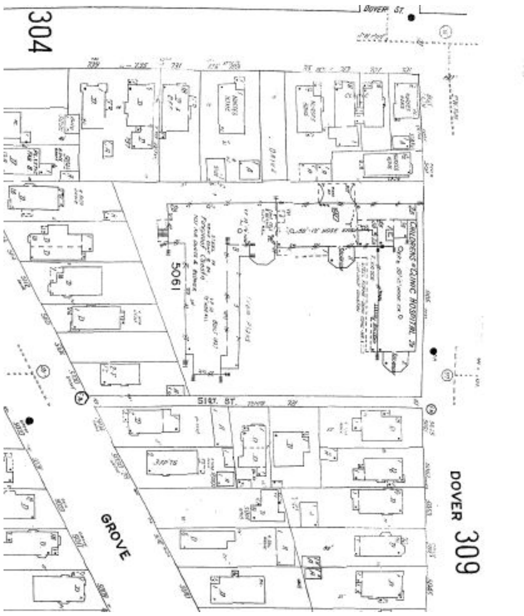

Figure 5: In 1951, the construction of the B/C Wing adjoining the A/B Wing had created a more defined courtyard space, and the inclusion of a ground-level terrace at the east façade of the B/C Wing suggests that the building was designed to relate to the courtyard space. 51st Street remained a narrow alley, and car and ambulance access to the Hospital was still via a driveway passage from 52nd Street to Dover Street, with a porte-cochere on the north façade of the hospital. Source: Sanborn Fire Insurance Map for Oakland, California, 1951, page 310.

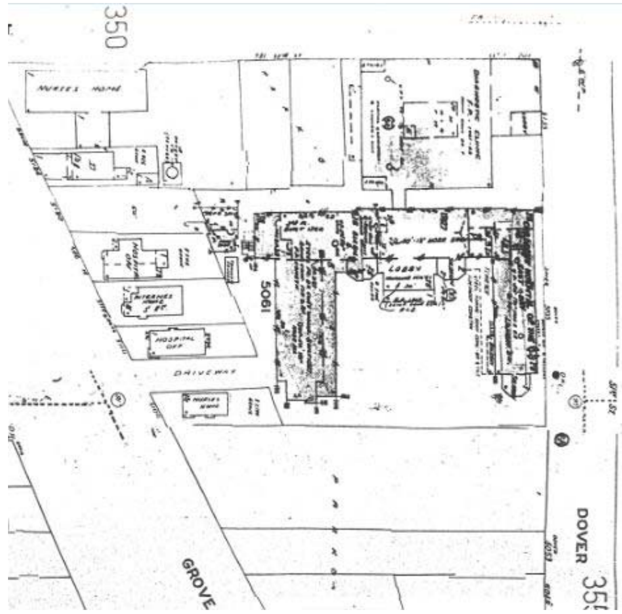

Figure 6: In 1969, a parking lot has replaced the former driveway from 52nd Street, and car and ambulance access to the hospital is now gained from that parking lot and via a driveway from Grove Street (now Martin Luther King Jr. Way). 51st Street has been removed and the courtyard now faces a large parking lot. Source: Sanborn Fire Insurance Map for Oakland, California, 1969, page 310.

There is no landscape architect of record for the construction of the A/B Wing, and the architect of the building, Edward W. Cannon, is not associated with any other landscape designs of note. Similarly, the firm of Stone & Mulloy, who constructed the B/C Wing and created a master plan for the hospital site (which was not followed as the Hospital expanded) has no known association with any designed landscapes of note. Rather than a historic designed landscape, the design features of the courtyard at Children's Hospital appear to have evolved and changed in response to changes at the larger site **(Figures 7, 8, 9, and 10)**; therefore, the courtyard cannot be considered significant as a historic designed landscape.

Figure 7: Shortly after construction in 1926, vehicles could access the south entrance of the Hospital, although the drive is west of where it is now located and the lawn to the west of the A/B Wing appears larger than currently configured. Source: Oakland Museum, currently located in the courtyard lobby, Children's Hospital.

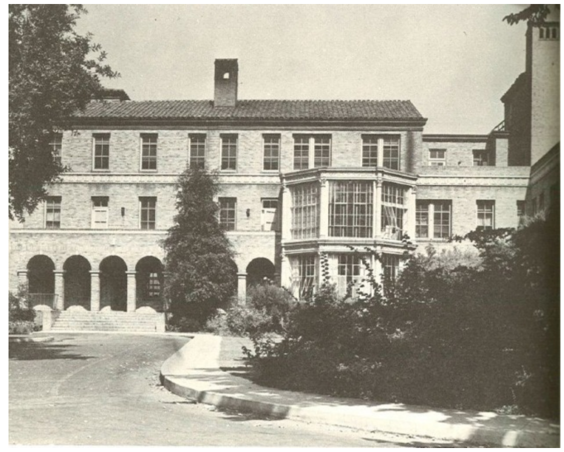

Figure 8: Prior to construction of the B/C Wing in 1948, the driveway in the courtyard has widened and the lawn to the west of the A/B Wing appears smaller than in the 1926 photograph. Source: Murray Morgan, *The Hospital Women Built for Children*, Oakland, CA: Children's Hospital Medical Center, 1967.

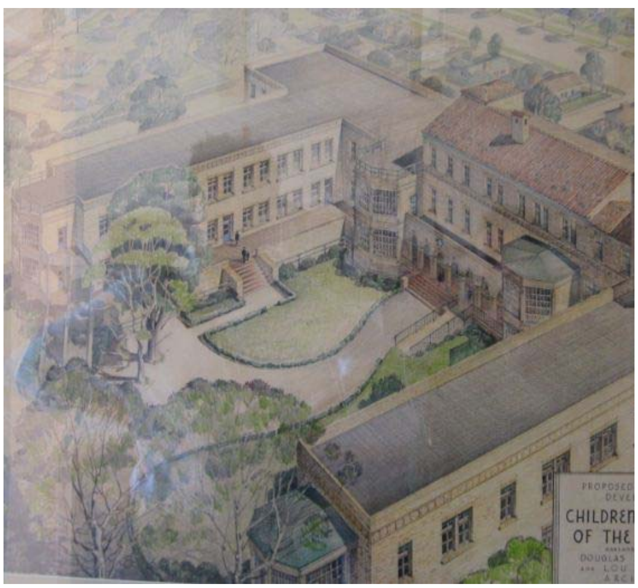

Figure 9: A 1945 rendering of the planned construction of the B/C Wing shows either extant or proposed courtyard design, without a circular drive. Source: On display in the courtyard lobby, Children's Hospital.

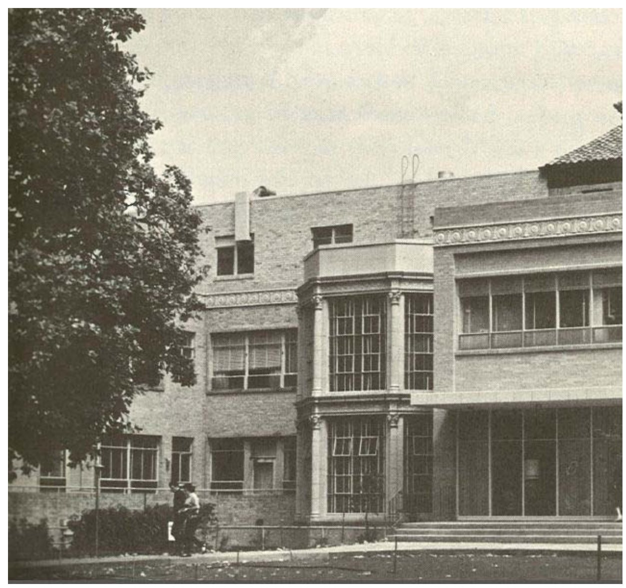

Figure 10: Shortly after the construction in 1963 of a new entrance lobby and broad stairs, a broad paved area is visible in front of the new stairs. Source: Murray Morgan, *The Hospital Women Built for Children*, Oakland, CA: Children's Hospital Medical Center, 1967.

EVALUATION OF THE COURTYARD AND MAGNOLIA TREE AS CHARACTER-DEFINING SUPPORTIVE LANDSCAPE FEATURES OF THE A/B WING

Character-defining features of a historic building are those features that enable the property to convey its historic identity. Character-defining features may be the physical traits that commonly recur in property types and/or architectural styles, or they may be distinctive features of a unique property. A historically significant property will include sufficient character-defining features to be considered a true representative of a particular type, period, or method of construction, and these features must also retain a sufficient degree of integrity. Character-defining features can be expressed in terms such as form, proportion, structure, plan, style, or materials.

Character-defining features of the A/B Wing that have already been identified by Page & Turnbull and the City of Oakland in previous evaluations include:

- The building's footprint; its narrow linear form and its southern orientation reflect the era of the building's construction and its status when built as a modern hospital.
- The ratio of solid to void; the building's evenly spaced smaller windows are characteristic of the Northern Italian Renaissance style which it references.
- Brick and terra cotta cladding; this cladding is original to the building's design and construction, and is representative both of its Northern Italian Renaissance inspiration and the programmatic sanitation and fire-safety requirements of the Baby Hospital.
- Two two-story five-sided bays; these bays were used as solariums during an era when sunlight was believed to have healing qualities and are character defining for their programmatic use.
- Original windows of the primary type and surrounds: the building retains most of its original windows within original window surrounds—paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels—which are representative of the building's era of construction.
- Ornamentation and architectural detail: the building is distinguished by its high level of design detail, including fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins, molded frieze depicting animal and bird motifs, bambino medallion, and a terra cotta balcony supported by ornamented brackets with floral and acanthus-leaf motifs.

A review of literature regarding hospital design indicates that courtyards and open spaces have been integral elements of hospital design for over one thousand years, and have appeared throughout time in both Asian and Western cultures.[6] During the Middle Ages in Europe, monasteries created elaborate gardens to bring pleasant soothing distraction to the ill. European and American hospital design in the nineteenth century incorporated gardens for a variety of reasons. In her influential 1863 book *Notes on Hospitals*, Florence Nightingale recommended garden grounds for their ability to soothe patients, for exercise, and circulation of

[6] Roger S. Ulrich, "Health Benefits of Gardens in Hospitals", a paper delivered at the International Exhibition Floriade, 2002. Accessed online, October 2013 at http://www.greenplantsforgreenbuildings.org/attachments/contentmanagers/25/HealthSettingsUlrich.pdf

air through hospital wards and around the hospital grounds. This circulation of outside air was critical in an era when hospital design was influenced by the dominant medical theory of "miasma," which attributed disease to vapors in polluted or damp, still air. The design of the A/B Wing is a representative example of this era of hospital design, when long narrow wards with many windows, full sunlight exposure, and access to fresh air and circulation became known as "Nightingale wards."

Gardens became less prevalent in hospital design in the first decades of the 1900s, when advances in medical science shifted design toward sterile buildings that were believed to reduce infection risk and serve as functional and efficient spaces for new medical technology. What hospital gardens remained were usually associated with facilities that treated patients with mental illness, or those in convalescent or rehabilitation centers. Through the middle decades of the twentieth century, courtyards largely disappeared from hospital design, although recent decades have seen a reemergence of their use for therapeutic or meditative uses on hospital campuses.

The courtyard space adjacent to the A/B Wing was formed by the need to orient the building in a way to maximize the exposure of its wards' many windows to sunlight and fresh air. The inclusion at the south façade of a lobby, entrance, and colonnaded porch, and a driveway for vehicular access to this entry, implies that this courtyard was not intended for use as a private, therapeutic space. However, the placement of the through-driveway and the ambulance entrance at the north façade of the building means that the courtyard space remained somewhat sheltered from some of the more bustling daily activities of the hospital.

The magnolia tree, as the oldest extant landscape element on the site, may have contributed to the siting of the McElrath house that served as the original Baby Hospital (built between 1878 and 1900), because it shaded the front porch. The house still stood when the A/B Wing was constructed. Thus, the tree served in a tangential way as an element which may have shaped the siting of the courtyard and the A/B Wing itself. The Children's Hospital's women's auxiliary fundraising group adopted the tree as a symbol and by the time the A/B Wing was constructed, had been calling itself the Branches, in reference to the magnolia tree, for approximately ten years.

The courtyard and the magnolia tree were components of the design of the historically significant A/B Wing, and can be considered character-defining supportive landscape features of the building. Thus two items should be added to the list of character-defining features of the A/B Wing:

- The spatial openness of the courtyard, which complements the long narrow L-shaped design and the siting of the A/B Wing.
- The magnolia tree, which may have contributed to the siting of the courtyard and hence the design and siting of the A/B Wing.

Integrity of the courtyard and magnolia as character-defining supportive landscape features of the A/B Wing is good; despite changes in the configuration and specific landscape and hardscape elements of the courtyard, its spatially open qualities remain consistent since the construction of the A/B Wing. Aside from the magnolia tree, the historic value of the courtyard is ***not*** in the actual physical elements, such as the lawn, driveway, planting beds, or other landscape materials that have evolved over time, but rather the spatially open quality of the courtyard, the existence of which relates to the design and siting of the A/B Wing. The magnolia tree remains where it was planted, the site around which the courtyard and the Hospital buildings, starting with the McElrath house, then the A/B Wing, and finally the B/C Wing[7], evolved.

CONCLUSION

The magnolia tree is not individually eligible for the California or the local register. Per state and national guidance as well as best practices, the tree is an element in a cultural landscape and not an individual separate historic resource.

The courtyard with the magnolia tree at Children's Hospital Oakland is not considered a cultural landscape. Specifically, the courtyard with the magnolia tree is not individually eligible for the California Register or local register listing as an individual historic site because research has not revealed a significant separate association with any historic event, activity, or person. It is not individually eligible as a historic designed landscape because research has not revealed that it was consciously designed or planned by a landscape architect, master gardener, architect or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. Furthermore, the courtyard with the magnolia tree did not meet the basic criteria to be evaluated as a vernacular landscape or an ethnographic cultural landscape.

However, the courtyard and the magnolia tree at Children's Hospital Oakland have been identified as character-defining features of the A/B Wing. The magnolia tree likely tangentially influenced the siting of the hospital's buildings over time (the McElrath house, the A/B Wing, and the B/C Wing). The courtyard was created by the siting of the hospital's first purpose-built building, the L-shaped A/B Wing. The presence of the open space was integral to the design of the A/B Wing, which depended on sunlight, fresh air, and cross breeze as part of the healing intention of the hospital, considered medicinal at the time. This finding does not name the present individual physical elements of the courtyard as character defining; rather, it is the spatial presence of the courtyard and magnolia tree that are considered character-defining features. These findings are consistent with the OCHS evaluation of the A/B Wing and of the A/B Wing and the B/C Wing together, which identifies the magnolia tree as a supportive element.

A revised Evaluation Form for Landmark Eligibility for the A/B Wing of Children's Hospital (attached) addresses these findings under "1. Exterior/Design" and "5. Style/Type." The findings do not change the historical rating of the A/B Wing, which remains a 'B', which qualifies it as a historic resource for CEQA

[7] Note: The B/C Wing, and the A/B Wing and the B/C Wing together, were determined by the LPAB on August 12, 2013 not to be eligible for listing in the California Register or the local register in the Historic Resource Evaluation due to lack of significance and compromised integrity, based on the HRE Part I, the OCHS, and Evaluation Forms for Landmark Eligibility.

purposes. Potential impacts to character-defining features of the A/B Wing will be discussed in the Proposed Project Analysis Addendum to the Historic Resource Evaluation.

APPENDIX:
EXISTING EVALUATIVE FRAMEWORK AND CEQA SIGNIFICANCE THRESHOLDS

In Oakland, historic resources that meet the threshold of significance under CEQA include:

1. A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;

2. A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

3. A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

4. Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines section 15064.5); or

5. A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

In March 1994, the Oakland City Council adopted a Historic Preservation Element of the General Plan (amended July 21, 1998) which sets out a graduated system of ratings and designations resulting from the Oakland Cultural Heritage Survey (OCHS) and Oakland Zoning Regulations. The Element provides Policy 3.8, "Definition of 'Local Register of Historical Resources' and Historic Preservation 'Significant Effects' for Environmental Review Purposes" related to identifying historic resources under CEQA:

For purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historical Resources:

1. All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and

2. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

CUL-3 Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis (Page & Turnbull)

OAKLAND CHILDREN'S HOSPITAL AND RESEARCH CENTER

HISTORIC RESOURCE EVALUATION PART II: PROPOSED PROJECT ANALYSIS

OAKLAND, CALIFORNIA
[13019]

Prepared for
LSA ASSOCIATES, INC.

PAGE & TURNBULL

JULY 29, 2014

imagining change in historic environments through design, research, and technology

FINAL

TABLE OF CONTENTS

I. INTRODUCTION

This Historic Resource Evaluation (HRE) Part II, containing the Proposed Project Analysis, has been prepared at the request of LSA Associates Inc. This report is part of ongoing historic preservation consultation services for Children's Hospital and Research Center in Oakland ("Children's Hospital" or "Hospital") to inform construction of a proposed project at the Children's Hospital campus and the area in the vicinity of Dover and 52nd streets.

An HRE Part I was completed in August 2013 which evaluated all buildings on the Children's Hospital campus for their potential status as historic or cultural resources. A California Department of Parks and Recreation (DPR) 523D (District Record) form was completed in December 2013 for the residential neighborhood to the north of Children's Hospital, known as the 55th and Dover Residential District, to determine the neighborhood's potential status as a historic or cultural resource. Based on the findings of the HRE Part I and the DPR 532D form, summarized below, this HRE Part II analyzes the impacts of construction proposed by Children's Hospital (hereafter referred to as Children's Hospital Project or proposed project) on any extant historic or cultural resources at the Hospital site or in the 55th and Dover Residential District. This analysis is required pursuant to the California Environmental Quality Act (CEQA).

This HRE Part II includes:

- A summary of the HRE Part I and DPR 523D form methodology and findings regarding the historic status of buildings at Children's Hospital and the 55th and Dover Residential District;
- A review of the historic context of the Children's Hospital site and the 55th and Dover Residential District;
- A review of the significance and the character defining features of determined historic resources at Children's Hospital and of the 55th and Dover Residential District;
- A review of CEQA regulations as they relate to the proposed project;
- A description of the proposed project;
- An evaluation of the proposed project using the *Secretary of the Interior's Standards for the Treatment of Historic Properties*;
- Analysis of the project-specific impacts of the proposed project on historic resources at Children's Hospital and in the 55th and Dover Residential District; and
- Recommendations that could be adopted to further minimize the identified less-than-significant impacts of the proposed project.

METHODOLOGY

This report is based on findings contained in the HRE Part I for Children's Hospital and the DPR 532D form completed for the 55th and Dover Residential District. Analysis of potential impacts of the proposed project was conducted under the provisions of the California Environmental Quality Act (CEQA) and the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings*, and was completed by professional staff that meet or exceed the Secretary of the Interior's Professional Qualification Standards in Architectural History.

II. SUMMARY OF HISTORIC STATUS

The HRE Part I included an intensive level survey of the Children's Hospital site, architectural descriptions of all buildings, and development of the historic context using archival research. All buildings 45 years old or older, as well as the Children's Hospital campus as a whole, were evaluated for their eligibility for inclusion in the California Register of Historical Resources. They were also evaluated for their potential status as City of Oakland Designated Historic Properties using City of Oakland Evaluation Sheets for Landmark Eligibility.

The findings determined that no buildings at Children's Hospital, nor the campus as a whole, are eligible for the California Register, and that only the A/B Wing of the Hospital is eligible for listing as a City of Oakland Designated Historic Property. Therefore, at the Children's Hospital site, only the A/B Wing qualifies as a historic resource under the California Environmental Quality Act (CEQA).[1]

The Oakland Landmarks Preservation Advisory Board adopted the findings of the HRE Part I at their meeting on August 13, 2013. The full findings of the HRE are summarized in the following table:

Building	California Register Eligibility	Existing OCHS[2] Rating	Page & Turnbull Rating (Using Oakland Evaluation Sheets)	CEQA Historic Resource
A/B Wing (Baby Hospital) (1926, 1962)[3]	No	Cb+3	B	Yes
B/C Wing (1946, 1958, 1987)	No	N/A	C	No
A/B Wing and B/C Wing Together	No	N/A	C	No
Ford Diagnostic and Treatment Center (1962, 1974)	No	N/A	N/A	No
Central Plant/West Site Plant (1979)	N/A	N/A	N/A	No
Patient Tower (1982)	N/A	N/A	N/A	No
Cafeteria (1987)	N/A	N/A	N/A	No
Helistop (2000)	N/A	N/A	N/A	No
Bruce Lyon Memorial Research Center (1958, 1972)	No	N/A	C	No
Portable Buildings (Various dates)	N/A	N/A	N/A	No

[1] The Landmarks Preservation Advisory Board requested further analysis of the potential historic resource status of two landscape features at Children's Hospital: the magnolia tree and the courtyard, both located between the A/B Wing and the B/C Wing. This analysis was completed in November 2013, and neither of these two features was found individually eligible for listing as a state or local historic resource.

[2] Oakland Cultural Heritage Survey, 1996.

[3] Dates of original construction and renovation.

Building	California Register Eligibility	Existing OCHS[2] Rating	Page & Turnbull Rating (Using Oakland Evaluation Sheets)	CEQA Historic Resource
Outpatient Center (1993)	N/A	N/A	N/A	No
Parking Garage (1993)	N/A	N/A	N/A	No
Bruce Lyon Memorial Research Center Addition (1992)	N/A	N/A	N/A	No
Cardiac Catheterization Lab (1993)	N/A	N/A	N/A	No
Children's Hospital Complex as a potential historic district	No	N/A	N/A	No

After completion of the HRE Part I, in response to recommendations from the Oakland Heritage Alliance, the State of California Office of Historic Preservation, and the request of members of the public, LSA Associates Inc. requested the completion of a DPR 523D form for the 55th and Dover Residential District. The 55th and Dover Residential District was previously identified in the Oakland Cultural Heritage Survey (OCHS) on a DPR 523A (Primary Record) form in 1996 and was given a National Register Status Code of 7 ("Not Evaluated") and an OCHS rating as an Area of Secondary Importance (ASI).

Completion of the DPR 523D form included a reconnaissance survey of all properties within the boundaries of the district, a review of existing research and analysis of the district, additional research, the development of a historic context for the district, and evaluation of the district for significance and integrity. The DPR 523D form was completed in December 2013. Findings determined that the 55th and Dover Residential District is eligible for the California Register of Historical Resources under Criterion 1 (Events) as a strong representative example of a residential neighborhood that developed rapidly between 1906 and 1913 in response to a population increase in Oakland after the 1906 earthquake and the completion of the Key Route System's E Line in 1910, which ran along 55th Street. Of the 143 properties located within the boundaries of the 55th and Dover Residential District, 121 were constructed during the 1906-1913 period of significance. Despite façade alterations at some of these properties, 119 are considered contributing resources because they retain the character defining features that convey the district's significant period of development (further discussed below). The 55th and Dover Residential District qualifies as a historic resource under the California Environmental Quality Act (CEQA).

III. CHILDREN'S HOSPITAL: HISTORIC CONTEXT, SIGNIFICANCE, AND CHARACTER DEFINING FEATURES

HISTORIC CONTEXT

The following is a brief historic context drawn from Page & Turnbull's Children's Hospital HRE Part 1. The full historic context can be found in that document.

Children's Hospital is located at 747 52nd Street, between Martin Luther King Jr. Way and Shattuck Avenue in the Temescal neighborhood of Oakland. The historical development of the hospital began with Solomon Ellsworth Alden, a Connecticut native who purchased land west of present-day Telegraph Avenue in 1852 and constructed his family home on the site of what is now Children's Hospital.[4] After Solomon Alden died in 1881, the Alden property passed into ownership of his daughter Elsie, who, with her husband John McElrath, built a large Queen Anne-style house at 51st and Dover streets.

In 1911, the Baby Hospital Association was formed by a group of Bay Area social workers and nurses to explore the establishment of a hospital specifically for infants and children under the age of five, regardless of creed, nationality, race, or family income. The Baby Hospital Association purchased the McElrath house in 1912 and spent two years renovating the home so that it could function as a hospital. The Baby Hospital, as it was known, was officially opened and dedicated in 1914.

In the 1920s, changes in building code necessitated the construction of a new fireproof masonry hospital building. The Baby Hospital Association secured loans for new construction, and in 1926 selected Oakland architect Edward W. Cannon to design the new hospital. Cannon designed a state-of-the-art steel frame and reinforced concrete L-shaped building in a Northern Italian Renaissance style that reflected the latest social and hygiene theory in hospital design. The new hospital building included two south-facing two-story solariums, as well as a south-facing terrace and a colonnaded porch at the entrance. The Baby Hospital (now known as the A/B Wing) was dedicated in 1928.

The population of the East Bay increased dramatically during World War II, and patient load at the Hospital rose accordingly; between 1940 and 1945, patient load grew from 10,000 visits a year to 24,500 visits a year. In 1945, the Hospital hired the architecture firm of Stone and Mulloy to design a master plan for hospital expansion.[5] The firm specialized in hospital design, and the plan they developed reflected contemporary advances in the field of hospital design, including flexibility of construction schedule and interior spaces that facilitated department cooperation. Work began on the first portion of the proposed master plan, which necessitated the demolition of the outmoded McElrath house. A magnolia tree located directly east of the McElrath house that had been planted in 1860 by female members of the Alden family was preserved during this demolition. The new B/C Wing of the Hospital was dedicated on October 17, 1948.[6]

Between 1947 and 1957, the Hospital's board purchased almost all of the lots and houses surrounding the Hospital on Grove (Martin Luther King Jr. Way), 51st, 52nd, and Dover streets. Although some of these houses served as housing and administration buildings, eventually all were

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[4] Theodore Grover Wurm, "Our Northern Suburb of Temescal" (Oakland: s. n., 1991), 4; Judd, 4.

[5] "The Children's Hospital of the East Bay: Douglas Dacre Stone and Louis B. Mulloy, Architects" (*Architect and Engineer*, December 1945), 16-17.

[6] Agreement between Elmer J. Freethy and the Children's Hospital of the East Bay, August 6, 1946. [Children's Hospital Medical Center Collection, Box 4: Deeds & Legal Documents, Folder 4. Available at the Bancroft Library.]

demolished for hospital expansion. In 1959, the Bruce Lyon Memorial Research Laboratory, designed by Stone, Marraccini and Patterson, was constructed on the southern portion of the hospital property, and in 1962, the William H. and Helen C. Ford Diagnostic and Treatment Center, also designed by Stone, Marraccini and Patterson, was dedicated. The south-facing entrance and lobby of the A/B Wing were expanded and remodeled in 1962, and third story additions were built at the A/B Wing and the B/C Wing.[7]

The construction of the Grove-Shafter freeway in 1968-69 hemmed in any potential Hospital expansion to the east, altered circulation patterns around the Hospital complex, and limited visual access to the A/B Wing. In the 1970s, several additions were made to the hospital complex and approval for larger additions was granted. The West Site Plant, designed by Kaplan/McLaughlin, was constructed adjacent to the west façade of the B/C Wing in 1979.[8] At this time, city approval was received for a new hospital building at the intersection of 52nd and Grove streets, which would adjoin the B/C Wing. The new five-story patient care facility, designed by KMD and known as the Patient Tower, opened on September 12, 1982.[9] This addition reoriented the hospital complex so that it fronted north onto 52nd Street, and further reduced vehicular and visual access to the A/B Wing and the B/C Wing.

More recent construction at Children's Hospital includes the Cafeteria (1987), a one story build-out at the B/C Wing (1987), the Bruce Lyon Memorial Research Center Addition (1992), the Cardiac Catheterization Laboratory (1993), and the Outpatient Center and parking garage (1993). No major new construction has taken place at Children's Hospital since completion of these projects in 1993.[10]

HISTORIC SIGNIFICANCE AND PERIOD OF SIGNIFICANCE

Evaluation of Children's Hospital buildings for California Register eligibility determined that the A/B Wing of the Children's Hospital possesses historic significance under Criterion 1 (Events) as the earliest purpose-built hospital for children in the East Bay, and under Criterion 3 (Architecture) as a representative of a type and style with high artistic values, designed by a locally-known (though not master) architect. However, the A/B Wing was found to be ineligible for listing in the California Register due to compromised integrity. The building maintains integrity of location, workmanship, and association; a moderate degree of integrity of design and materials; and no longer retains integrity of setting or feeling from its period of significance (1926).

Evaluation of Children's Hospital Buildings for eligibility as City of Oakland Designated Historic Properties, using City of Oakland Evaluation Sheets for Landmark Eligibility, determined that the A/B Wing of Children's Hospital has a rating of B, indicating that it is a building of major importance that is not located in a historic district. Oakland Evaluation Sheets use 14 criteria to determine whether a property is eligible as a landmark. The B rating falls within the City of Oakland's significance threshold for eligibility as a City of Oakland Designated Historic Property. Therefore, the A/B Wing qualifies as a historical resource under CEQA.

According to the analysis conducted on the City of Oakland Evaluation Sheet for Landmark Eligibility, the A/B Wing derives its historic significance both from its architecture and its association

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[7] Rutherford & Chekene. SB 1953 Seismic Evaluation: Children's Hospital of Oakland, Vol. 1 of 3. Prepared for Office of Statewide Health Planning and Development, December 2000.

[8] Rutherford & Chekene.

[9] "Come Join Our Celebration," Special Commemorative Issue Celebrating Yesterday and Today (*Bambino: Children's Hospital Medical Center of Northern California*, September 1982).

[10] For more detailed information about the architectural and cultural historic context of Children's Hospital, refer to Section IV [Historic Context] in the Historic Resource Evaluation, appended in this report.

with historic patterns significant to the history of Oakland. Its architectural significance is based on its very good quality of form, including elements of the Northern Italian Renaissance style. The A/B Wing's historic significance also comes from its history as the first children's hospital in the East Bay. The site is intimately connected to a benevolent organization that played a major role in the development of improving the health of the community of Oakland, and has remained in operation in this use since its construction. It also effectively illustrates a broad pattern of Oakland history, namely the establishment of care for the city's children.

Despite alterations, the A/B Wing retains sufficient integrity, according to the criteria laid out in the City of Oakland' Evaluation Sheets, to convey its historic significance.[11]

The period of significance for the hospital is 1912-1926, which extends from the founding of the hospital to the year that the A/B Wing was completed; thus, the period of significance for the A/B Wing is essentially the year of its construction in 1926.

CHARACTER DEFINING FEATURES

For a property to be eligible for inclusion in any historic register, the essential physical features (or character-defining features) that enable the property to convey its historic identity from its period of significance must be evident. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials.

The character defining features of the A/B Wing are:

- The building's footprint; its narrow linear form and its southern orientation reflect the era of the building's construction and its status when built as a modern hospital.
- The ratio of solid to void; the building's evenly spaced smaller windows are characteristic of the Northern Italian Renaissance style which it references.
- Brick and terra cotta cladding; this cladding is original to the building's design and construction, and is representative both of its Northern Italian Renaissance inspiration and the programmatic sanitation and fire-safety requirements of the Baby Hospital.
- Two two-story five-sided bays; these bays were used as solariums during an era when sunlight was believed to have healing qualities and are character defining for their programmatic use.
- Original windows of the primary type and surrounds: the building retains most of its original windows within original window surrounds—paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels—which are representative of the building's era of construction.
- Ornamentation and architectural detail: the building is distinguished by its high level of design detail, including fluted columns with capitals that feature acanthus leaves, urns, fleur-

[11] For more detailed information about the determinations of historic resources, please see the Historic Resource Evaluation Part I: Sections VI [Evaluation of Children's Hospital Buildings for California Register Eligibility], VII [Evaluation of Children's Hospital Buildings for Eligibility as a City of Oakland Designated Historic Property], VIII [Evaluation of the Children's Hospital Complex as a City of Oakland Local Historic District], IX [Status of Children's Hospital Buildings as Historical Resources Under CEQA], and XI [Residential/Commercial Properties Evaluation].

de-lis, cherub's heads, and griffins, molded frieze depicting animal and bird motifs, bambino medallion, and a terra cotta balcony supported by ornamented brackets with floral and acanthus-leaf motifs.

- The spatial openness of the courtyard, which complements the long narrow L-shaped design and the siting of the A/B Wing.
- The magnolia tree, which may have contributed to the siting of the courtyard and hence the design and siting of the A/B Wing.

IV. 55TH AND DOVER RESIDENTIAL DISTRICT: HISTORIC CONTEXT, SIGNIFICANCE, AND CHARACTER DEFINING FEATURES

The 55th and Dover Residential District is a collection of properties that together illustrate the rapid expansion of North Oakland after the turn of the twentieth century, in response to rapid population increase and improvements made to public transportation. The properties' method of sale and construction illustrates an era of physical development in which individual owners purchased lots from small and medium-scale land-holding companies and constructed their own homes or hired independent builders. The district's uniformity of building type (single family and a handful of multi-family houses) and tightly-bounded era of construction give the district a strong association with the period of significance dating 1906-1913.

HISTORIC CONTEXT

Below is a brief historic context for the district; the full historic context is included in the DPR 523D form.

Although the population in Oakland had increased after the Gold Rush, and again increased after the city became the terminus of the Central Pacific trans-continental rail line in 1869, residential settlement did not begin to extend north from Oakland's downtown core until after the establishment of a horse-drawn transit line along Telegraph Avenue in 1872, built to service the new Berkeley campus of the College of California (now University of California, Berkeley).[12] By 1891, steam powered rail service along Shattuck and electric rail service along Grove Street (now Martin Luther King Jr. Way) had the effect of increasing commercial, residential, and even light industrial construction in the unincorporated area between Oakland and Berkeley adjacent to the new transportation lines. Reflecting this increased development, the area of North Oakland which had been known variably as Alden and Temescal officially became part of Oakland by annexation in 1897.

Despite transportation improvements, the 55th and Dover area was largely undeveloped prior to the turn of the century. Although maps show the area platted as the Alpine Tract as early as 1878, the area was not mapped by the Sanborn Fire Insurance Company in 1903, indicating that physical development was sparse enough that it did not warrant inspection by the insurance industry. Orchards were still to be found at 51st and Grove streets, and a large vegetable garden was located at 52nd Street and Shattuck Avenue.

In 1906, the tract was purchased by E. A. Heron, partner in the real estate firm of Heron & Holcomb. Heron was also the vice president of the San Francisco, Oakland & San Jose Railway, an electric streetcar transportation system that was established in 1903 by Francis Marion "Borax" Smith. The San Francisco, Oakland & San Jose Railway, which later became known as the Key Route System, began operating their first streetcar line in October 1903 along Grove Street (now Martin Luther King Jr. Way) between downtown Berkeley and a ferry connection to San Francisco. The Key Route System was from its inception used by Smith as a way to increase revenue for his vast real estate holdings, which he held under the company name the Realty Syndicate. With the Realty Syndicate, Smith purchased large tracts of undeveloped land, and with the Key Route System, he created a way for buyers to reach this land. Although the area surrounding the 55th and Dover Residential District was never owned by the Realty Syndicate, its ownership by the Key Route's vice president, E. A. Heron, in 1906, indicates that it was part of the same development pattern that shaped much of Oakland in the years after the turn of the century.

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[12] Architectural Resources Group, "City of Berkeley Historic Resources Reconnaissance Survey," January 2007, 59.

Construction of the Key Route System's E Line was completed in 1910, although partial service along the line may have begun a few years prior to 1910. Starting at the ferry pier, the route traveled east parallel to 40th Street, northeast parallel to Adeline Street, east along 55th Street, and northeast along Claremont Avenue to a terminus at the Claremont Hotel, which was constructed by the Realty Syndicate to increase ridership on the line. The Realty Syndicate also constructed Idora Park, an amusement park at 56th Street and Telegraph Avenue, which opened in 1903 and was easily accessible by the E Line. Overall, by 1910 the neighborhood was well connected to San Francisco and the rest of the East Bay by the Key Route System.

In addition to improvements in transportation, the drastic population increase in Oakland after the 1906 earthquake likely contributed to the rapid settlement of the 55th and Dover Residential District. Immediately after the earthquake, upwards of 200,000 refugees from San Francisco sought temporary shelter in Oakland. It is estimated that only 50,000 of these people moved back to San Francisco, while the bulk of the rest remained to start life anew in Oakland.[13] A comparison between the Oakland Block Books of 1906 and 1910 shows that while a small proportion of the lots in the 55th and Dover area had been purchased by 1906, very few had been built upon. By 1910, however, the lots were nearly uniformly sold and most had been built upon.

Development was so rapid that by the time the Sanborn Fire Insurance Company returned to the area to complete their 1911 map, not only did they include the area that they had eight years ago skipped, their survey shows a residential neighborhood almost completely built out. In the area that is now bounded by the 55th and Dover Residential District, which today includes approximately 143 buildings, there were only 34 empty lots in 1911, 23 of which were along 55th Street, perhaps reflecting a slight reluctance to build directly along the Key System Route. Almost all of the buildings that were extant in 1911 are still extant today. The 1911 Sanborn Map also shows that residential development extended uniformly south to 52nd Street, in areas that have been replaced by contemporary construction by Children's Hospital (1960-1990s) and the construction of State Route 24 in the late 1960s. A combination of information from Block Books, Sanborn Maps, and building permit records reveals that the majority of construction in the 55th and Dover Residential District took place between 1906 and 1911, and a survey of the neighborhood conducted in November 2013 reveals that the majority of these buildings remain extant.

Development of the 55th and Dover Residential District appears to have followed a pattern described in James Borchert's essay, "Visual Landscapes of a Streetcar Suburb":

> To sell their lots, developers advertised widely and attracted a fairly heterogeneous white, middleclass population. Availability, location, cost, and lot size were the major criteria for a family's site selection. […] Some newcomers purchased lots from developers and either built their own homes, ordered kit houses from Sears, Roebuck, or hired contractors; others rented or purchased lots with homes already built speculatively by developers. Whatever the practice, most builders sited their homes to conform to the setbacks of neighboring ones….[14]

According to research in the *Polk-Hustead Oakland, Berkeley, and Alameda City Directory* and information in the Federal Census, owners of properties in the 55th and Dover Residential District were people much like Borchert describes. Some properties were constructed by their owners either for occupancy or for the rental market. Many were built by local contractors. Some contractors built

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[13] Kevin Fagan, "The Great Quake: 1906-2006—Quake Sparked Boom in East Bay", *The San Francisco Chronicle*, April 14, 2006.
[14] James Borchert, "Visual Landscapes of a Streetcar Suburb", published in *Understanding Ordinary Landscapes*, ed. Paul E. Groth (Yale University Press, 1997) 38.

more than one home in the area, including the Legris Brothers, Fred A. Muller, W. J. Bermingham, Wilson Frank and Leander T. Cook. However, no one builder or property owner dominated the area. Architectural styles included the Classic Box and the one-and-a-half story bungalow, sometimes with Classical ornament.

After the Sanborn Fire Insurance Company mapped the area in 1911, construction quickly filled the remaining empty lots within the boundaries of the 55th and Dover Residential District. Sixteen properties were constructed in 1912 and 1913. After that, construction slowed, with only six properties constructed between 1914 and 1921. A building boom that took place across the entire Bay Area in the 1920s added ten additional properties to the area in 1922 and 1923. Eight additional properties were constructed after 1923; six between 1924 and 1935, and two much later, circa 1970. The 1950 Sanborn Fire Insurance Map shows near-complete build-out of the neighborhood.

The street pattern, lot layout, and residential pattern that was established between 1906 and 1913 has been largely persevered, despite changes to the area including the removal, after 1958, of the Key System Route E along 55th Street, the construction of State Route 24 in the 1960s, the construction of an elevated BART track above Martin Luther King Jr. Way in the 1970s, and the development of the Children's Hospital campus in the 1960s through the 1990s. The area also remains well served by public transportation; after the Key Route System ceased operation in 1958, the Alameda Contra Costa Transit District (AC Transit) continued to run bus lines along Martin Luther King Jr. Way, 55th Street, and Shattuck Avenue. In combination with BART, these busy routes continue to both connect the district to the broader Bay Area and bound the district in a way that reflects its historic pattern of development.

HISTORIC SIGNIFICANCE AND PERIOD OF SIGNIFICANCE

Evaluation of the 55th and Dover Residential District in the DPR 523D form determined that the district is eligible for listing in the California Register of Historical Resources under Criterion 1 (Events/Patterns) because it is "associated with events that have made a significant contribution to the broad patterns of our history.[15]" The District is a representative example of a residential neighborhood that developed rapidly in response to the population increase and the provision of improved public transportation. Between the earthquake in 1906 and the 1910 construction of the Key Route E Line, which ran along 55th Street between the Claremont Hotel and the ferry pier to San Francisco, the 55th and Dover Residential District area, which had been sparse enough not to warrant mapping by the Sanborn Fire Insurance Company in 1903, became a dense residential neighborhood, characterized almost uniformly by two-story Classic Box-style houses and one-and-a-half story bungalows constructed by individual builders. The connection between real estate subdivision and Key Route expansion that is illustrated in this neighborhood —specifically ownership of this land by E. A. Heron, vice-president of San Francisco, Oakland & San Jose Railway (Key Route System)— was an important development pattern in the City of Oakland in the first decade of the twentieth century.

By 1911, the neighborhood was more than 75 percent built out; houses of similar scale were built on remaining empty lots in the 1910s and 1920s. This uniformity of scale, style, and era of construction at one point stretched south to 51st Street and east to Shattuck Avenue; construction of State Route 24 in the 1960s and the development of Children's Hospital of Oakland in the 1960s-1990s has hemmed the district to its current boundaries. While the district is not significant for its architecture, the cohesiveness of style and scale of residences characterizes the short period in which the majority of the neighborhood developed.

[15] "How to Apply the National Register Criteria for Evaluation", (National Register Bulletin 15, National Park Service, revised for the internet 2002, accessed online at http://www.nps.gov/nr/publications/bulletins/nrb15/, April 2013)

The 55th and Dover Residential District's period of significance spans from 1906, when the Earthquake caused a rapid population increase in Oakland, to 1913, when the boom of construction in the area slowed as the neighborhood became largely built-out. This period includes the years in which the E Line of the Key Route was constructed along 55th Street, bringing improved public transportation to the area. The 55th and Dover Residential District is significant at the local level because the two major impetus for its development—the 1906 earthquake and the development of the Key Route System—represent regional, rather than state or national, events.

Despite alterations to the facades of some of the buildings within the 55th and Dover Residential District, the district retains sufficient integrity to transmit its historic significance, according to the criteria laid out by the National Register Bulletin, "Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places."

CHARACTER DEFINING FEATURES

For a property to be eligible for inclusion in any historic register, the essential physical features (or character-defining features) that enable the property to convey its historic identity from its period of significance must be evident. To be eligible, a property must clearly contain enough of those characteristics, and these features must also retain a sufficient degree of integrity. Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials.

The character defining features of the 55th and Dover Residential District are:

- Uniformity of residential building type;
- Pattern of building setbacks;
- Street grid and block pattern;
- Design elements of contributing properties that enable these properties to express their era of construction:
  - Footprint and massing as small one and one-and-a-half story buildings;
  - Architectural style, particularly represented by the Craftsman bungalow and Classic Box;
  - Extant historic materials, including windows, cladding, and ornament; and
  - General fenestration pattern at the primary façade.

V. PROPOSED PROJECT ANALYSIS

PROJECT DESCRIPTION

This project description is based on drawings by HDR and Taylor Architects dated November 2013. These drawings reflect changes to earlier drawings submitted in April 2013 to address comments received during Draft EIR scoping sessions.

The project is proposed to occur in two phases.

Phase 1 would:

- Demolish residence at 5404 Martin Luther King Jr. Way;
- Demolish rear additions at residential buildings at 707 and 715 53rd Street;
- Construct a six-story, 89,100 sq. ft. Outpatient Center at the northeast corner of Martin Luther King Jr. Way and 52nd Street (OPC2);
- Construct a two-story, 1,100 sq. ft. Central Utility Plant adjacent to the extant utility plant;
- Construct a new entrance at Martin Luther King Jr. Way to the existing parking garage;
- Construct a new driveway off Dover Street to access an existing maintenance area adjacent to the existing parking structure and Outpatient Center 1 (OPC1);
- Complete landscape and utility improvements; and
- Complete 95,550 sq. ft. of interior renovations to existing buildings.

Phase 1 construction is anticipated to take approximately 58 months.

Phase 2 would:

- Demolish a modular building at 665 53rd Street and relocate residential buildings at 682 and 688 52nd Street to this location;
- Demolish the rear portions of residential buildings at 671, 675, and 679 53rd Street and construct a two-story 14,500 sq. ft. family residence behind and attached to the retained facades;
- Demolish the residential building at 5212 Dover Street and construct a three-story 27,000 sq. ft. Clinical Support Services building at the northeast corner of 52nd and Dover streets (former site of 5212 Dover Street and 682 and 688 52nd Street);
- Demolish the B/C Wing of Children's Hospital and remove the magnolia tree;
- Demolish the helistop, the Bruce Lyon Memorial Research Building, and trailers;
- Construct a five-story, 43,500 sq. ft. Link Building with a helistop,
- Construct a five-story, 101,000 sq. ft. Patient Pavilion,
- Construct a two-story, 3,800 sq. ft. Central Utility Plant (expansion of the Plant constructed in Phase 1),
- Construct a four-story, 114,900 sq. ft. parking structure;
- Complete site improvements along 52nd Street to facilitate vehicular, pedestrian, and bicycle safety; and
- Complete 40, 342 sq. ft. of interior renovations at existing buildings.

Construction of a cul-de-sac on Dover Street between 52nd and 53rd streets is being considered as a project alternative at build-out. Phase 2 construction is anticipated to take approximately 60 months.

Design elements of new buildings aim to unify the campus, reference materials of existing buildings, and provide visual interest and comfort to the Hospital's young patients. Grade and pedestrian levels of the new buildings are clad primarily in light multi-shade brick, complimenting the existing texture and color at the A/B Wing and Outpatient Building. Upper floor windows and curtain walls incorporate colored glass and metal panels. Light-colored, neutral plaster walls are punctuated by windows in an ordered pattern, with some windows adding colored, bordered frames. The primary patient entrance to the Patient Pavilion and vehicular access to the new parking structure at the southernmost portion of the Hospital campus would open up the center of the campus to people and vehicles; a new circular driveway and extensive landscape improvements are planned for this area. Aluminum canopies signal pedestrian entrances at the existing Patient Tower, the OPC2 and the Patient Pavilion, and aluminum cut-away signage at the new parking structure and the Patient Pavilion assists with placemaking and wayfinding.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environment Quality Act (CEQA) is state legislation (Pub. Res. Code §21000 et seq.), which provides for the development and maintenance of a high quality environment for the present-day and future through the identification of significant environmental effects.[16] Cultural resources are considered an aspect of the environment. For the proposed project at Children's Hospital Oakland, the City of Oakland is the lead agency for preparing and certifying the Environmental Impact Report (EIR) for the project. This Historic Resource Evaluation report will be utilized as a technical report in support of the EIR for the proposed project.

Status of Subject property and district as Historic Resource under CEQA

In completing an analysis of a project under CEQA, it must first be determined if the project site possesses a historic resource. In the City of Oakland, an historical resource under CEQA is a resource that meets any of the following Thresholds of Significance:

1) A resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources;

2) A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

3) A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;

4) Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register of Historical Resources (CEQA Guidelines section 15064.5); or

5) A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

[16] State of California, California Environmental Quality Act, http://ceres.ca.gov/topic/env_law/ceqa/summary.html, accessed 31 August 2007.

A "local register of historical resources" means a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution, unless the preponderance of evidence demonstrates otherwise.

In March 1994, the Oakland City Council adopted a Historic Preservation Element of the General Plan (amended July 21, 1998). The Historic Preservation Element sets out a graduated system of ratings and designations resulting from the Oakland Cultural Heritage Survey (OCHS) and Oakland Zoning Regulations. The Element provides Policy 3.8: "Definition of 'Local Register of Historical Resources' and Historic Preservation 'Significant Effects' for Environmental Review Purposes" related to identifying historic resources under CEQA:

> For purposes of environmental review under the California Environmental Quality Act, the following properties will constitute the City of Oakland's Local Register of Historical Resources:
>
> 1. All Designated Historic Properties (Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties); and
>
> 2. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance.

The Local Register also includes properties within Areas of Primary Importance (API). An API is a district that appears eligible for the National Register of Historic Places.

According to the evaluation provided in Page & Turnbull's Historic Resource Evaluation dated August 5, 2013, the A/B Wing possesses sufficient historic significance and integrity to qualify it as a historic resource eligible for listing as a City of Oakland Designated Historic Property. Therefore, the A/B Wing is considered a historic resource under CEQA

According to the evaluation provided in Page & Turnbull's California Department of Parks and Recreation (DPR) 523D (District Record) form dated December 20, 2013, the 55th and Dover Residential District possesses sufficient historic significance to qualify it as a historic resource eligible for listing in the California Register of Historical Resources. Therefore the 55th and Dover Residential District is considered a historic resource under CEQA.

SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* (*Secretary's Standards*) provide guidance for working with historic resources. The *Secretary's Standards* are used by Federal agencies and local government bodies across the country to evaluate proposed rehabilitative work on historic resources, and are intended to be applied to a wide variety of resource types, including buildings, sites, structures, objects, and districts. The *Secretary's Standards* are a useful analytic tool for understanding and describing the potential impacts of substantial changes to historic resources. Compliance with the *Secretary's Standards* does not determine that a project would not cause a substantial adverse change in the significance of an historic resource. Rather, projects that comply with the *Secretary's Standards* benefit from a regulatory presumption under CEQA that they would have a less-than-significant adverse impact on a historic resource. Projects that do not comply with the *Secretary's Standards* may or may not cause a substantial adverse change in the significance of a historic resource.

The *Secretary's Standards* offers four sets of standards to guide the treatment of historic properties: Preservation, Rehabilitation, Restoration, and Reconstruction. The four distinct treatments are defined as follows:

> **Preservation**: The *Standards for Preservation* "require retention of the greatest amount of historic fabric, along with the building's historic form, features, and detailing as they have evolved over time."
>
> **Rehabilitation**: The *Standards for Rehabilitation* "acknowledge the need to alter or add to a historic building to meet continuing new uses while retaining the building's historic character."
>
> **Restoration**: The *Standards for Restoration* "allow for the depiction of a building at a particular time in its history by preserving materials from the period of significance and removing materials from other periods."
>
> **Reconstruction**: The *Standards for Reconstruction* "establish a limited framework for re-creating a vanished or non-surviving building with new materials, primarily for interpretive purposes."[17]

Typically, one set of standards is chosen for a project based on the project scope. In this case, the proposed project includes new construction on the Children's Hospital campus to meet the evolving use needs of the institution. New construction for the proposed project will take place directly adjacent to the A/B Wing, and will take place within the boundaries of the 55th and Dover Residential District. Therefore, the *Standards for Rehabilitation* will be applied to evaluate the potential impacts of the proposed project on both of these historic resources.

Standards for Rehabilitation-The A/B Wing of Children's Hospital

The following analysis applies each of the *Standards for Rehabilitation* to the proposed project at Children's Hospital in relation to the A/B Wing. This analysis is based upon a package of architectural plans submitted by HDR and Taylor Architects, dated November 1, 2013.

Rehabilitation Standard 1: *A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.*

The A/B Wing historically included large open-plan wards to allow nurses to maintain surveillance of the maximum number of patients at one time, and a solarium to provide sunlight to patients. These historic uses have long been supplanted, due to changing accepted medical practice; patients are housed in more recently constructed areas of the Hospital, and the A/B Wing has been subdivided into administrative offices and storage space. The proposed project retains office use in the A/B Wing, which represents minimal to no change and does not impact the building's footprint, southern orientation, distinctive brick and terra cotta cladding, solariums, fenestration pattern and materials, or its ornamentation.

Therefore, as designed, the proposed project will be in compliance with Rehabilitation Standard 1.

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[17] Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* (Washington, D.C.: U.S. Department of the Interior, 1995), 2.

Rehabilitation Standard 2: *The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.*

The proposed project does not include the removal or alteration of any distinctive materials at the A/B Wing, nor does the proposed project include the alteration of any A/B Wing features such as footprint, southern orientation, distinctive brick and terra cotta cladding, solariums, fenestration pattern and materials, or ornamentation.

The proposed project includes the reconfiguration of the existing courtyard, which is located to the west of the A/B Wing. The openness of this courtyard is a spatial feature that characterizes the property. However, the proposed project includes the construction of a new courtyard, which is to be smaller than the existing courtyard, but still maintains the spatial openness that complements the narrow, L-shaped design of the A/B Wing. Therefore, the project will maintain the character-defining spatial openness at that location, and the loss of the existing courtyard will not affect the historic significance and overall integrity of the A/B Wing.

The proposed project includes the removal of the magnolia tree, which is located west of the A/B Wing and may have contributed to the siting of the courtyard and the A/B Wing. The magnolia tree has been identified as a supportive landscape feature that characterizes the A/B Wing, and therefore the removal of the magnolia tree does not comply with Standard 2.

Due to the loss of the magnolia tree, which has been identified as a character-defining supportive landscape feature of the A/B Wing, the proposed project will <u>not</u> be in compliance with Rehabilitation Standard 2.

Rehabilitation Standard 3: *Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, will not be undertaken.*

The proposed project will not create a false sense of history. New construction adjacent to the A/B Wing will be built using modern materials such as glazed curtain walls and metal spandrel panels. Materials that replicate the color and texture of the A/B Wing (brick facing) will be applied in a way that is referential rather than replicative. New construction will be recognized as a physical record of its time, place, and use. Thus, no conjectural features or elements from other historical properties will be introduced.

As designed, the proposed project will be in compliance with Rehabilitation Standard 3.

Rehabilitation Standard 4: *Changes to a property that have acquired significance in their own right will be retained and preserved.*

The A/B Wing was constructed in 1926 and was altered circa 1948 with a third story addition at the east end of the south façade . It was altered again in 1962 with a third story addition at the northeast corner of the building and replacement of the original arcade entrance with a two-story projecting entrance in the Modern style. None of these alterations have been identified as character-defining features of the A/B Wing, and they have not acquired significance in their own right. Additionally, the proposed project does not include any work that will impact these alterations.

As designed, the proposed project will be in compliance with Rehabilitation Standard 4.

Rehabilitation Standard 5: *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.*

The extant distinctive historic materials, features, and finishes on the A/B Wing, including brick and terra cotta cladding, solariums, original windows, design detail including fluted columns, capitals with acanthus leaves, urns, fleur-de-lis, cherubs heads, griffins, molded frieze with animal motifs, bambino medallion, and floral brackets, will be retained.

As designed, the proposed project will be in compliance with Rehabilitation Standard 5.

Rehabilitation Standard 6: *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

The proposed project does not include any work where deteriorated historic features will be repaired or replaced.

As designed, the proposed project will be in compliance with Rehabilitation Standard 6.

Rehabilitation Standard 7: *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

The proposed project does not include any work where chemical or physical treatments will be undertaken.

As designed, the proposed project will be in compliance with Rehabilitation Standard 7.

Rehabilitation Standard 8: *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measure will be undertaken.*

The proposed project does include excavation work. If any archaeological material should be encountered during this project, construction should be halted and the City of Oakland's standard procedures for treatment of archeological materials should be adhered to.

If the proper procedure is undertaken, the proposed project will be in compliance with Rehabilitation Standard 8.

Rehabilitation Standard 9: *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property and environment.*

Phase 1 of the proposed project does not include new construction adjacent to or visible from the A/B Wing. Phase 2 includes the demolition of the B/C Wing, which is attached to the western terminus of the east/west portion of the A/B Wing, and the construction in its place of a five-story Link building with a helistop. The project also includes the demolition of the existing helistop, several portable buildings, and the Bruce Lyon Research Center and Addition, and the construction of a five-story Patient Pavilion west of the A/B Wing and a four-story parking structure south of the

A/B Wing. Lastly, the proposed project includes the removal of the magnolia tree located west of the A/B Wing.

The proposed project will not destroy any historic materials or features of the A/B Wing. Although the proposed project does include the demolition of the existing courtyard, which provides character-defining spatial openness to the A/B Wing, the project includes the construction of a new courtyard which will maintain a similar degree of spatial openness. Therefore the loss of the existing courtyard will not have an impact on the A/B Wing. The proposed project includes the removal of the magnolia tree, which has been identified as a character-defining supportive landscape feature of the A/B Wing. Therefore the removal of the magnolia tree does not comply with Standard 9. Demolition of the other features in the courtyard has no impact because these features are not considered of historic significance.

New construction adjacent to the A/B Wing will be differentiated from the A/B Wing in style, scale and some materials. New construction is modern in style, four and five stories tall, and includes materials such as glazed curtain walls, plaster, and painted aluminum panels. In reference to the historic brick cladding at the A/B Wing, new construction incorporates light colored brick cladding in its materials treatment. The brick is used primarily to frame the perimeters of facades at new buildings. At the Link Building, which will be constructed directly adjacent to the west terminus of the east-west portion of the A/B Wing, materials are simple glazing and light colored brick cladding. Generally, new construction is differentiated but compatible with the A/B Wing with regard to materials.

The proposed project includes the construction of the five-story Patient Pavilion, which is to be connected to the Link Building and located west of the A/B Wing. The Patient Pavilion will have a curved footprint, slightly concave around the north/south axis of the A/B Wing. The east façade of the Patient Pavilion includes a concentration of façade ornament, including projecting window boxes with painted aluminum frames, painted aluminum spandrel panels, aluminum entry canopy, and aluminum cut-away signage. This ornament is different in theme, scale, color, material, and dimensional representation (2-D at the Patient Pavilion versus 3-D at the A/B Wing) and competes with rather than works in concert with the character-defining ornament of the A/B Wing, a concentration of which is located at the solarium at the southern terminus of the north/south portion, physically close to and in clear visual conversation with the east façade of the Patient Pavilion. The concentration and style of decorative ornament of the Patient Pavilion façade, in close proximity to the southern terminus of the A/B Wing, is not compatible with the historic style, materials, and ornament that characterizes the A/B Wing. Thus, the design of the eastern façade of the Patient Pavilion does not comply with Standard 9.

The parking garage, which is also located south of the A/B Wing close to the solarium, does not represent an impact on the A/B Wing because it is further away, only four stories in height, and includes simple facade materials.

As designed, the proposed project will <u>not</u> be in compliance with Rehabilitation Standard 9.

Rehabilitation Standard 10: *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.*

All new construction will be undertaken in a way that if it is removed in the future, the essential form and integrity of the A/B Wing would be unimpaired. However, the removal of the magnolia tree can not be undone, and therefore the essential integrity of the environment of the A/B Wing will be affected by the proposed plan.

As designed, the proposed project will <u>not</u> be in compliance with Rehabilitation Standard 10.

Summary of Standards Compliance in Relation to the A/B Wing: The proposed project is in compliance with Rehabilitation Standards 1, 3, 4, 5, 6, 7, and 8. The proposed project is <u>not</u> in compliance with Rehabilitation Standards 2, 9, and 10. Projects that do not fully comply with the *Secretary's Standards* may or may not cause a substantial adverse change in the significance of a historic resource. An analysis of the degree of project-specific impacts and suggested project improvement recommendations are included in a later section of this report.

Standards for Rehabilitation- 55th and Dover Residential District

The following analysis applies each of the *Standards for Rehabilitation* to the proposed project at Children's Hospital in relation to the 55th and Dover Residential District ("District"). This analysis is based upon district boundaries established in the California Department of Parks and Recreation (DPR) 523D (District Record) form completed in December 2013 and architectural plans submitted by HDR and Taylor Architects, dated October 2013.

Rehabilitation Standard 1: *A property (district) will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.*

The 55th and Dover Residential District has historically been used as a residential district. This use is expressed in the district's uniformity of building type and brief era of construction (1906-1913), its pattern of building setbacks, and its regular street grid and block patterns. The use is also expressed in the design elements of contributing properties that enable these properties to express their era of construction, including the footprint, massing, architectural style, extant historic materials, and general fenestration pattern at the primary façades.

The proposed project includes new construction within the boundaries of the district that retains the district's historic use and requires minimal change to the district's distinctive materials, features, spaces and spatial relationships. New construction within the boundaries of the district includes the demolition of rear additions of the residential buildings at 707 and 715 53rd Street and construction of a new driveway off Dover Street to access the existing maintenance area adjacent to the existing parking structure and OPC1. The project also includes demolition of the rear portions of residential buildings at 679 53rd Street (not a district contributor), 675 53rd Street, and 671 53rd Street and construction of a two-story family residence building at the rear of these three facades that connects the buildings. This new construction does not demolish the facades of any existing residential buildings in the district, nor does it change the residential use of any existing buildings that are currently in residential use. The proposed project does not affect the district's historic use.

Therefore, as designed, the proposed project will be in compliance with Rehabilitation Standard 1.

Rehabilitation Standard 2: *The historic character of a property (district) will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize the property will be avoided.*

The historic character of the 55th and Dover Residential District is conveyed by its uniformity of building type and brief period of construction (1906-1913), pattern of building setbacks, regular street grid and block patterns, and in the design elements of contributing properties.

The proposed project includes new construction within the boundaries of the district that retains the district's characteristic materials, features, spaces and spatial relationships. New construction within the boundaries of the district does not impact the setbacks or the primary facades of any contributing properties. Demolition of rear additions of the residential buildings at 707 and 715 53rd Street and the construction of a new driveway off Dover Street to access the existing maintenance area adjacent to the existing parking structure and OPC1 do not impact the historic character of these buildings. Demolition of the rear portions of the residential buildings at 679 53rd Street (not a District contributor), 675 53rd Street, and 671 53rd Street and construction of a connecting two-story family residence building at the rear of these three facades does not demolish the facades of any existing residential buildings. At two stories in height, the new construction does not rise above the historic massing of many of the residential buildings in the district. New construction within the boundaries of the district does not impact the district's historic character.

The EIR evaluates a project alternative that includes construction of a cul-de-sac on Dover Street between 52nd and 53rd streets. The street grid and regular block and lot pattern are character-defining features of the District. Reconfiguration of Dover Street between 52nd and 53rd streets to include a cul-de-sac would therefore affect the district's historic character and would not comply with Standard 2.

The proposed project will be in compliance with Rehabilitation Standard 2 if it does not implement the project alternative to create a cul-de-sac on Dover Street between 52nd and 53rd streets. However, if changes to the street grid are included in new construction, the proposed project will not be in compliance with Standard 2.

Rehabilitation Standard 3: *Each property (district) will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, will not be undertaken*.

The proposed project includes the removal of the rear portion of three buildings on 53rd Street (671, 675, and 677-679 53rd Street) and the construction of a family housing structure that unifies these three facades. The family housing structure is designed such that the new portions of the building are substantially set back from the retained facades, which differentiates the new construction from the extant buildings and enables the three existing facades to retain their ability to express their era of construction. New portions of the family housing structure reference the existing structures in its stucco cladding and roof form, but uses massing and fenestration that clearly differentiate the new construction form the existing buildings. Overall, this part of the proposed project will not create a sense of false historical development in the district.

As designed, the proposed project will be in compliance with Rehabilitation Standard 3.

Rehabilitation Standard 4: *Changes to a property (district) that have acquired significance in their own right will be retained and preserved.*

The period of significance for the 55th and Dover Residential District is 1906, when the earthquake caused a rapid increase in population in Oakland, through 1913, when the area was largely built out and the rapid pace of residential construction began to wane. All character-defining features of the district (pattern of building setbacks, its regular street grid and block patterns, and in the design elements of contributing properties) were established during the period of significance, and no additional features have acquired significance since the close of that period. Thus, there are no changes to the district that have acquired significance in their own right that should be retained or preserved.

As designed, the proposed project will be in compliance with Rehabilitation Standard 4.

Rehabilitation Standard 5: *Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property (district) will be preserved.*

Demolition will occur at the rear of existing buildings at 707, 715, 671, 675, and 679 53rd Street and as such does not impact any distinctive materials, features, finishes, construction techniques, or examples of craftsmanship that characterize the district's public streetscape.

As designed, the proposed project will be in compliance with Rehabilitation Standard 5.

Rehabilitation Standard 6: *Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.*

The proposed project as described does not include any action which will affect deteriorated historic features of the district.

As designed, the proposed project will be in compliance with Rehabilitation Standard 6.

Rehabilitation Standard 7: *Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.*

The proposed project does not include any action which will use chemical or physical treatments to historic materials in the District.

As designed, the proposed project will be in compliance with Rehabilitation Standard 7.

Rehabilitation Standard 8: *Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measure will be undertaken.*

The proposed project will include some excavation within the boundaries of the district, in advance of new construction of family housing on 53rd Street. If any archaeological material should be encountered during excavation, construction should be halted and the City of Oakland's standard procedures for treatment of archeological materials should be adhered to.

As designed, the proposed project will be in compliance with Rehabilitation Standard 8.

Rehabilitation Standard 9: *New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property (district). The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, proportion, and massing to protect the integrity of the property (district) and environment.*

As discussed in Standards 2 and 5, demolition and construction which is located within the boundaries of the 55th and Dover Residential District does not destroy historic materials, features, or the publically visible spatial relationships that characterize the district. As discussed in Standard 3, new construction within the district boundaries will be sufficiently differentiated from yet compatible in use, scale, and massing with the existing historic buildings. The integrity of the district will not be impacted by new construction within the boundaries.

The EIR evaluates a project alternative that includes construction of a cul-de-sac on Dover Street between 52nd and 53rd streets. The street grid and regular block and lot pattern are character-defining features of the district.

The proposed project will be in compliance with Rehabilitation Standard 9 if it does not implement the project alternative to create a cul-de-sac on Dover Street between 52nd and 53rd streets. However, if changes to the street grid are included in new construction, the proposed project would affect one of the district's character-defining features and would not be in compliance with Standard 9.

Rehabilitation Standard 10: *New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property (district) and its environment would be unimpaired.*

The proposed project includes the removal of the rear portion of three buildings on 53rd Street (671, 675, and 677-679 53rd Street) and the construction of a family housing structure that unifies these three facades. If this unifying new construction were removed in the future, the essential publically visible form of the district as a whole would not be affected, particularly since the primary facades of the three buildings would remain in place.

As designed, the proposed project will be in compliance with Rehabilitation Standard 10.

Summary of Standards Compliance in Relation to the 55th and Dover Residential District: The proposed project is in compliance with Rehabilitation Standards 1 through 10 if it does not include the reconfiguration of Dover Street with a cul-de-sac. The proposed project is not in compliance with Standards 2 and 9 if it does include a reconfiguration of Dover Street. Projects that do not fully comply with the *Secretary's Standards* may or may not cause a substantial adverse change in the significance of a historic resource. An analysis of the degree of project-specific impacts and suggested project improvement recommendations are included in a later section of this report

GUIDELINES FOR DETERMINATION OF SIGNIFICANT ADVERSE CHANGE UNDER CEQA

According to CEQA, a "project with an effect that may cause a substantial adverse change in the significance of a historic resource is a project that may have a significant effect on the environment."[18] Substantial adverse change is defined as: "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historic resource would be materially impaired."[19] The significance of a historic resource is materially impaired when a project "demolishes or materially alters in an adverse manner those physical characteristics of a historic resource that convey its historical significance" and that justify its inclusion in, or eligibility for inclusion in, the California Register, or account for its inclusion in a local register.[20] However, a project may cause a substantial change in a historic resource but still not have a significant adverse effect on the environment as defined by CEQA as long as the change has an impact on the historic resource that is determined to be less-than-significant, negligible, neutral or even beneficial.

[18] CEQA Guidelines subsection 15064.5(b).
[19] CEQA Guidelines subsection 15064.5(b)(1).
[20] CEQA Guidelines subsection 15064.5(b)(2).

ANALYSIS OF PROJECT-SPECIFIC IMPACTS UNDER CEQA

Both the A/B Wing of Children's Hospital Oakland and the 55th and Dover Residential District are considered to be historic resources under CEQA, and therefore, the proposed project must be evaluated for potential impacts on the site. This section provides an analysis of the impacts of the proposed project, in order to determine if the project will cause a substantial adverse change to the A/B Wing and the 55th and Dover Residential District.

IMPACT 1.0 — ***The proposed project would remove the magnolia tree, which has been identified as a character-defining supportive landscape element of the A/B Wing. (Less-Than-Significant)***

Analysis of Impact

The magnolia tree is located west of the A/B Wing of Children's Hospital, and according to a plaque that is located at the base of the tree, was planted in 1860 by female members of the Alden family, original land owners of the site. The magnolia tree is therefore the oldest extant landscape feature at the Children's Hospital campus. The magnolia tree may have contributed to the siting of the McElrath (Alden family) house that served as the original Baby Hospital (built between 1878 and 1900), because it shaded the front porch of that house. The house was extant when the A/B Wing was constructed. Thus, the tree served in a tangential way as an element which may have shaped the siting of the courtyard and the A/B Wing itself. The Children's Hospital's women's auxiliary fundraising group adopted the tree as a symbol and by the time the A/B Wing was constructed in 1926, had been calling itself the Branches, in reference to the magnolia tree, for approximately ten years.

The removal of the magnolia tree in advance of new construction for the proposed plan removes the oldest landscape element from the site, and eliminates the supportive landscape element's ability to give context to the site of the A/B Wing. However, the removal of the magnolia tree does not render the A/B Wing unable to convey its historical significance, as the building retains the majority of its character-defining features, including its footprint, massing, fenestration material and pattern, cladding, ornament, and surrounding spatial openness. Therefore, the removal of the magnolia tree represents a <u>less-than-significant CEQA impact</u> on the A/B Wing. Two project improvement recommendations are included in the next section of this report that address the loss of one of the A/B Wing's character-defining features.

IMPACT 2.0 — ***The proposed project would reconfigure the existing courtyard, which has been identified as a character-defining supportive landscape element of the A/B Wing, and replace it with a smaller courtyard. (Less-Than-Significant)***

Analysis of Impact

The courtyard was created by the siting of the Hospital's first purpose-built building, the L-shaped A/B Wing. The presence of the open space was integral to the design of the A/B Wing, which depended on sunlight, fresh air, and cross breeze, which was considered medicinal at the time, as part of the healing intention of the hospital.. It is the spatial openness of the courtyard, rather than the present individual physical elements of the courtyard, that is considered a character-defining supporting landscape feature of the A/B Wing. This openness gives context to the programmatic design of the A/B Wing, and has the additional benefit of allowing exterior character defining features of the A/B Wing (cladding, solariums, fenestration, and ornament) to be seen.

Because the present individual physical elements of the courtyard are not character-defining, the removal of the existing courtyard and its replacement with a new courtyard does not represent a negative impact on the A/B Wing. The replacement of the existing courtyard with another courtyard, although slightly smaller than the existing courtyard, retains the spatial openness that complements the A/B Wing's L-shaped design and siting, which is what makes the courtyard a supportive character-defining feature of the A/B Wing. The removal of the existing courtyard and the installation of a slightly smaller courtyard represents a less-than-significant impact on the A/B Wing. One project improvement recommendation is included in the next section of this report that addresses the change to one of the A/B Wing's character defining features.

IMPACT 3.0 ***The proposed project includes a concentration of façade ornament at the eastern side of the Patient Pavilion that is not compatible in style, materials, or ornament with the character-defining façade ornament features that are concentrated at the southern end of the A/B Wing (Less-Than-Significant)***

Analysis of Impact

The Patient Pavilion is a five-story building with a one-story mechanical penthouse that will be located west of the A/B Wing, at the site currently occupied by the B/C Wing. The footprint of the Patient Pavilion is curved in a convex shape that slightly wraps the southern portion of the A/B Wing. The east façade of the Patient Pavilion includes a concentration of ornament, including projecting window boxes with painted aluminum frames, painted aluminum spandrel panels, aluminum entry canopy, and aluminum cut-away signage. This ornament is different in theme, scale, color, material, and dimensional representation (2-D at the Patient Pavilion versus 3-D at the A/B Wing) from the character-defining ornament of the A/B Wing, a concentration of which is physically close to and in clear visual conversation with the east façade of the Patient Pavilion. The concentration and style of decorative ornament at t competes with and is not compatible with the historic style, materials, and ornament that characterizes the A/B Wing.

The impact of design incompatibility with the A/B Wing is less-than-significant for several reasons.

- It is understood that the design intent of the facade of the Patient Pavilion is to provide visual interest and comfort to young patients.
- It is understood that the façade of both the historic A/B Wing and the Patient Pavilion reflect the design intent of their respective eras; the A/B Wing design reflects the early 20th century understanding that light, fresh air, and sun contributed to health, while the Patient Pavilion design reflects the current practice of providing visual interest (playful design and color) to relax and comfort young patients.
- The overall design of the Patient Pavilion has the advantage of changing traffic circulation patterns at the Hospital campus and bringing the A/B Wing into sight of more people. The A/B Wing is currently only partially visible to the public from State Route 24. In this way, the design of the Patient Pavilion will provide the A/B Wing greater opportunity to convey its historic significance.
- The overall design of the Patient Pavilion has the advantage of relocating a primary entrance to the Hospital closer to its historic primary entrance at the south side of the east-west ell of the A/B Wing.
- The design of the Link Building, which is much more subdued than that of the Patient Pavilion, works to provide a visual "link" between the differing architectural styles of the Patient Pavilion and the A/B Wing.

- The presence of a driveway and courtyard space between the two buildings provides an adequate spatial buffer to allow each building to be viewed as an independent structure, thus reducing the potential for the Patient Pavilion to visually overshadow the A/B Wing.

The construction of the Patient Pavilion with its current façade design does not render the A/B Wing unable to convey its historical significance, as the building retains its character-defining features, including its footprint, massing, fenestration material and pattern, cladding, ornament, and surrounding spatial openness. Therefore, the construction of the Patient Pavilion with its current façade design represents a less-than-significant impact on the A/B Wing. One project improvement recommendation is included in the next section of this report that addresses the less-than-significant impact of the Patient Pavilion on the A/B Wing.

IMPACT 4.0 ***An alternative of the proposed project includes the reconfiguration of the block of Dover Street between 51st and 52nd with a cul-de-sac. The street grid and regular block pattern are character-defining features of the 55th and Dover Residential District and changes to the street grid and block pattern would affect this character-defining feature (Less-Than-Significant)***

The proposed project considers a project alternative that includes the reconfiguration of Dover Street between 52nd and 53rd streets by installing a cul-de-sac. The street grid and regular block and lot pattern are character-defining features of the district, and the change to this character-defining feature represents and impact to the district. However, this change is contained to one block of street out of nine within the district, and would be located at the edge, rather than in the center of the district. Overall, the change of street grid at one block of street in the district does not render the district unable to convey its historic character. The district retains the vast majority of its character-defining features, including the uniformity of building types and design elements at these buildings, its pattern of building setbacks, and the street grid and block pattern at eight out of nine blocks of street in the District. One project improvement recommendation is included in the next section of this report that addresses the change to one of the District's character-defining features.

Summary of Impacts

The proposed project at Children's Hospital retains many of the character-defining features of the A/B Wing of the Hospital and the 55th and Dover Residential District. Some aspects of the proposed project, including opening traffic circulation to the south of the A/B Wing, will lead to an increase in the ability of that historic resource to express its significance to a broader audience of people. Evaluation of the proposed project revealed several <u>less-than-significant project-specific impacts</u> to the A/B Wing or the 55th and Dover Residential District, which are outlined above.

PROJECT IMPROVEMENT RECOMMENDATIONS

The proposed project's impacts to historic resources at the project site have been determined to be less-then-significant in this analysis. No mitigation measures are required for this project. However, while the proposed project as designed is in compliance with the majority of the *Secretary's Standards*, it is not in compliance with all of the *Standards*. To facilitate additional compliance, the following project improvement recommendations are provided to the design team. These project improvement recommendations should be carefully considered and incorporated into design revisions and alternatives where possible. However, even without the implementation of these project improvement recommendations, project impacts would be less-than-significant.

<u>Project Improvement Recommendation 1.0 —Incorporate a new mature magnolia tree into the site plan of the proposed project, as close as possible to the historic location of the magnolia, within the constraints of the site plan.</u>

According to a feasibility analysis provided by arborist Deanne Ecklund of HortScience Inc. to CLEO Construction Management regarding the relocation/transplantation of the magnolia tree (April 7, 2014), the magnolia tree "has a greater potential for decline than the likelihood it would survive and thrive for many years after relocation." Although the removal of the historic magnolia tree has a less-than-significant impact on the historic significance of the A/B Wing, its loss does remove some historic continuity from the site. The incorporation of a replacement magnolia tree should be considered for the site plan, in a location that is close to the site of the historic magnolia while still enabling the Hospital to reach all of its programmatic needs. The center of the planned traffic circle, south of the A/B Wing, may be a good place for the tree; caution should be taken, however, not to impact the visibility of the solarium at the southern portion of the A/B Wing, which is a character-defining feature of the A/B Wing.

<u>Project Improvement Recommendation 1.1 —Install a permanent, high-quality plaque or simple interpretive panel near the magnolia tree which includes information about the magnolia tree, including its historic relation to the site and its influence on the naming of the Branches.</u>

Similar to the plaque that is currently located under the magnolia tree, a new plaque or a simple interpretive panel which explains the no-longer-extant magnolia's historic relation to the site and its influence on the naming of the Branches, and will help visitors understand the reason the magnolia tree was a character-defining supportive landscape feature of the A/B Wing. This plaque or interpretive panel should clearly state that the tree is a new tree, in order to avoid potential false historicism.

Project Improvement Recommendation 2.0 — Plan and install a new courtyard which retains a level of spatial openness similar to the level of spatial openness at the extant courtyard.

A new courtyard should include landscape design that retains a sense of spatial openness, in order to allow the A/B Wing to continue to be able to express its historic programmatic design, which required spatial openness to allow for sunlight, fresh air, and cross breeze.

In order to minimize any potential impact on the A/B Wing, the design of the new courtyard should retain a level of spatial openness that is similar to the existing courtyard. The program of the courtyard should not include plants, trees or other elements that, through height, quantity, or density, obscure the A/B Wing or impede spatial openness.

Project Improvement Recommendation 3.0— A refinement of the design of the eastern portion of the Patient Pavilion should be given consideration by the design team. Assuming that changes to the façade design will have no negative effect on the programmatic needs of the Hospital, recommendations include refining the curtain wall façade of the Pavilion as it transitions into the Link Building and/or incorporating more direct design cues from the A/B Wing.

Project Improvement Recommendation 4.0—Project plans that do not include the reconfiguration of Dover Street between 52nd and 53rd Streets should be chosen over project plans that would include reconfiguration of this block.

As currently designed, the proposed project retains the existing street grid and block pattern at the 55th and Dover Residential District, which is one of the character-defining features of this district. Project alternatives include the construction of a cul-de-sac on Dover Street between 52nd and 53rd Street. Although a change to this one block of the district has been found to have a less-than-significant impact on the historic district, it is recommended that the project proceed without changes to the existing street grid and block configuration in the district.

VI. CONCLUSION

The A/B Wing of the Children's Hospital of Oakland and the 55th and Dover Residential District are both historic resources as defined by CEQA. As such, the proposed project at Children's Hospital was evaluated using the *Secretary of the Interior's Standards for the Treatment of Historic Properties* to identify potential impacts to these historic resources. Overall, the proposed project represents fairly few project specific impacts for a project of this size and complexity, all of which were found to be less-then-significant. Less-than-significant impacts are acceptable and will enable the Hospital to upgrade hospital infrastructure and systems while retaining the integrity of the historic resources on and adjacent to its site. Due to the identification of several less-than-significant project-specific impacts, recommended project improvement measures are included in this report that should be considered by the design team. However, as currently designed, the proposed project at Children's Hospital would not impact the eligibility of the A/B Wing for listing as a City of Oakland Designated Historic Property or the 55th and Dover Residential District for listing in the California Register of Historical Resources.

CUL-4 State of California Department of Parks and Recreation Form 523 Record (DPR 523) for the 55th and Dover Residential District (Page & Turnbull)

*NRHP Status Code 3CS

*Resource Name or # (Assigned by recorder) **55th and Dover Residential District**

D1. Historic Name N/A D2. Common Name: N/A

***D3. Detailed Description** (Discuss overall coherence of the district, its setting, visual characteristics, and minor features. List all elements of district.):

The 55th and Dover Residential District was previously identified in the Oakland Cultural Heritage Survey (OCHS) on a DPR 523A (Primary Record) form in 1996 and was given a National Register Status Code of 7 ("Not evaluated") and an OCHS rating as an Area of Secondary Importance (ASI). The buildings within the district were given OCHS ratings for local significance based on a windshield survey. This DPR523D form contains a historic context for the district and evaluates it for eligibility to the California Register of Historical Resources.

The 55th and Dover Residential District is located in North Oakland and includes 143 properties on eight blocks, with Dover Street bisecting the neighborhood in the north-south direction (see map on page 3). The street pattern is a regular grid characterized by 40' x 137' lots, and the terrain is flat. Properties within the district boundaries are solely residential in type, and have similar setbacks from the street. Buildings are all one, one-and-a-half, or two stories, and construction dates range from 1906 to 1930, with two lots featuring post-1950 construction. Approximately 85 percent of construction within the district boundaries took place in the eight-year range between 1906 and 1913. (Continued on page 2).

***D4. Boundary Description** (Describe limits of district and attach map showing boundary and district elements.):

The district is bounded on the north by 55th Street, and includes the residential properties located on the north side of 55th. The district is bounded on the east by both Shattuck Avenue (excluding commercial properties) and the State Route 24 overpass to the southeast. The district is bounded on the west side by Martin Luther King Jr. Way; however, all of the buildings facing west onto Martin Luther King Jr. Way are excluded. (Continued on page 2)

***D5. Boundary Justification:**

The district is bounded largely in relation to transportation thoroughfares. At the west, Martin Luther King Jr. Way was the historic location of a north-south transportation line that brought residential settlement to the area, and continues to be a busy thoroughfare with a raised BART track. The boundary excludes the buildings that face onto Martin Luther King Jr. Way because they are generally commercial buildings that were not constructed during the period of significance for the district. At the north, 55th Street was the location of the Key System Route E, which branched off from the north-south route and further encouraged residential settlement in the area. (Continued on page 2)

D6. Significance: Theme Residential Development, Transit **Area** North Oakland
Period of Significance 1906-1913 **Applicable Criteria** 1
(Discuss district's importance in terms of its historical context as defined by theme, period of significance, and geographic scope. Also address the integrity of the district as a whole.)

Historic Context

The 55th and Dover Residential District is a collection of properties that together illustrate the rapid expansion of North Oakland after the turn of the twentieth century, in response to rapid population increase and improvements made to public transportation. The properties' method of sale and construction illustrates an era of physical development in which individual owners purchased lots from small and medium-scale land-holding companies and constructed their own homes or hired independent builders. The district's uniformity of single family (and a handful of multi-family) residences, built during a tightly-bounded era of construction, give the district a strong association with the period of significance dating from 1906 to 1913. (Continued on page 2)

***D7. References** (Give full citations including the names and addresses of any informants, where possible.):
See page 36.

***D8. Evaluator:** Stacy Farr and Christina Dikas **Date:** May 5, 2014
Affiliation and Address Page & Turnbull, Inc.
1000 Sansome Street, Suite 200, San Francisco CA 94111

D3. Detailed Description, Cont.
Buildings are of wood-frame construction. The most common building and style type is the one-and-a-half story bungalow, characterized by an asymmetrical primary façade, entry porch, wood shingle or horizontal wood shiplap siding, hipped roof, and hipped or front-gable dormer. Also common in the district is the two-story Classic Box, characterized by an asymmetrical first story and symmetrical second story at the primary façade, rectangular massing, low pitched hipped roof, hipped dormer, and Classical decorative elements. Some Classic Boxes in the district were constructed as duplexes, while others have been converted to duplexes.

Later construction in the district in the 1920s includes small stucco-clad two-story apartment buildings with Classical or Mediterranean Revival design details and one-and-a-half story bungalows, similar in form to the earlier constructed bungalows but clad in stucco.

Some properties in the district feature design details such as clinker brick foundations and chimneys, leaded multi-lite clear and stained glass windows, shaped bargeboards, extended rafter beams and tails, egg and dart molding, dentil molding, modillions, columns with Corinthian capitals, and carved Classical molding. Properties were largely constructed by individual builders and contractors or by the property owner; only a handful of properties have identified architects, none of which were master builders.

Integrity of properties in the district ranges from excellent to fair. While the district retains overall integrity, common façade alterations at individual properties include the replacement of original windows with aluminum sliding sash or vinyl double-hung or casement windows; replacement of original cladding with contemporary composite shingle or vinyl siding; reconfiguration of original single entry to include two entries; partial enclosure of entry porches; and raising one-and-a-half story buildings to include full basements or at-grade or below-grade garages. Photographs, descriptions, and basic construction and ownership information about all properties within the boundaries of the district are included on the continuation sheets of this DPR 523D Form.

D4. Boundary Description, Cont.
The district is bounded irregularly at the south, where it meets the northern perimeter of the Children's Hospital and Research Center campus; the southern boundary of the district includes properties on the north side of 53rd Street, portions of the south side of 53rd Street, properties located on the west side of Dover Street between 53rd and 52nd streets, and two properties on the north side of 52nd Street.

D5. Boundary Justification, Cont.
At the east, Shattuck Avenue formed a natural traffic boundary to the area, a boundary which was further reinforced in the 1960s with the construction of State Route 24. The east side of Dover Street between 52nd and 53rd streets has been excluded from the boundary because nearly all of the buildings were constructed outside the established period of significance. The boundaries of the district as described in this record reflect the remaining intact residential areas at the district's southern border near Children's Hospital.

The boundary identified in this DPR 523D form is very similar to the boundary identified in the 1996 OCHS Survey **(Figures 1 and 2)**. There are two differences. First is the exclusion of two buildings that face Martin Luther King Jr. Way: 5204 and 5442 Martin Luther King Jr. Way. Both were constructed outside of the identified period of significance and are therefore non-contributors to the district. They are also both surrounded by development that is outside the period of significance and does not relate to the significance of the district. The second is the exclusion of a portion on the east side of Dover Street between 52nd and 53rd streets. Of the six buildings located within the 1996 OCHS Survey's boundary, five were constructed outside the established period of significance and one has been altered such that it no longer conveys its period of construction. Thus, all would have been non-contributors to the district.

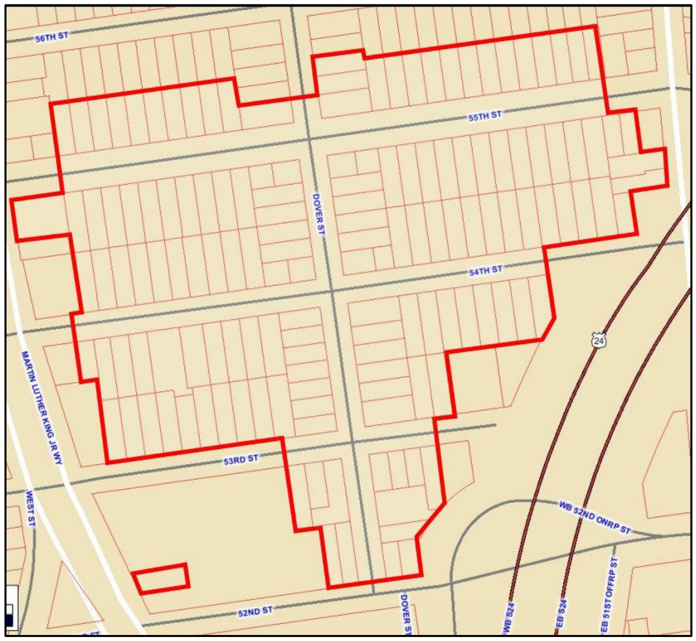


Figure 1. 55th and Dover Residential District boundaries, as identified in the 1996 OCHS Survey.

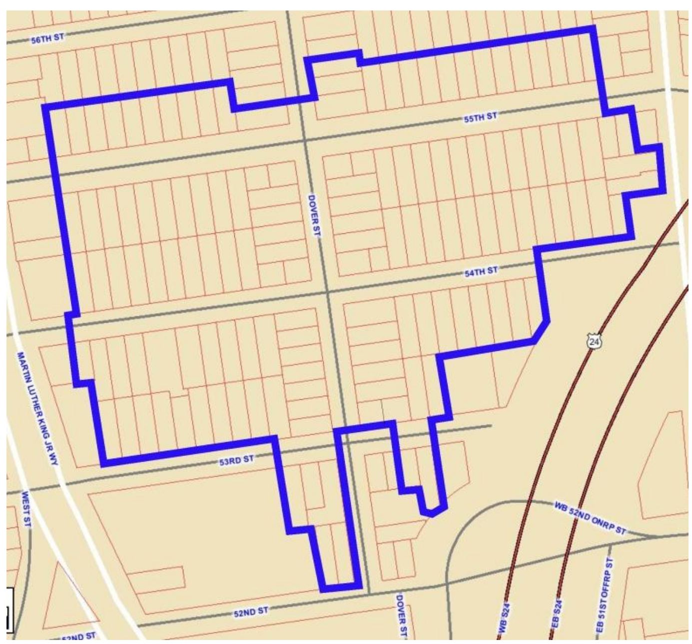


Figure 2. Updated 55th and Dover Residential District boundaries, Page & Turnbull, 2013.

D6. Significance, Cont.
Historic Context, Cont.

Native American, Spanish, and Mexican Periods
The first residents of the area were members of the Huchiun Ohlone tribe, whose ancestral land spanned the East Bay as far north as current day Richmond. In North Oakland, Huchiun Ohlone people are believed to have settled along the banks of Temescal Creek, which travels east-west through North Oakland to San Francisco Bay. The Huchiun Ohlone built modest, dome-shaped shelters, hunted, fished, and gathered seeds and acorns. The tribe also constructed sweat lodges, known as *temescals*, a word that gives the area its contemporary name.[1]

Vicente Peralta became the first person of European descent to settle in the area in 1836, when he constructed an adobe home adjacent to Temescal Creek on land that had been granted to his father by the Mexican government. Peralta eventually came to control land spanning from the Oakland waterfront to the border of Berkeley, which he used to plant orchards and graze massive herds of cattle.

Nineteenth Century Development
The population of Oakland, like all other Bay Area cities and towns, increased dramatically after the Gold Rush in 1849, and in the following decades, Peralta lost most of his land to sale or to squatters. By the 1860s, the area that is now the 55th and Dover Residential District was owned by Solomon E. Alden, a wealthy farmer who had arrived in California from Connecticut in the 1850s. Alden planted (or inherited from the Peralta era) extensive orchards, and was listed by the Oakland Assessor as the fourth wealthiest man in Oakland by the time of his death in 1881. Alden's daughter Elsie married Harvard-educated lawyer John McElrath, and they constructed a large home on Alden family land **(Figure 3)**. This house was located on 51st Street just west of Dover Street, and later served as the first home of Children's Hospital of Oakland (established as the Baby Hospital in 1912). The area of North Oakland surrounding the Alden family's holdings was for some years called Alden.

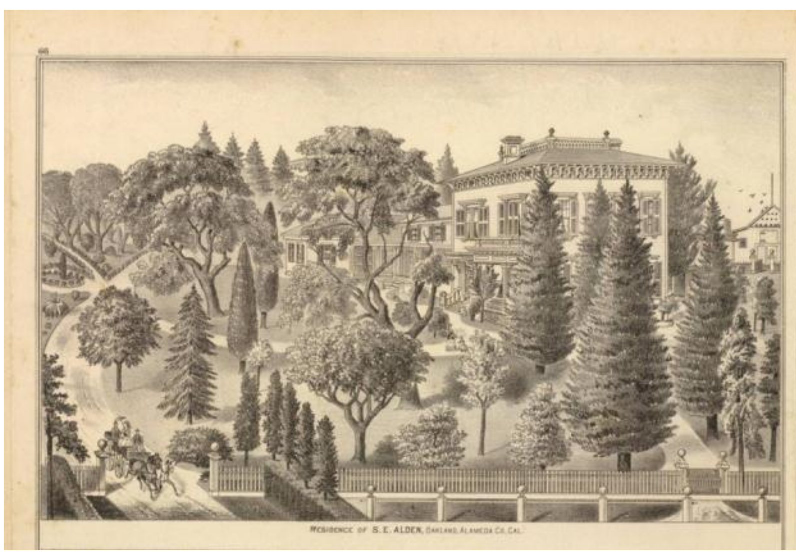


Figure 3: Residence of Solomon Alden, published in Thompson and West, Index Map of Oakland, 1878. Source: The David Rumsey Historical Map Collection.

Although the population in Oakland had increased after the Gold Rush and again increased after the city became the terminus of the Central Pacific trans-continental rail line in 1869, residential settlement during this time was

[1] Jeff Norman, "Original Residents: The Ohlone", the Friends of Temesal Creek Website, accessed November 2013, http://www.temescalcreek.org/history.html.

concentrated close to the downtown core, east and west along the waterfront of the Alameda Estuary, and west into industrial areas that later became known as West Oakland. This concentration reflected the need for most people to live within walking distance of their employment and the lack of reliable public transit options at the time. Settlement began to extend north from Oakland's downtown core after the establishment of a horse-drawn transit line along Telegraph Avenue in 1872, built to service the new Berkeley campus of the College of California (now University of California, Berkeley).[2] By 1876, steam-powered rail service ran along Shattuck Avenue between Oakland and Berkeley, and electric rail service ran along Grove Street (now Martin Luther King Jr. Way) by 1891. These improvements had the effect of increasing commercial, residential, and even light industrial construction in the unincorporated area between Oakland and Berkeley adjacent to the new transportation lines. Reflecting this increased development, the area of North Oakland which had been known variably as Alden and Temescal officially became part of Oakland by annexation in 1897.

Despite the transportation improvements of the 1870s to 1890s, the area that is now the 55th and Dover Residential District was largely undeveloped prior to the turn of the twentieth century. Although maps show the area platted as the Alpine Tract as early as 1878, this platting was likely the result of early and overly-enthusiastic real estate prospecting, rather than the provision of land that was actually desired and needed for residential settlement.[3] As late as 1903, the area was not mapped by the Sanborn Fire Insurance Company, indicating that physical development was sparse enough that it did not warrant inspection by the insurance industry. Adjacent blocks indicate that 51st Street was "not open" at the time, that orchards were still to be found at 51st and Grove streets, and a large vegetable garden was located at 52nd Street and Shattuck Avenue.

Development of Oakland's Streetcar Suburbs: The Key Route System

The Alden and the McElrath families subdivided and sold their land holdings north of Temescal Creek and east of Grove Street around 1900, although John and Elsie McElrath continued to live in their large home at 51st and Dover streets until John's death in 1907. The sales were possibly correlative to a rise in land value after the 1897 annexation and with it the potential for the extension of city services to previously unopened roads. Ownership of the area changed hands rapidly several times in the first decade of the twentieth century. According to Block Book records, owners included H. P. Bancroft; the real estate firm of Holcomb, Breed & Bancroft; and, in 1906, the real estate firm of Heron & Holcomb.

In 1906, E. A. Heron, partner in Heron & Holcomb, was also the vice president of the San Francisco, Oakland & San Jose Railway, an electric streetcar transportation system that was established in 1903 by Francis Marion "Borax" Smith. The San Francisco, Oakland & San Jose Railway, which later became known as the Key Route System, began operating their first streetcar line in October 1903 along Grove Street (now Martin Luther King Jr. Way) between downtown Berkeley and a ferry connection to San Francisco. The Key Route System was from its inception used by Smith as a way to increase revenue for his vast real estate holdings, which he held under the company name of the Realty Syndicate. With the Realty Syndicate, Smith purchased large tracts of undeveloped land, and with the Key Route System, he created a way for buyers to reach this land. Although the area surrounding the 55th and Dover Residential District was never owned by the Realty Syndicate, it was owned by the Key Route's vice president, E. A. Heron., The connection between real estate subdivision and Key Route expansion that is illustrated in this neighborhood —specifically ownership of this land by E. A. Heron, vice-president of San Francisco, Oakland & San Jose Railway (Key Route System)— is a representative example of an important development pattern that shaped much of Oakland in the first decade of the twentieth century.

Construction of the Key Route System's E Line was completed in 1910, although partial service along the line may have begun a few years prior to 1910. Starting at the ferry pier, the route traveled east parallel to 40th Street, northeast parallel to Adeline Street, east along 55th Street, and northeast along Claremont Avenue to a terminus at the Claremont Hotel, which was constructed by the Realty Syndicate to increase ridership on the line. The Realty

[2] Architectural Resources Group, "City of Berkeley Historic Resources Reconnaissance Survey", January 2007, 59.
[3] John Beatty Dykstra, "A History of the Physical Development of the City of Oakland: The Formative Years, 1850-1930", thesis submitted in partial satisfaction of the requirement of the Master of City Planning, University of California, Berkeley, June 13, 1967. 126.

Syndicate also constructed Idora Park, an amusement park at 56th Street and Telegraph Avenue, which opened in 1903. Idora Park was easily accessible by the E Line. Access to Berkeley was also easy from the 55th and Dover Residential District area. Three blocks west of Grove Street, one could transfer from the E Line to the F Line to Berkeley, or the H Line to North Berkeley via Sacramento Street **(Figures 4 & 5)**.[4] Thus, by 1910 the neighborhood was well connected to San Francisco and the rest of the East Bay by the Key Route System.

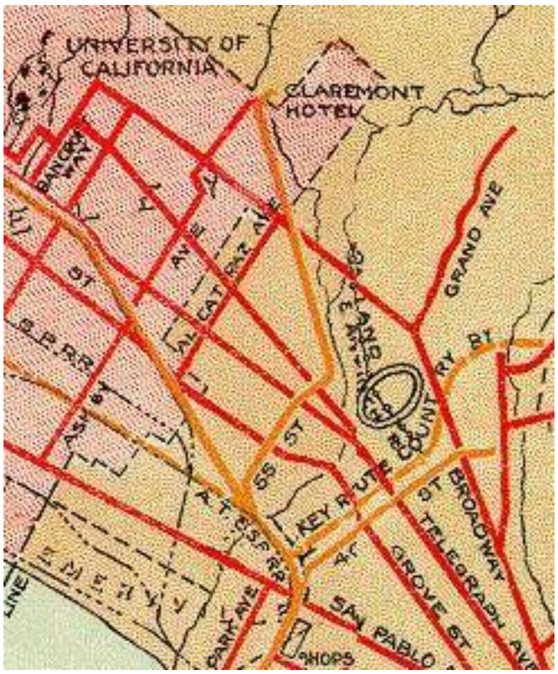


Figure 4: Detail of Key Route System Map, 1911. Source: OB & E Rail online, http://www.oberail.org/page/key_system/#e.

Figure 5: Key Route E Line at 55th Street and Shattuck Avenue, 1944. Source: OB & E Rail online, http://www.oberail.org/page/key_system/#e.

In addition to improvements in transportation, the drastic population increase in Oakland after the 1906 earthquake likely contributed to the rapid settlement of the 55th and Dover Residential District. Immediately after the earthquake, upwards of 200,000 refugees from San Francisco sought shelter in Oakland. It is estimated that only 50,000 of these people moved back to San Francisco, while the bulk of the rest remained to start life anew in Oakland.[5] A comparison between the Oakland Block Books of 1906 and 1910 shows that while a small proportion of the lots in the 55th and Dover area had been purchased by 1906, very few had been built upon.

By 1910, however, the tract was owned by the real estate firm of Bowles & Fitzgerald and the lots were nearly uniformly sold. Most of the lots had been built upon. Development was so rapid that by the time the Sanborn Fire Insurance Company returned to the area to complete their 1911 map, not only did they include the area that they had eight years ago skipped, their survey shows a residential neighborhood almost completely built out. In the area that is now the 55th and Dover Residential District, which today includes 143 buildings, there were only 34 empty lots in 1911. Twenty-three of the undeveloped lots were along 55th Street, perhaps reflecting a slight reluctance to build directly along the Key System Route. Almost all of the buildings that were extant in 1911 are still extant today. The 1911 Sanborn Map also shows that residential development extended uniformly south to 52nd Street, in areas that have been replaced by contemporary construction by the Children's Hospital (1960-1990s) and the construction of State Route 24 in the late 1960s. A combination of information from Block Books, Sanborn Maps, and building permit records reveals that the majority of construction in the 55th and Dover Residential District took place between 1906

[4] Daniel Levy, "The Key System", OB & E Rail online, http://www.oberail.org/page/key_system/#e.
[5] Kevin Fagan, "The Great Quake: 1906-2006—Quake Sparked Boom in East Bay", *The San Francisco Chronicle*, April 14, 2006.

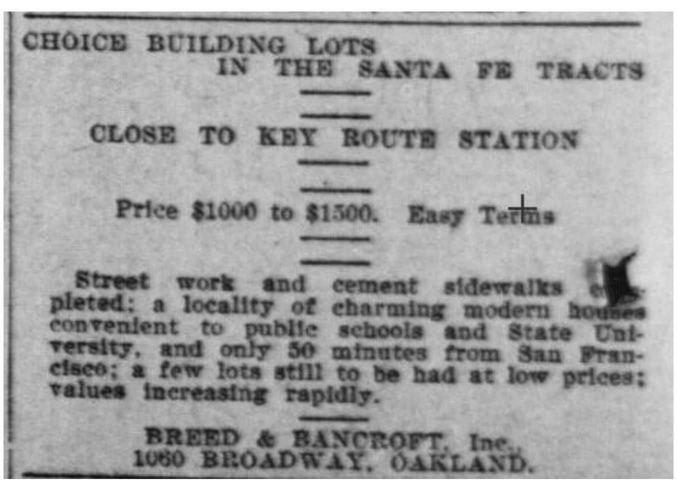
and 1911, and a survey of the neighborhood conducted in November 2013 reveals that the majority of these buildings remain extant.

Development of the 55th and Dover Residential District appears to have followed a pattern described in James Borchert's essay, "Visual Landscapes of a Streetcar Suburb":

> To sell their lots, developers advertised widely and attracted a fairly heterogeneous white, middle class population. Availability, location, cost, and lot size were the major criteria for a family's site selection. […] Some newcomers purchased lots from developers and either built their own homes, ordered kit houses from Sears, Roebuck, or hired contractors; others rented or purchased lots with homes already built speculatively by developers. Whatever the practice, most builders sited their homes to conform to the setbacks of neighboring ones. […] As pioneers in a landscape with few support systems, they quickly learned to rely on each other for help and social life.[6]

According to research in the *Polk-Hustead Oakland, Berkeley, and Alameda City Directory* and information in the Federal Census, owners of properties in the 55th and Dover Residential District were people much like Borchert describes. Some properties were constructed by their owners, both for occupancy and for the rental market. Many were built by local contractors. Some contractors built more than one home in the area, including the Legris Brothers, Fred A. Muller, W. J. Bermingham, Wilson Frank and Leander T. Cook; however, no one builder or property owner dominated the area. Architectural styles included the Classic Box and the one-and-a-half story bungalow, sometimes with Classical ornament. Some owners lived in their homes while others used the properties as rental income.

Representative occupations for residents of the area included musician, machinist, bank cashier, molder, partner in a livery firm, helper at a carriage construction firm, manager, and wireworker. A representative sample of residents in the area were all listed as white in the 1910 Federal Census. According to an article in the *San Francisco Call*, in 1911, the Santa Fe [Tract] Improvement Club, which was described as including homeowners and residents of the area from Temescal Creek to the Berkeley town line, and from Telegraph Avenue to Adeline Avenue, represented the largest neighborhood booster group in Oakland, topped only in size by the City's official Chamber of Commerce **(Figures 6 & 7)**.[7]



CHOICE BUILDING LOTS
IN THE SANTA FE TRACTS

CLOSE TO KEY ROUTE STATION

Price $1000 to $1500. Easy Terms

Street work and cement sidewalks completed; a locality of charming modern houses convenient to public schools and State University, and only 50 minutes from San Francisco; a few lots still to be had at low prices; values increasing rapidly.

BREED & BANCROFT, Inc.
1060 BROADWAY, OAKLAND.

Figure 6: Advertisement for lots in the Santa Fe Tracts, 1907. Source: *San Francisco Call*, February 17, 1907.

IMPROVEMENT CLUB TO
GIVE THEATER PARTY

Money Realized Will Be Used to Beautify District

OAKLAND, March 7.—Preparations were made at a meeting of the Santa Fe improvement club last night for a theater party at the Oakland Orpheum on the night of April 17. Among the the committee of arrangements are F. L. Shaw, J. A. Munro, James Hyland and W. H. Edwards. The money realized will be used in beautifying the Santa Fe tract, extending from Temescal creek to the Berkeley line and from Adeline street to Telegraph avenue. The club is the largest organization of its kind in Oakland, with the exception of the chamber of commerce.

Figure 7: Announcement of a theater party, given by the Santa Fe Improvement Club, 1911. Source: *San Francisco Call*, March 11, 1911.

[6] James Borchert, "Visual Landscapes of a Streetcar Suburb", published in *Understanding Ordinary Landscapes*, ed. Paul E. Groth (Yale University Press, 1997) 38.
[7] "Improvement Club to Give Theater Party", *San Francisco Call*, March 8, 1911.

After the Sanborn Fire Insurance Company mapped the area in 1911, construction quickly infilled the remaining empty lots within the boundaries of the 55th and Dover Residential District. Sixteen properties were constructed in 1912 and 1913. After that, construction slowed, with only six properties constructed between 1914 and 1921. A building boom that took place across the entire Bay Area in the 1920s added ten additional properties to the area in 1922 and 1923. Eight additional properties were constructed after 1923; six between 1924 and 1935, and two much later, circa 1970. The 1950 Sanborn Fire Insurance Map shows near complete build-out of the neighborhood.

The street pattern, lot layout, and residential pattern that was established between 1906 and 1913 has largely persevered, despite changes to the area that include the removal of the Key System Route E along 55th Street after 1958, the construction of State Route 24 in the 1960s, the construction of an elevated BART track at Martin Luther King Jr. Way in the 1970s, and the expansion of the Children's Hospital and Research Center from the 1960s through the 1990s. The area also remains well served by public transportation; after the Key Route System ceased operation in 1958, the Alameda Contra Costa Transit District (AC Transit) continued to run bus lines along Martin Luther King Jr. Way, 55th Street, and Shattuck Avenue. In combination with BART, these busy routes continue to connect the district to the broader Bay Area and bound the district in a way that reflects its historic pattern of development.

<u>Evaluation of Significance/California Register Eligibility</u>
The California Register of Historical Resources is an inventory of significant architectural, archeological, and historical resources in the State of California. State Historical Landmarks and National Register-listed properties are automatically listed in the California Register. Evaluation of significance for listing in the California Register is done using four Criteria; Criterion 1(Events), Criterion 2 (Persons), Criterion 3 (Architecture) and Criterion 4 (Information Potential).

Criterion 1
The 55th & Dover Residential District appears eligible for the California Register of Historical Resources under Criterion 1 (Patterns/Events) as a district that is "associated with events that have made a significant contribution to the broad patterns of our history." [8] The District is a representative example with integrity of a residential neighborhood that developed rapidly in response to the population increase that followed the 1906 earthquake and the provision of improved streetcar service by the San Francisco, Oakland & San Jose Railway (Key Route System). Between the earthquake in 1906 and the 1910 completion of the Key Route E Line, which ran along 55th Street between the Claremont Hotel and the ferry pier to San Francisco, the 55th and Dover Residential District area developed as a dense residential neighborhood. The connection between real estate subdivision and Key Route expansion that is illustrated in this neighborhood —specifically ownership of this land by E. A. Heron, vice-president of San Francisco, Oakland & San Jose Railway (Key Route System)— was an important development pattern in the City of Oakland in the first decade of the twentieth century. The district was characterized almost uniformly by two-story Classic Box-style houses and one-and-a-half story bungalows constructed by individual builders, rarely under the direction of an architect. By 1911, the neighborhood was more than 75 percent built out; houses of similar scale were built on remaining empty lots in the 1910s and 1920s. This uniformity of scale, style, and era of construction at one point stretched south to 51st Street and east to Shattuck Avenue; construction of State Route 24 in the 1960s and the development of Children's Hospital of Oakland from the 1960s to 1990s has hemmed the District to its current boundaries. While the district is not significant for its architecture (see Criterion 3), the cohesiveness of style and scale of residences characterizes the short period in which the majority of the neighborhood developed.

The period of significance for the 55th and Dover Residential District begins in 1906, the year in which the earthquake caused a rapid population increase in Oakland and also the year that the tract was bought by the Key Route's vice president, E. A. Heron. The period of significance ends in 1913, when the boom of construction in the area slowed as the neighborhood became largely built-out. This period includes the years in which the E Line of the Key Route was constructed along 55th Street, bringing improved public transportation to the area. The 55th and Dover Residential District is significant at the local level, because the two major impetus for its development—the 1906 earthquake and

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[8] "How to Apply the National Register Criteria for Evaluation", (National Register Bulletin 15, National Park Service, revised for the internet 2002, accessed online at http://www.nps.gov/nr/publications/bulletins/nrb15/, April 2013)

the development of the Key Route System—represent regional, rather than state or national, events.

Criterion 2
The 55th and Dover Residential District does not appear eligible for listing in the California Register of Historical Resources under Criterion 2 (Persons). In the course of research, no lives or careers of any individuals (land owners, residents, or builders) who have made important contributions to the history of the city, region, or state were identified in association with the district.

Criterion 3
The 55th and Dover Residential District does not appear eligible for listing in the California Register of Historical Resources under Criterion 3 (Architecture) because the properties in the district do not display exceptional design or especially high artistic values, nor are any of the properties works of master architects or builders.

Criterion 4
The 55th and Dover Residential District also does not appear to be eligible for the California Register of Historical Resources under Criterion 4 (Information Potential), which is related to the potential existence of archeological resources and is beyond the scope of this analysis.

Evaluation of Integrity[9]
The 55th and Dover Residential District retains integrity sufficient to convey its historic significance. As described earlier, construction dates in the district are tightly bounded, with approximately 127 out of 143 extant properties (89%) constructed within the 1906-1913 period of significance. The district retains integrity of location, as the street grid and lot layout have not changed, and the contributing properties have not been moved. Integrity of design is intact because the composition of elements comprising the form, plan, and spatial organization of the district (streets, lots, setbacks, and yards) has not changed since the district's period of significance. Integrity of setting is also largely intact; despite more recent construction surrounding the district, such as State Highway 24, the raised BART tracks on Martin Luther King Jr. Way and Children's Hospital buildings, the physical environment of the district has remained largely the same as it was during its period of significance. The district also retains integrity of feeling, as the original street pattern, lot sizes, transportation patterns, and mixture of housing styles that characterized the district during its period of significance are still present. Integrity of association is also intact, as the district retains its use as a residential district that is both served and bounded by the transportation routes that encouraged its settlement.

The majority of the properties in the district retain sufficient integrity of materials and workmanship to convey the district's historic context and significance. A number of the buildings have undergone façade updates that have altered the original materials. However, these properties tend to display a mixture of original and updated materials such that a sense of their historic appearance is still expressed. For example, buildings may have a mixture of original and updated windows, contemporary composite shingle siding with original windows, or horizontal vinyl siding with original window sills and moldings. Despite some loss of materials and workmanship integrity, the district retains enough fair to excellent examples of construction from the period of significance that integrity of materials and workmanship is intact overall.

Contributing and Non-Contributing Properties
Out of a total of 143 properties within the district boundaries, contributors include the 119 properties that were constructed during the period of significance **and** retain sufficient material integrity to convey their historic significance despite façade alterations, as discussed above **(Figure 8)**. These 119 properties receive a California Historic Resource Status Code 3CD ("Appears eligible for CR as a contributor to a CR eligible district through a survey evaluation").

[9] Evaluation of integrity follows guidelines laid out in the National Register Bulletin, "Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places", (National Register Bulletin, U. S. Department of the interior, September 2002) 106.

Resource Name or # (Assigned by recorder) 55th and Dover Residential District
***Recorded by** Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

Non-contributors to the district include the 22 properties constructed outside of the period of significance, as well as two properties (5305-09 Dover and 638-640 55th Street) that were constructed within the period of significance but have undergone such drastic alterations that they no longer convey their era of construction. The non-contributing properties are given California Historic Resource Status Codes of 6Z (“Found ineligible for NR, CR, or Local designation through survey evaluation”). Despite the overarching status code, please note that non-contributing properties constructed outside the established period of significance for the district may be potentiallyeligible within a different context or reason for significance.

Information about each property and its assigned status codes is listed in property list, which begins on the next page. Information in the property list was collected from the City of Oakland Building Permit records, City of Oakland Tax Assessor’s Block Books, Sanborn Fire Insurance Maps, and Husted’s (and Polk-Husted’s) City Directories for Oakland, Berkeley, and Alameda

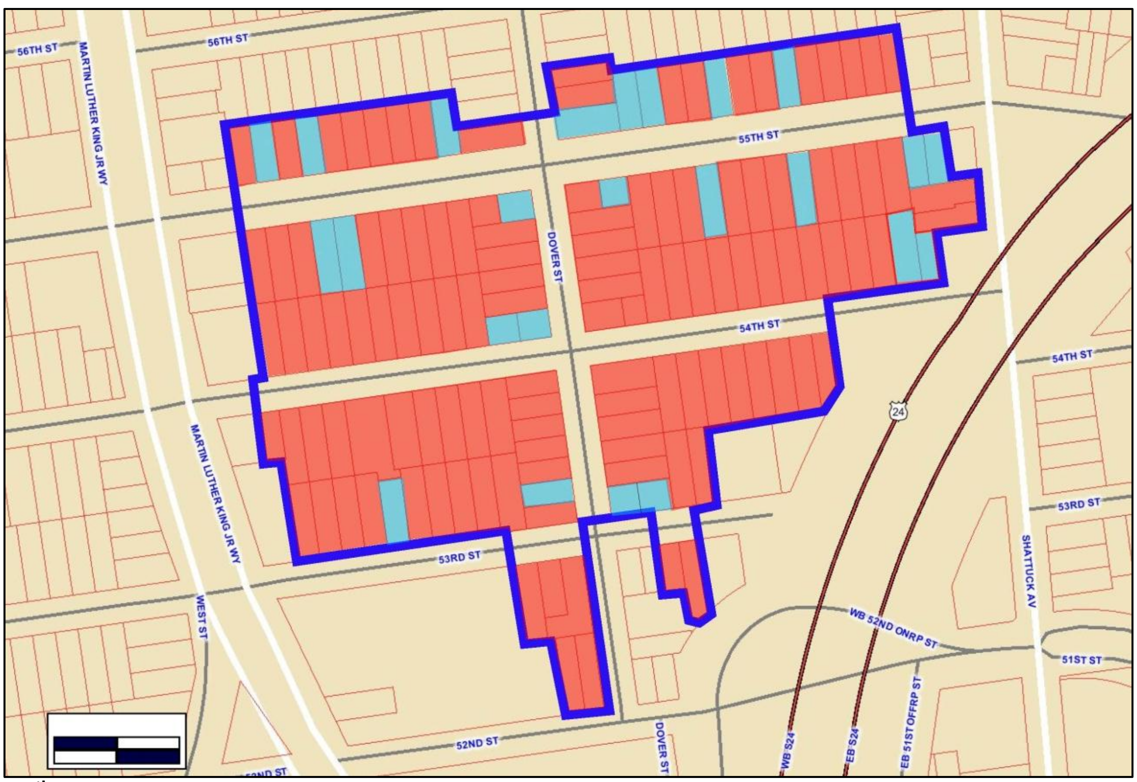


Figure 8. 55th and Dover Residential District, Contributor (red) and Non-Contributor (blue) Map. Page & Turnbull, 2013.

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary#
HRI #
Trinomial

Page 11 **of** 36 **Resource Name or #** (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

CONTRIBUTING RESOURCES

Photo and Address	Description	Built Date	Owner/Builder	OCHS Code (1996)	CHRS Code (2013)
 5203 Dover Street	Horizontal wood siding, aluminum windows with original dormer and leaded glass window on Dover Street, enclosed porch at rear.	Between 1906 and 1909 (Block Book)	Owner (1909): J. B. Rudolph, wireworker. Builder: Unknown	D2+	3CD
 5225 Dover Street	Contemporary composite shingle and wood shingle, aluminum and wood sash windows.	November 1908 (original building permit 14339)	Owner: H. M. Swalley (contractor) r. elsewhere Builder: Owner	Not evaluated	3CD
 5301-5303 Dover Street	Horizontal wood siding, Classical pilasters at corners, aluminum sash windows, duplex.	Between 1906 and 1910 (Block Book)	Owner (1910): Nellie S. David Builder: unknown	D2+	3CD
 5310 Dover Street	Horizontal wood siding, vinyl windows, corner bay with peaked roof, lifted with garage at front.	April 1910 (original building permit 19321)	Owner: C. A. Morgan Builder: owner	C2+	3CD
 5311 Dover Street	Horizontal wood siding, wood sash windows, brick chimney and stair, Classical columns and molding details.	Between 1906 and 1910 (Block Book)	Owner (1910): Irving W. Button, contractor, r. 5948 Telegraph. Builder: Unknown (likely owner)	Dc2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary# ______
HRI # ______
Trinomial

Page 12 **of** 36 **Resource Name or #** (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 5314-5316 Dover Street	Wood shingle siding, aluminum windows, flared eaves, duplex, reconfigured.	Between 1906 and 1910 (Block Books)	Owner (1910): Ellie F. Damuth Builder: Unknown	Dc2*	3CD
 5315 Dover Street	Horizontal wood siding, aluminum windows, Corinthian columns support broad porch, modillions at eave overhang.	Between 1906 and 1910 (Block Book)	Owner (1910): Edward K. Collins et al., carpenter, r. 825 57th Street Builder: unknown (likely owner)	C2+	3CD
 5318 Dover Street	Horizontal wood siding, wood shingle at gable front, wood sash double hung and diamond multi-lite, corner bay, ornamented bargeboard and simple brackets, multiple side gables.	November 1906 (original building permit 5825)	Owner: O. D. Jacoby Builder: E. R. Jones	C2+	3CD
 5319 Dover Street	Wood shingle at gambrel gable, horizontal wood siding at first story, double hung wood sash windows, bargeboard and large brackets.	March 1908 (original building permit 11758)	Owner: Mrs. Victoria Gensler Builder: R. W. Ryder Architect: H. F. Ryder	C2+	3CD
 5323 Dover Street	Scalloped wood shingles at second story gable, horizontal wood siding at first story, double hung wood sash and aluminum windows. Broad porch supported by wood posts.	April 1907 (original building permit 8246)	Owner: Mrs. Lavinia Hughes Builder: S. S. Kirkham	Dc2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary#
HRI #
Trinomial

Resource Name or # (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull
***Date** 05/05/2014 ☒ Continuation ☐ Update

 5326 Dover Street	Horizontal wood siding, vinyl windows at Dover Street, double hung wood sash at 54th Street, Classical ornament including corner pilasters and dentil molding.	1911 (not in 1910 Block Book, is on the 1911 Sanborn)	Owner (1910, no building): Bowles & Fitzgerald. Builder: unknown	Dc2+	3CD
 5327 Dover Street	Wood shingle siding, vinyl casement windows, broad porch supported by columns, flared eaves, brick exposed basement.	October 1906 (original building permit 5257)	Owner: K. L. Watson Builder: J. W. White	C2+	3CD
 5407 Dover Street	Horizontal wood siding, wood sash windows, under scaffolding.	March 1907 (original building permit 7675)	Owner: H. M. Swalley Builder: A. Walker & Son 1910 Owner: H. M. Swalley	Dc2+	3CD
 5410 Dover Street	Horizontal wood siding, double hung wood sash windows, two entrances, clinker brick chimney stack at front.	July 1910 (original building permit 16430)	Owner: E. J. McGurdy Builder: Walker & Bradhoff	C2+	3CD
 5415 Dover Street	Horizontal wood and wood shingle siding, wood windows, dentil molding.	January 1906 (original building permit 1870)	Owner: J. S. Burpee Builder: Frank Wilson 1910 Owner: Theresa Stamper	C2+	3CD
 5416 Dover Street	Stucco cladding, vinyl windows, raised with two contemporary garage doors at front.	April 1908 (original building permit 12130)	Owner: H. W. Neumann Builder: Owner	Dc2*	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary#
HRI #
Trinomial

Resource Name or # (Assigned by recorder) 55th and Dover Residential District
***Recorded by** Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 5420 Dover Street	Horizontal wood siding, vinyl windows, vented front gable.	Between 1909 and 1910 (Block Book)	Owner (1910): G. H. Chappel, molder Builder: Unknown	Dc2+	3CD
 5423 Dover Street	Horizontal wood siding, aluminum windows at first story (reconfigured bay), multi-lite wood sash windows at second story, modillions, entry porch supported by columns.	January 1906 (original building permit 1867)	Owner: J. S. Burpee Builder: Frank Wilson 1910 Owner: H. A. Zeckendorf	Dc2+	3CD
 5424 Dover Street	Horizontal wood siding, aluminum sliding windows, original dormer window, windows reconfigured into bays.	Between 1909 and 1910 (Block Book)	Owner (1910): Amanda Anderson, widow of James Builder: Unknown	Dc2+	3CD
 5425 Dover Street	Contemporary large shingle cladding, wood fixed and multi-lite casement windows, flared eaves, square corner bay, side entrance.	Between 1906 and 1910 (Block Book)	Owner (1910): J. W. Byers Builder: unknown	D2+	3CD
 5430 Dover Street	Contemporary shingle siding, wood sash double hung and casement windows.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner: Unknown (no land owner on 1910 Block Book) Builder: Unknown	Dc2+	3CD
 5501 Dover Street	Shingle cladding at large gable front, horizontal wood siding elsewhere, vinyl windows, dentil molding at windows, flared eaves, curved bay at side façade.	August 1912 (original building permit 28512)	Owner: S. A. Miller Builder: M. F. Mortensen	C2+	3CD

Resource Name or # (Assigned by recorder) 55th and Dover Residential District

*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

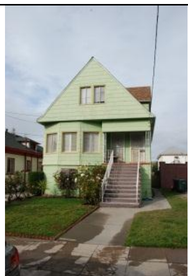
 5510 Dover Street	Horizontal wood siding, vinyl window at front, wood double hung windows at sides, flared eaves, entry porch with double columns.	April 1907 (original building permit 7991)	Owner: E. D. Roach Builder: M. F. Mortensen	D2+	3CD
 5514 Dover Street	Wood shingle siding, arched wood sash windows with diamond lites at door sidelights and gable, gable peak screen, brackets, extended rafter tails, entrance reconfigured for garage insertion.	November 1909 (original building permit 17674)	Owner: H. M. Swalley Builder: owner	C2+	3CD
 5433 Shattuck Avenue	Former religious building, contemporary composite shingle, exposed rafters and carved brackets.	Estimated 1911 (Block Book, Sanborn Map)	Owner (1910, no improvements): Wardens and Vestrymen, Trinity Parish Builder: unknown	Dc2+	3CD
 5425 Shattuck Avenue	Contemporary composite shingle, double hung wood sash windows, entry porch with exposed rafter tails, clinker brick chimney.	Estimated 1912 to 1913 (not on 1911 Sanborn)	Owner (1910, no improvements): Wardens and Vestrymen, Trinity Parish Builder: unknown	Dc2+	3CD
 720 52nd Street	Horizontal wood siding, vinyl windows, original multi-lite dormer window, side entry porch.	December 1906 (original building permit 6385)	Owner: William H. Keifer, vice-president, Oakland Builder's Supply. Builder: Owner Architect: T. D. Newsom	D2+	3CD
 670 53rd Street	Wood shingle siding, aluminum sash windows, clinker brick porch posts, broad porch.	May 1909 (original building permit 16041)	Owner: George B. Genereaux, r. at this address, 1910. Builder: G. J. Anloff, Manager, Mercer-Hodgson Improvement Co., Oakland Architect: same	C2+	3CD

 671 53rd Street	Wood shingle cladding, wood sash windows, aluminum at dormer, side entry porch.	August 1906 (original building permit 4474)	Owner: Edw. David Builder: C. F. Kreischer	C2+	3CD
 674 53rd Street	Permastone siding, aluminum sash windows, flared eaves, enclosed porch.	June 1909 (original building permit 16109)	Owner: Jno. Storer Builder: Keating Bradford Co. (William Keating, emp. Oakland Realty Inv. Co.)	Fc2+	3CD
 675 53rd Street	Stucco cladding, multi-lite casement windows at a reconfigured bay, original dormer window, side entry, and contemporary stone stairs.	June 1908 (original building permit 12783)	Owner: L. B. Hanson Builder: E. K. Collins	Dc2+	3CD
 707 53rd Street	Wood shingle siding, wood casement windows with multi-lite transoms, flared eaves and dormers.	April 1907 (original building permit 8077)	Owner: Anna Walker Builder: A. Walker & Sons (in 1910 known as Walker & Bradhoff, with P. Frank Bradhoff) Architect: W. A. Walker	C2+	3CD
 714 53rd Street	Wood shingle siding, double hung wood sash windows, corner bay, sunken roof, side entry porch.	Between 1906 and 1909 (Block Book)	Owner (1909): C. E. Wood or Ward Builder: unknown	C2+	3CD
 715 53rd Street	Contemporary composite shingle siding, vinyl windows, flared eaves, dormer, and barge boards, contemporary porch rails.	Between 1906 and 1909 (Block Book)	Owner (1909): J. V. Galindo, manager. Builder: Unknown	Dc2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary#
HRI #
Trinomial

 Resource Name or # (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 720 53rd Street	Contemporary composite shingle siding, aluminum sash windows, double entry.	Between 1906 and 1909 (Block Book)	Owner (1909): Peter Olson Builder: Unknown	Fd2+	3CD
 726 53rd Street	Wood shingle cladding, aluminum sash windows, corner bay, side entry porch.	Between 1906 and 1909 (Block Book)	Owner (1909): Evelyn Webster Builder: Unknown	D2+	3CD
 732 53rd Street	Horizontal wood siding, aluminum sash windows, side entry porch.	Between 1906 and 1909 (Block Book)	Owner (1909): Margaret Paul Builder: unknown	D2+	3CD
 738 53rd Street	Contemporary composite shingle siding, aluminum sash windows, flared eaves, corner bay, side entry porch.	July 1906 (original building permit 3600)	Owner: A. R. Babcock Builder: C. S. Barnard	D2+	3CD
 748 53rd Street	Stucco cladding, vinyl windows, original dormer window, flared eaves.	March 1907 (original building permit 7580)	Owner: Margaret Duveneck Builder: Matthews & Epply	D2+	3CD
 754 53rd Street	Stucco cladding, shingle at dormer, double hung wood sash windows, exposed rafter tails, side entry porch	Between 1909 and 1910 (Block Book)	Owner (1910): A. J. Snyder, real estate broker. Builder: Unknown	Dc2+	3CD

 760 53rd Street	Contemporary composite shingle cladding, aluminum sash windows, flared front gable roof with vent and scalloped shingles, flared eaves.	December 1906 (original building permit 6413)	Owner: G. H. Pinkerton, helper, Oakland Carriage Works. Builder: Owner	Dc2+	3CD
 764 53rd Street	Contemporary composite shingle cladding, wood sash double hung windows, diamond sash multi-lite window at dormer, brick chimney.	December 1906 (original building permit 6184)	Owner: F. S. Morsman, partner in Cook & Morsman, livery, resides elsewhere. Builder: Owner Architect: J. W. Bagley, Jr.	Dc2+	3CD
 616-618 54th Street	Horizontal wood siding, multi-lite over single double hung windows, multi-lite dormer window, entry porch with extended rafter tails.	March 1907 (original building permit 7760)	Owner: Guy A. Dunn Builder: A. F. Nordman Architect: A. H. Peterson	Dc2+	3CD
 622 54th Street	Horizontal wood siding, reconfigured front window arrangement, aluminum windows at front, wood windows at sides and dormer.	April 1910 (original building permit 19387)	Owner: D. Magee Builder: Legris Brothers	C2+	3CD
 626 54th Street	Wood shingle siding, aluminum sash sliding windows at front and sides, side entry, vented gable.	August 1907 (original building permit 9559)	Owner: Mrs. K. L. Cousins Builder: R. H. Van Sant Architect: J. H. Thomas	D2+	3CD
 630 54th Street	Wood shingle siding, vinyl windows at first story, original dormer windows, broad porch, brick chimney.	August 1907 (original building permit 9797)	Owner: Mary M. Buswell Builder: owner	Dc2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

Primary#
HRI #
Trinomial

Resource Name or # (Assigned by recorder) 55th and Dover Residential District
***Recorded by** Page & Turnbull
***Date** 05/05/2014 ☒ Continuation ☐ Update

 631 54th Street	Horizontal wood siding at first story, some original multi-lite windows, aluminum sliding windows, original window at dormer.	January 1907 (original building permit 6429)	Owner: Ed. Lamb Builder: owner	Dc2+	3CD
 634 54th Street	Horizontal wood siding, wood double hung windows, Classical detailing including engaged corner pilasters with Corinthian capitals.	September 1908 (original building permit 13796)	Owner: G. W. Farwell Builder: Alex C. Wieben	D2+	3CD
 635 54th Street	Horizontal wood siding, aluminum sliding windows, matches 639 54th Street.	April 1907 (original building permit 7941)	Owner: G. L. Brownell Builder: W. J. Bermingham	D2+	3CD
 638 54th Street	Horizontal wood siding, wood sash windows, some vinyl sash windows, wide porch supported by Classical columns with Corinthian columns.	Between 1906 and 1910 (Block Book)	Owner (1910): G. W. Farwell Builder: unknown	C2+	3CD
 639 54th Street	Horizontal wood siding, aluminum sliding windows, matches 635 54th Street.	Estimated 1910 (Block Book)	Owner (1910): Emily A. McInerney Builder: unknown	D2+	3CD
 642 54th Street	Contemporary composite shingle siding, double hung wood windows at the first story, aluminum at second story, exposed rafter tails.	April 1909 (original building permit 15633)	Owners: Mr. & Mrs. J. Todd Builder: H. D. Koch Architect: S. P. Koch	D2+	3CD

 643 54th Street	Horizontal wood siding, contemporary second story addition, raised, wood sash windows at first story, broad porch supported by Corinthian columns, dentil molding.	August 1907 (original building permit 13245)	Owner: W. C. Webster Builder: Bond & Sullivan	C2+	3CD
 646 54th Street	Contemporary composite shingle siding, vinyl windows, exposed rafter ends and extended tails.	Between 1909 and 1910 (Block Book)	Owner (1910): Agnes Feudner Builder: Unknown	Dc2+	3CD
 647 54th Street	Horizontal vinyl siding, aluminum sliding windows, clinker brick chimney at front, brackets, side entry porch.	May 1908 (original building permit 12444)	Owner: A. Tregoning Builder: O. A. Schroeder	Dc2+	3CD
 650-652 54th Street	Horizontal wood siding, aluminum windows with original wood sills. Garage at exposed basement.	Estimated 1909 (Block Book)	Owner (1910): E. W. Condon et al Builder: Unknown	Dc2+	3CD
 653-655 54th Street	Wood shingle at gable front, horizontal wood siding elsewhere, vinyl windows, curved bargeboard, flared peak roof at tower.	October 1906 (original building permit 4983)	Owner: J. H. Merguire Builder: W. J. Bermingham	C2+	3CD

 656-658 54th Street	Horizontal wood siding, vinyl windows, original Classical ornament, entry porch supported by wood columns.	Estimated 1909 (Block Book)	Owner (1910): W. P. Rohde Builder: Unknown	C2+	3CD
 657 54th Street	Wood shingle and horizontal wood siding, wood casement and multi-lite windows, entry porch supported by compound beam and joist columns.	October 1908 (original building permit 13981)	Owner: E. E. Barnickol Builder: Fred Darnall & Co. Architect: J. Cather. Newsom, 1668 O'Farrell, San Francisco.	B2+	3CD
 660 54th Street	Stucco cladding at front, horizontal wood siding at sides, vinyl windows with wood sash sidelights, reconfigured entrance.	August 1908 (original building permit 13495)	Owner: Hans Larsen Builder: H. Franberg	D2+	3CD
 661 54th Street	Stucco cladding, wood casement and fixed windows at front and sides, duplex, exposed rafter tails.	Estimated 1911 (Block Book, Sanborn Map), reconfigured with new second story, 1920s.	Owner: unknown Builder: unknown	D2+	3CD
 664 54th Street	Vinyl siding and vinyl windows, reconfigured entrance.	March 1907 (original building permit 7484)	Owner: C. A. Murdock Builder: R. F. Hughes	D2+	3CD
 670 54th Street	Stucco cladding, aluminum sash windows, flared eaves, corner bay.	1910 (shows up on Block Book between 1909 and 1910)	Owner: E. I. Hatch Builder: Unknown	Dc2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

CONTINUATION SHEET

Primary# ____
HRI # ____
Trinomial

Page 22 **of** 36 **Resource Name or #** (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 711-713 54th Street	Horizontal wood siding, primarily wood windows (some multi-lite fishscale) with some vinyl, arched windows at second story, Classical ornament including dentil molding and floral swags.	Estimated between 1906 and 1909 (Block Book)	Owner (1909): Emma Tilgner Builder: Unknown	B2+	3CD
 717 54th Street	Stucco clad, wood double hung multi-lite windows, bargeboard, brackets, extended rafter tails.	September 1913 (original building permit 32712)	Owner: Col. C. M. Gasso or Grasso Builder: D. W. Stanage or Strange	C2+	3CD
 719 54th Street	Horizontal wood siding, aluminum windows with leaded sidelights, reconfigured entrances.	August 1906 (original building permit 3928)	Owner: J. W. Byers Builder: Owner	Dc2+	3CD
 722 54th Street	Horizontal wood siding, double hung wood sash windows, diamond pane sidelights, wide porch, original dormer window.	May 1909 (original building permit 16001)	Owner: P. P. Phamet Builder: C. F. Legris	C2+	3CD
 725 54th Street	Horizontal wood siding, vinyl windows, partially enclosed porch, dentil molding, original dormer window.	June 1909 (original building permit 16141)	Owner: L. J. Waldiat Builder: C. F. Legris	D2+	3CD
 726 54th Street	Wood shingle siding, some wood double hung windows, original dormer multi-lite window, exposed rafter ends.	January 1907 (original building permit 6938)	Owner: A. McClelland Builder: Owner	C2+	3CD

 730 54th Street	Horizontal wood siding, wood sash windows, prominent new garage, low pitch front gable over wide porch.	May 1907 (original building permit 8695)	Owner: A. M. Emerson Builder: owner	D2+	3CD
 736 54th Street	Vinyl siding, vinyl and aluminum windows, original dormer window, reconfigured primary façade.	November 1906 (original building permit 5880)	Owner: Harry Williams Builder: owner	Dc2+	3CD
 737 54th Street	Stucco siding, aluminum windows, some wood windows at second story.	January 1909 (original building permit 1899)	Owner: Harry Butler Builder: Durham and Tarbox	Dc2+	3CD
 740 54th Street	Horizontal wood siding, double hung wood windows at first story, aluminum windows at second story, shed roof belt course, exposed rafter ends.	October 1906 (original building permit 4738)	Owner: George A. Gordon Builder: Owner	C2+	3CD
 747 54th Street	Stucco cladding, mix of wood casement, wood double hung, and aluminum windows, original doors, flared eaves, two hipped dormers, U-shaped footprint.	August 1906 (original building permit 4449)	Owner: Maxine E. Butler Builder: E. Hoffman Architect: C. M. Cook	C2+	3CD
 750 54th Street	Vinyl siding, aluminum and vinyl windows, shaped bargeboards, reconfigured primary façade.	February 1908 (original building permit 11574)	Owner: Emily and Eva and Ben McInerney Builder: Chase & Florian	C2+	3CD

State of California & The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
CONTINUATION SHEET

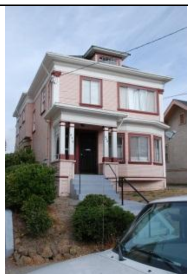
Primary#
HRI #
Trinomial

 Resource Name or # (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 752 54th Street	Wood shingle siding, wood sash double hung windows, diamond multi-lite dormer window, wide porch.	1903 (Oakland Parcel Map)	Owner (1910): Ann Young Builder: Unknown	C2+	3CD
 755 54th Street	Horizontal wood siding, wood double hung multi-lite windows, porch supported by double posts.	Between 1909 and 1910 (Block Book)	Owner (1910): George Nickerson Builder: Unknown	C2+	3CD
 758 54th Street	Wood shingle siding, vinyl siding, enclosed porch with multi-lite wood windows, wide porch supported by shingled posts.	October 1907 (original building permit 10741)	Owner: Edwin C. Hatch Builder: W. J. Bermingham Architect: Thomas Bermingham	C2+	3CD
 761 54th Street	Horizontal wood siding, vinyl windows, raised with garage at front façade.	July 1908 (original building permit 13091)	Owner: Thomas McClean Builder: Thomas Kerss	D2+	3CD
 764 54th Street	Horizontal wood siding, vinyl windows, raised with windows at exposed basement, enclosed porch.	Estimated between 1906 and 1910 (Block Book)	Owner (1910): Ada B. Metcalf Builder: Unknown	D2+	3CD
 767 54th Street	Horizontal wood siding, wood sash windows, flared eaves, exposed rafter ends.	November 1907 (original building permit 10924)	Owner: George Shrider Builder: Owner	C2+	3CD

 768 54th Street	Wood shingle cladding, aluminum windows, bargeboards and exposed rafter ends and brackets.	December 1906 (original building permit 6566)	Owner: W. G. Metcalf Builder: W. J. Bermingham	Dc2+	3CD
 771 54th Street	Horizontal wood siding at first story, shingle at second story, vinyl windows, altered entry.	Between 1909 and 1910 (Block Book)	Owner (1910): H. Wegener Builder: Unknown	C2+	3CD
 614 55th Street	Stucco and horizontal wood siding, vinyl windows, reconfigured façade, side entrance, brackets and bargeboards.	June 1909 (original building permit 16105)	Owner: Norris English, mining executive, resided in San Francisco. Builder: Leander T. Cook, contractor, Oakland.	C2+	3CD
 617 55th Street	Horizontal wood siding, lifted to insert at-grade basement, wood ogee lug windows at the first story, original dormer window, vinyl windows at the basement.	January 1912 (original building permit 26284)	Owner: Edw Leitner (sic), contractor, Leiter & Sons, resides elsewhere, 1915. Builder: Benjamin. R. Dexter, contractor.	C2+	3CD
 618 55th Street	Horizontal and shingle wood siding, front bay with brick hearth, wood windows, some multi-lite.	June 1909 (original building permit 16106)	Owner: Norris English, mining executive, resides in San Francisco. Builder: Leander. T. Cook, contractor, Oakland.	C2+	3CD
 621-623 55th Street	Horizontal wood siding, wood sash ogee lug windows, original ornament.	August 1907 (original building permit 13230)	Owner: J. E. and Gracie J. Van Hoosian Builder: Edw Larmer, contractor.	C2+	3CD

 622 55th Street	Horizontal wood siding, aluminum windows, reconfigured door and porch.	September 1910 (original building permit 20992)	Owner: George Slissman, musician. Builder: C. A. Salter, unlisted.	D2+	3CD
 627-631 55^{th} Street	Stucco cladding, aluminum sash windows at first story, wood sash with diamond lite upper panes at second story, corner bays, exposed rafter ends and extended tails.	July 1908 (original building permit 13092)	Owner: H. D. and Annie E. Webster Builder: J. E. Loomer	Dc2+	3CD
 628 55^{th} Street	Stucco siding, vinyl windows, stone porch, brick stair, extended rafter tails.	Estimated 1912-1913 (not on 1911 Sanborn)	Land owned in 1910 by Matilda Leonard, no improvements. Builder: unknown	Dc2+	3CD
 633 55^{th} Street	Horizontal wood siding, mix of wood sash fixed and vinyl sash double hung windows, entry porch with columns, upper story façade reconfigured.	Between 1906 and 1910 (Block Book)	Owner (1910): J. N. Spencer Builder: unknown	D2+	3CD
 636 55^{th} Street	Lifted to include at-grade basement, horizontal wood siding, vinyl windows with original dills and original dormer window, columns at porch,	March 1910 (original building permit 18829)	Owner: Fred A. Muller, contractor, Morris & Muller. Builder: Fred A. Muller	D2+	3CD
 643 55^{th} Street	Wood shingle siding, double hung wood sash windows at the first story, aluminum sash windows at the second story, brick chimney at primary façade, leaded stained glass windows at side facades.	Between 1906 and 1910 (Block Book)	Owner (1910): Kate T. Cousins Builder: Unknown	D2+	3CD

 644 55th Street	Stucco siding, aluminum windows at front, original wood windows at gable and sides, flared eaves.	June 1910 (original building permit 20016)	Owner: Mrs. Carrie L. Rowell Builder: Owner	C2+	3CD
 647 55th Street	Stucco siding, wood sash fixed and double hung windows with ogee lugs, Classical ornament, entry porch with columns.	Between 1906 and 1910 (Block Book)	Owner (1910): John B. Coe Builder: Unknown	Dc2+	3CD
 648-650 55th Street	Horizontal wood siding, aluminum sash windows, original wood dormer window.	Between 1906 and 1910 (Block Book)	Owner (1910): Jonathan McKay Builder: Unknown	Dc2+	3CD
 653 55th Street	Wood shingle cladding, double hung wood sash windows with diamond lites, side entry porch.	May 1908 (original building permit 12470)	Owner: O. E. Moors Builder: Charles Burrell	C2+	3CD
 656 55th Street	Stucco cladding, aluminum sash windows at front, leaded stained glass and wood sash windows at sides, exposed rafter tails, porch with tapered posts.	August 1913 (original building permit 32557)	Owner: James Young, contractor, living on Aileen Street. Builder: Owner	D2+	3CD
 659 55th Street	Wood shingle siding, wood sash fixed and double hung windows, brick basement and chimney, brackets and bargeboard.	January 1908 (original building permit 11384)	Owner: Mrs. W. R. Hayford Builder: O. A. Schroeder	Dc2+	3CD

 660 55th Street	Horizontal vinyl siding, vinyl windows at front and sides, original dormer window. Detached garage.	Between 1906 and 1910 (Block Book)	Owner (1910): Florence R. O'Brien Builder: Unknown	Dc2+	3CD
 665 55th Street	Horizontal wood siding, wood sash windows with ogee lugs, cornice ornament, modillions, glazed wood leaf garage doors.	May 1910 (original building permit 19523)	Owner: A. Morgensen Builder: Owner	C2+	3CD
 671 55th Street	Wood shingle cladding, wood multi-lite casement windows, wood stair and porch.	March 1909 (original building permit 15277)	Owner: T. D. Courtright Builder: Owner	C2+	3CD
 721 55th Street	Horizontal wood siding, vinyl siding, central entry porch with posts, overhanging eaves.	December 1913 (original building permit 33775)	Owner: George W. Nunes Builder: Owner	D2+	3CD
 722 55th Street	Wood shingle cladding, vinyl windows, two angled bays at primary façade.	Between 1906 and 1910 (Block Book)	Owner (1910): A. I. Goodfriend Builder: unknown	D2+	3CD
 725 55th Street	Horizontal wood siding, wood double sash windows, full width porch supported with columns and carved balusters. Possibly lifted; wood window at exposed basement.	August 1910 (original building permit 20517)	Owner: George Schrider Builder: C. O. Bradhoff	C2+	3CD

 726 55th Street	Wood shingle cladding, brick basement, vinyl windows at primary façade, wood multi-lite at dormer and door sidelights. Stone chimney.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner: unknown Builder: unknown	Dc2+	3CD
 729 55th Street	Horizontal wood siding, double hung wood sash windows, full width porch with double posts, lifted, glazed wood leaf garage doors at exposed basement.	December 1909 (original building permit 18049)	Owner: L. H. Legris Builder: owner	D2+	3CD
 731 55th Street	Horizontal wood siding, wood and vinyl windows at first story, wood windows at exposed basement and dormer, wood stair to entry porch.	November 1909 (original building permit 17838)	Owner: L. H. Legris Builder: owner	D2+	3CD
 732 55th Street	Horizontal wood siding, vinyl casement at first story, wood multi-lite dormer window. Full width porch with wrought iron posts.	Between 1906 and 1910 (Block Book)	Owner (1910): Ida and August O. Nussbaum Builder: unknown	Dc2+	3CD
 735 55th Street	Horizontal wood siding, double hung wood sash windows, engaged pilasters, contemporary stair.	1911 (on Sanborn, not in 1910 Block Book)	Owner (1910 Block Book, unimproved): Bessie Westerich Builder: unknown	D2+	3CD
 736 55th Street	Horizontal wood siding, aluminum windows at first story, wood multi-lite dormer window, entry porch with columns.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner (1910): Fred. A. Miller (no improvements) Builder: unknown	Dc2+	3CD

CONTINUATION SHEET

Primary#
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Resource Name or # (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull
***Date** 05/05/2014 ☒ Continuation ☐ Update

 739 55th Street	Horizontal wood siding, aluminum windows, shallow bay, brick side porch.	March 1908 (original building permit 11718)	Owner: George Schrider Builder: Shrider & Hart Architect: E. G. Hart	D2+	3CD
 740 55th Street	Stucco and contemporary horizontal siding, aluminum sash casement and fixed windows, front-gable entry porch, brackets and bargeboards.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner (1910): A. M. Foster (no improvements) Builder: unknown	Dc2+	3CD
 750 55th Street	Horizontal wood siding, wood multi-lite sash windows, brick chimney, full width porch with posts, raised with wood garage door.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner (1910): George Schrider (no improvements) Builder: unknown	Dc2+	3CD
 759 55th Street	Horizontal wood siding, vinyl windows at first story, original dormer window, modillion details, entry porch with columns.	January 1910 (original building permit 18226)	Owner: Fred A. Muller Builder: owner	C2+	3CD
 760 55th Street	Stucco cladding, wood sash multi-lite windows at front and sides, brackets and bargeboard, reconfigured shed-roof porch.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner: unknown Builder: unknown	Dc2+	3CD
 763 55th Street	Horizontal and wood shingle siding, vinyl windows at first story, wood multi-lite casement windows at side and dormer, extended rafter posts at dormer. Side entry porch.	Estimated 1912-1913 (not on 1911 Sanborn)	Owner: unknown Builder: unknown	Dc2+	3CD

CONTINUATION SHEET

Primary#
HRI #
Trinomial

Page 31 **of** 36 **Resource Name or #** (Assigned by recorder) 55th and Dover Residential District
*__Recorded by__ Page & Turnbull ***Date** 05/05/2014 ☒ Continuation ☐ Update

 767 55th Street	Stucco at basement, wood shingle cladding at first story. Wood fixed and double hung windows, vent at gable front. Brackets and bargeboard. Shed-roof porch with posts.	January 1913 (original building permit 30246)	Owner: A. C. Pfrang Builder: owner	D2+	3CD

NON-CONTRIBUTING PROPERTIES

Photo and Address	Description	Built Date	Owner	OCHS Code (1996)	CHRS Code (2013)
 5305-5309 Dover Street	Stucco cladding, vinyl windows, reconfigured primary façade, duplex, visible hipped roof behind parapet.	October 1906 (original building permit 5005)	Owner: W. A. Cross Builder: J. W. White Architect: Christopher M. Cook, Bank Building, Oakland.	Dc2+	6Z
 678 53rd Street	Stucco cladding, wood sash casement windows, brick stair to porch.	Estimated 1930s.	Owner: unknown Builder: unknown	Not evaluat ed	6Z
 682 53rd Street	Stucco cladding, vinyl windows, brick stair to entry porch.	Estimated 1930s.	Owner: unknown Builder: unknown	D2-	6Z
 744 53rd Street	Contemporary construction	No info	No info	Not evaluated	6Z
 608 54th Street	Stucco siding, wood sash fixed and casement windows at front, aluminum sash windows at side, brick chimney.	April 1920 (original building permit 55740)	Owner: George W. Anderson Builder: William Simms	D2+	6Z

 612 54th Street	Stucco siding, wood multi-lite fixed and casement windows, wood garage doors, multi-unit building.	March 1925 (original building permit A2110)	Owner: L. Jorgensen Builder: John Lehman	D2+	6Z
 700 54th Street	Stucco cladding, double hung multi-lite wood sash windows (few vinyl replacements), exposed rafters and tails, deep eaves, cross gable.	Estimated 1930s (not on 1911 Sanborn)	Owner (1910): Bowles & Fitzgerald (unimproved land) Builder: unknown	D2+	6Z
 712 54th Street	Stucco cladding, wood sash windows, entry porch enclosed with security gate.	March 1915 (original building permit 32712)	Owner: C. B. Coit Builder: Roger Coit	D2+	6Z
 607 55th Street	Stucco cladding, aluminum windows at the primary façade wood sash windows at sides, garage reconfigured.	August 1923 (original building permit 81660)	Owner: J. O. O'Conner, Builder: F. A. Anderson	D2+	6Z
 611 55th Street	Stucco cladding, wood sash windows, flush garage.	August 1923 (original building permit 81661)	Owner: J. O. O'Conner, Builder: F. A. Anderson	D2+	6Z

 637 55th Street	Stucco cladding, mix of original casement and vinyl double sash windows at front façade, exposed rafter beams, entry porch with columns.	October 1922 (original building permit 73464)	Owner: S. H. Wade Builder: C. T. Moore	D2+	6Z
 638-640 55th Street	Reconfigured primary façade, wood shingle siding, vinyl windows.	August 1909 (original building permit 16786)	Owner: Minnie M. Estay Builder: Charles. A. Doss, contractor.	D2+	6Z
 652-654 55th Street	Stucco siding, wood sash fixed and multi-lite windows, original garage doors.	June 1923 (original building permit 80002)	Owner: Miss Ivers Builder: Owner	D2+	6Z
 655 55th Street	Stucco cladding, vinyl windows, side entrance porch with columns, exposed rafter beams.	October 1924 (original building permit 97761)	Owner: J. M. Bandy Builder: owner	Dc2+	6Z
 670 55th Street	Stucco siding, vinyl windows at front, wood and vinyl at sides. Brackets at gable, arched entry porch.	March 1924 (original building permit 89422)	Owner: N. Nyman Builder: E. Lundberg, cementworker living in Oakland.	D2+	6Z
 676 55th Street	Horizontal wood siding, aluminum fixed and casement windows at front, brick chimney, entry porch with stucco columns.	Estimated 1920s (not on 1911 Sanborn)	Owner: Unknown Builder: Unknown	D2+	6Z
 680 55th Street	Contemporary construction, multi-unit building, stucco cladding, flat roof	After 1950 (not on 1950 Sanborn)	Owner: Unknown Builder: Unknown	F2-	6Z

 681 55th Street	Horizontal wood siding, vinyl windows, brick chimney, second story addition.	February 1914 (original building permit 34141)	Owner: R. C. Jensen Builder: Owner	D 2+	6Z

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CUL-5 UCSF Benioff Children's Hospital Oakland New Hospital Building Project Oakland Cultural Heritage Survey Evaluation Sheet

Oakland Cultural Heritage Survey
Oakland City Planning Department **EVALUATION SHEET** ES

Common (and Historic) Name(s) Children's Hospital A/B wing (C), Baby Hospital (H)
Address/Location 747 52nd Street

A. VISUAL QUALITY/DESIGN
1. Exterior L-plan with prominent solarium bays, arcade, terra cotta frieze, multiple rooflines + tower — E **VG** G FP
2. Interior (list best spaces first)
   Space 1 sunny rooms + double-loaded corridors — no public access, N/A — E VG G FP
   Space 2 — E VG G FP
   Other Spaces — E VG G FP
3. Construction pressed brick on RC, TC roof tile, extensive glazing — E **VG** G FP
4. Designer/Builder EW Cannon — E VG **G** FP
5. Type/Style 1920s Mediterranean institutional bldg, fine/many — E **VG** G FP
6. Supportive Elements magnolia tree, compatible 1940s addition, retains original occupant — E VG **G** FP

B. HISTORY/ASSOCIATION
7. Person/Organization Children's Hospital, women's welfare organization T-K — E VG **G** FP
8. Event — E VG G **FP**
9. Patterns Progressive-era public health/social welfare organizations, devt of specialized med. for children — E **VG** G FP
10. Age 1926 — E VG **G** FP

S-IC

C. CONTEXT
11. Continuity part of Chil. Hosp. complex, not considered a district — E VG G **FP**
12. Familiarity Front concealed by newer bldgs. from street view, but brick roofs + towers prominent from fwy, "billboard" for Ch. Hsp — E VG **G** FP

D. INTEGRITY
13. Condition well maintained, upgraded for current uses — **E** G F P
14. Exterior Alterations 1946-48 addition — compatible '40s modern add. but eliminates entry arcade — overall character remains — E **G** F P
15. Interior Alterations
    Space 1 reconfigured + resurfaced — not public areas, N/A — E G F P
    Space 2 — E G F P
    Other Spaces — E G F P
16. Structural Removals — **E** G F P
17. Site — **E** G F P

E. REVERSIBILITY
18. Exterior Alterations "2/3 or more appears to exist" though reconst. of arcade unlikely — E **G** F P
19. Interior Alterations
    Space 1 N/A — E G F P
    Other Spaces — E G F P

Evaluated by Betty Marvin Date 7/30/13

Reviewed by [signature] Date 7/30/13 ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet

STATUS/RATING
Rating: Present status: ☐A ☐B ☐C ☐D ☐E ☐Not rated ______
Contingency status: ☐a ☐b ☐c ☐d ☐e ☐Not rated ☐Not applicable
Contingency factor: ☐(1) ☐(2) ☐(3) ☐Site of opportunity ______

Composite rating

National Register (Individual): ☐Listed (1) ☐Determined eligible (2) ☐Appears eligible (3) ☐Potential if restored (4b) ☐Potential when over 50 years old (4d) ☐None of the above (6)
NR (as part of group or district only): ☐Listed (1D) ☐Determined eligible (2D) ☐Appears eligible(3D) ☐Potential if restored (4Db) ☐Potential when over 50 (4Dd) ☐ASI (5D) ☐None of the above (6) ☐Other ______

Composite eligibility

SHRI: ☐Primary resource (NR # 1, 2, or 3) ☐Contingency Primary (NR #4..) ☐District Contributor (NR #3D) ☐Contingency Contributor (NR #4D..) ☐ASI (NR #5D) ☐Noncontributor (NR #6) ☐Ineligible (NR #6)
City Landmark: ☐Listed ☐In S-7 Zone ☐On Study List ☐None of the above

This form has been adapted from the San Francisco Downtown Inventory, prepared for the Foundation for San Francisco's Architectural Heritage by Charles Hall Page and Associates, and Harold Kalman's The Evaluation of Historic Buildings.

Rev. 6/88

ATTACHMENT D

Oakland Cultural Heritage Survey
Oakland City Planning Department

EVALUATION TALLY SHEET

ET

Address 747 52nd St., A/B Wing

Scores				Item	Column I Survey Rating	Column II National Register Eligibility
16	8	4	0	1. Exterior		
				2. Interior		
8	4	2	0	(a) Space 1		
4	2	1	0	(b) Space 2		
2	1	1	0	(c) Other Spaces		
10	5	3	0	3. Construction		
6	3	2	0	4. Designer/Builder		
10	5	3	0	5. Type/Style		
8	4	2	0	6. Supportive Elements		
				A. VISUAL QUALITY/DESIGN TOTAL (40 Maximum)	22	
20	10	5	0	7. Person/Organization		
20	10	5	0	8. Event		
12	6	3	0	9. Patterns		
8	4	2	0	10. Age *		
				B. HISTORY/ASSOCIATION TOTAL (40 Maximum)	13	
8	4	2	0	11. Continuity		
20	10	5	0	12. Familiarity		
				C. CONTEXT TOTAL (20 Maximum)	5	
				PRELIMINARY TOTAL (Sum of A, B, and C: 100 Maximum)	40	
—	-3%	-5%	-10%	13. Condition (From A, B, and C total)		
				14. Exterior Alterations *		
—	-20%	-40%	-80%	(a) From A and C total (excl. 2)	- 5.4	
—	-10%	-20%	-40%	(b) From B total	- 1.3	
				15. Interior Alterations *		
—	-20%	-40%	-80%	(a) Space 1		
—	-20%	-40%	-80%	(b) Space 2		
—	-20%	-40%	-80%	(c) Other Spaces		
				16. Structural Removals *		
—	-40%	-60%	-80%	(a) From A and C total		
—	-25%	-38%	-50%	(b) From B total		
—	-25%	-38%	-50%	17. Site * (from B total)		
				D. INTEGRITY DEDUCTIONS	6.7	
				ADJUSTED TOTAL (Preliminary Total minus Integrity Deductions)	33.3	
(3)	(3)	(2)	(2)	18. Reversability of Item 14 (Exterior)		
				19. Reversability of Item 15 (Interior)		
(3)	(3)	(2)	(2)	(a) Space 1		
(3)	(3)	(2)	(2)	(b) Space 2		
(3)	(3)	(2)	(2)	(c) Other Spaces		

RATING (FROM COLUMN I TOTALS):

Present Status (Adjusted Total): ☐ A (41+) ☒ B (28-40) ☐ C (18-27) ☐ D (11-17) ☐ E (0-10)

Contingency Status (Preliminary Total plus higher ratings for certain items):
☐ A (41+) ☒ B (28-40) ☐ C (18-27) ☐ D (11-17) ☐ E (0-10) ☐ Not applicable

Contingency Factors: ☐ (1) More significant information is learned about the property's history, design, or development (specify evaluation criteria and contingency score for each criterion:______________). ☒ (2) Existing (exterior) (interior) alterations are reversed; feasibility doubtful or unknown (line 18 or 19 rated "F" or "P") ☐ (3) Existing (exterior) (interior) alterations are reversed; feasibility appears good (line 18 or 19 rated "E" or "G").

ELIGIBILITY (FROM COLUMN II TOTALS):

National Register (individual): ☐ Listed (check Federal Register) ☐ Determined Eligible (check Federal Register) ☐ Appears eligible (Adjusted Total 28+ except *) ☐ Potential if restored (Preliminary total 28+ and line 14 is "F" or "P" except *) ☐ Potential when over 50 years old (Preliminary Total 28+ and property is less than 50years old except *) ☐ None of the above

National Register (as part of Group or District only): ☐ Listed (check Federal Register) ☐ Determined eligible (check Federal Register) ☐ Appears eligible (line 11 is "E" or "VG" except *) ☐ Appears eligible if restored (line 11 if "E" or "VG" and line 14 is "P" except *) ☐ Appears eligible when more than 50 years old (line 11 is "E" or "VG" and property is less than 50 years old except *) ☐ None of the above

City Landmark: ☐ Listed (per LM list dated ___/___/___) ☐ In S-7 Zone ☐ On Study List (per SL list dated ___/___/___) ☐ None of the above.

*The National Register generally excludes properties that are less than 50 years old (#10), have been severly altered, (#14, 15, & 16), or have been moved (#17) unless a moved property is significant primarily for architectural value or as the most important surviving structure associated with a person or event.

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Rev. 6/88

Oakland Cultural Heritage Survey
Oakland City Planning Department — **EVALUATION SHEET** — ES

Common (and Historic) Name(s) Children's Hospital, B/C wing (C), 1946-48 addition
Address/Location 747 52nd St.

A. VISUAL QUALITY/DESIGN
1. Exterior streamlined Int'l interp. of 1926 blg's materals + motifs — E VG G FP
2. Interior (list best spaces first) with matching bay + frieze + low, sleek massing
   - Space 1 N/A — E VG G FP
   - Space 2 — E VG G FP
   - Other Spaces — E VG G FP
3. Construction RC + brick, probably generic/retro for 1946 — E VG G FP
4. Designer/Builder Stone + Mulloy — E VG G FP
5. Type/Style Medit./Int'l hybrid, compatible add. to 1926 A/B blg. modern facility in semi-revival costume — E VG G FP
6. Supportive Elements — — E VG G FP

B. HISTORY/ASSOCIATION
7. Person/Organization Children's Hospital, continuing occupant - T-LC — E VG G FP
8. Event — — E VG G FP
9. Patterns growing clientele, technology, + formality of medical instit.s in mid-20th c — E VG G FP
10. Age 1946-48 — E VG G FP

C. CONTEXT
11. Continuity ensemble with 1926 blg, not considered a district — E VG G FP
12. Familiarity subordinate to 1926 blg, not well known individually — E VG G FP

D. INTEGRITY
13. Condition well maintained, upgraded for modern uses — E G F P
14. Exterior Alterations addition along E side in courtyard — E G F P
15. Interior Alterations
   - Space 1 — E G F P
   - Space 2 — E G F P
   - Other Spaces — E G F P
16. Structural Removals — E G F P
17. Site — E G F P

E. REVERSIBILITY
18. Exterior Alterations unlikely — E G F P
19. Interior Alterations
   - Space 1 — E G F P
   - Other Spaces — E G F P

Evaluated by Betty Marvin Date 7/30/13

Reviewed by Joann Pavlinec Date 7/30/13 ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet
Reviewed by ______ Date ______ ☐ Approved ☐ See Comment Sheet

STATUS/RATING
Rating: Present status: ☐A ☐B ☐C ☐D ☐E ☐Not rated ______
Contingency status: ☐a ☐b ☐c ☐d ☐e ☐Not rated ☐Not applicable
Contingency factor: ☐(1) ☐(2) ☐(3) ☐Site of opportunity ______

Composite rating

National Register (Individual): ☐Listed (1) ☐Determined eligible (2) ☐Appears eligible (3) ☐Potential if restored (4b) ☐Potential when over 50 years old (4d) ☐None of the above (6)
NR (as part of group or district only): ☐Listed (1D) ☐Determined eligible (2D) ☐Appears eligible(3D) ☐Potential if restored (4Db) ☐Potential when over 50 (4Dd) ☐ASI (5D) ☐None of the above (6) ☐Other

Composite eligibility

SHRI: ☐Primary resource (NR # 1, 2, or 3) ☐Contingency Primary (NR #4..) ☐District Contributor (NR #3D) ☐Contingency Contributor (NR #4D..) ☐ASI (NR #5D) ☐Noncontributor (NR #6) ☐Ineligible (NR #6)
City Landmark: ☐Listed ☐In S-7 Zone ☐On Study List ☐None of the above

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Oakland Cultural Heritage Survey
Oakland City Planning Department

EVALUATION TALLY SHEET | ET

Address 747 52nd St, B/C Wing

Scores				Item	Column I Survey Rating	Column II National Register Eligibility
16	8	4	0	1. Exterior		
				2. Interior		
8	4	2	0	(a) Space 1		
4	2	1	0	(b) Space 2		
2	1	1	0	(c) Other Spaces		
10	5	3	0	3. Construction		
6	3	2	0	4. Designer/Builder		
10	5	3	0	5. Type/Style		
8	4	2	0	6. Supportive Elements		
				A. VISUAL QUALITY/DESIGN TOTAL (40 Maximum)	19	
20	10	5	0	7. Person/Organization		
20	10	5	0	8. Event		
12	6	3	0	9. Patterns		
8	4	2	0	10. Age *		
				B. HISTORY/ASSOCIATION TOTAL (40 Maximum)	3	
8	4	2	0	11. Continuity		
20	10	5	0	12. Familiarity		
				C. CONTEXT TOTAL (20 Maximum)		
				PRELIMINARY TOTAL (Sum of A, B, and C: 100 Maximum)	22	
--	-3%	-5%	-10%	13. Condition (From A, B, and C total)		
				14. Exterior Alterations *		
--	-20%	-40%	-80%	(a) From A and C total (excl. 2)	-3.8	
--	-10%	-20%	-40%	(b) From B total	-.3	
				15. Interior Alterations *		
--	-20%	-40%	-80%	(a) Space 1		
--	-20%	-40%	-80%	(b) Space 2		
--	-20%	-40%	-80%	(c) Other Spaces		
				16. Structural Removals *		
--	-40%	-60%	-80%	(a) From A and C total		
--	-25%	-38%	-50%	(b) From B total		
--	-25%	-38%	-50%	17. Site * (from B total)		
				D. INTEGRITY DEDUCTIONS	-4.1	
				ADJUSTED TOTAL (Preliminary Total minus Integrity Deductions)	17.9	
(3)	(3)	(2)	(2)	18. Reversability of Item 14 (Exterior)		
				19. Reversability of Item 15 (Interior)		
(3)	(3)	(2)	(2)	(a) Space 1		
(3)	(3)	(2)	(2)	(b) Space 2		
(3)	(3)	(2)	(2)	(c) Other Spaces		

RATING (FROM COLUMN I TOTALS):

Present Status (Adjusted Total): ☐ A (41+) ☐ B (28-40) ☒ C (18-27) ☐ D (11-17) ☐ E (0-10)

Contingency Status (Preliminary Total plus higher ratings for certain items):
☐ A (41+) ☐ B (28-40) ☒ C (18-27) ☐ D (11-17) ☐ E (0-10) ☐ Not applicable

Contingency Factors: ☐ (1) More significant information is learned about the property's history, design, or development (specify evaluation criteria and contingency score for each criterion:________). ☒ (2) Existing (exterior) (interior) alterations are reversed; feasibility doubtful or unknown (line 18 or 19 rated "F" or "P") ☐ (3) Existing (exterior) (interior) alterations are reversed; feasibility appears good (line 18 or 19 rated "E" or "G").

ELIGIBILITY (FROM COLUMN II TOTALS):

National Register (individual): ☐ Listed (check Federal Register) ☐ Determined Eligible (check Federal Register) ☐ Appears eligible (Adjusted Total 28+ except *) ☐ Potential if restored (Preliminary total 28+ and line 14 is "F" or "P" except *) ☐ Potential when over 50 years old (Preliminary Total 28+ and property is less than 50 years old except *) ☐ None of the above

National Register (as part of Group or District only): ☐ Listed (check Federal Register) ☐ Determined eligible (check Federal Register) ☐ Appears eligible (line 11 is "E" or "VG" except *) ☐ Appears eligible if restored (line 11 if "E" or "VG" and line 14 is "P" except *) ☐ Appears eligible when more than 50 years old (line 11 is "E" or "VG" and property is less than 50 years old except *) ☐ None of the above

City Landmark: ☐ Listed (per LM list dated __/__/__) ☐ In S-7 Zone ☐ On Study List (per SL list dated __/__/__) ☐ None of the above.

*The National Register generally excludes properties that are less than 50 years old (#10), have been severly altered, (#14, 15, & 16), or have been moved (#17) unless a moved property is significant primarily for architectural value or as the most important surviving structure associated with a person or event.

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Oakland Cultural Heritage Survey
Oakland City Planning Department **EVALUATION SHEET** ES

Common (and Historic) Name(s) Children's Hospital, A/B + B/C wings (U-shaped courtyard group)
Address/Location 747 52nd St.

A. VISUAL QUALITY/DESIGN
1. Exterior ~~[illegible]~~ Medit. orig. blg plus compatible '40s modern addition – E VG G FP
2. Interior (list best spaces first) prominent bays, TC + pressed brick – addition
Space 1 completes U-shaped ensemble/courtyard E VG G FP
Space 2 E VG G FP
Other Spaces E VG G FP
3. Construction RC + brick, fine materials, prob. generic structure E VG G FP
4. Designer/Builder EW Cannon (1926, G), Stone + Mulloy (1946, V) E VG G FP
5. Type/Style Medit orig blg w modern add that reinterprets orig. elements E VG G FP
6. Supportive Elements magnolia tree; retains orig. occupant E VG G FP

B. HISTORY/ASSOCIATION
7. Person/Organization Childrens Hospital – early 20c women's philanth. org.; T-IC E VG G FP
8. Event — still prominent Bay Area medical inst. E VG G FP
9. Patterns health/social insts. in Progressive era, evolution through WW2 E VG G FP
10. Age 1926 add. 1946-48 era; recog. of children as special population E VG G FP

C. CONTEXT
11. Continuity Chil. Hosp. complex, not considered a district E VG G FP
12. Familiarity prominent view from freeway, though hidden from street by subsequent hospital construction E VG G FP

D. INTEGRITY
13. Condition ~~[illegible]~~ well maintained, upgraded for modern ~~[illegible]~~ uses E G F P
14. Exterior Alterations adds to rear, west, + on E side of '40s blg E G F P
15. Interior Alterations
Space 1 E G F P
Space 2 E G F P
Other Spaces E G F P
16. Structural Removals E G F P
17. Site E G F P

E. REVERSIBILITY
18. Exterior Alterations unlikely E G F P
19. Interior Alterations
Space 1 E G F P
Other Spaces E G F P

Evaluated by Betty Marvin Date 7/30/13

Reviewed by [signature] Date 7/30/13 ☐ Approved ☐ See Comment Sheet
Reviewed by Date ☐ Approved ☐ See Comment Sheet
Reviewed by Date ☐ Approved ☐ See Comment Sheet
Reviewed by Date ☐ Approved ☐ See Comment Sheet
Reviewed by Date ☐ Approved ☐ See Comment Sheet

STATUS/RATING
Rating: Present status: ☐A ☐B ☐C ☐D ☐E ☐Not rated
Contingency status: ☐a ☐b ☐c ☐d ☐e ☐Not rated ☐Not applicable
Contingency factor: ☐(1) ☐(2) ☐(3) ☐Site of opportunity

Composite rating

National Register (Individual): ☐Listed (1) ☐Determined eligible (2) ☐Appears eligible (3) ☐Potential if restored (4b) ☐Potential when over 50 years old (4d) ☐None of the above (6)
NR (as part of group or district only): ☐Listed (1D) ☐Determined eligible (2D) ☐Appears eligible(3D) ☐Potential if restored (4Db) ☐Potential when over 50 (4Dd) ☐ASI (5D) ☐None of the above (6) ☐Other

Composite eligibility

SHRI: ☐Primary resource (NR # 1, 2, or 3) ☐Contingency Primary (NR #4..) ☐District Contributor (NR #3D) ☐Contingency Contributor (NR #4D..) ☐ASI (NR #5D) ☐Noncontributor (NR #6) ☐Ineligible (NR #6)
City Landmark: ☐Listed ☐In S-7 Zone ☐On Study List ☐None of the above

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Oakland Cultural Heritage Survey
Oakland City Planning Department

EVALUATION TALLY SHEET

ET

Address 747 52nd St, A/B plus B/C wings

					Column I Survey Rating	Column II National Register Eligibility
16	8	4	0	1. Exterior		
				2. Interior		
8	4	2	0	(a) Space 1		
4	2	1	0	(b) Space 2		
2	1	1	0	(c) Other Spaces		
10	5	3	0	3. Construction		
6	3	2	0	4. Designer/Builder		
10	5	3	0	5. Type/Style		
8	4	2	0	6. Supportive Elements		
				A. VISUAL QUALITY/DESIGN TOTAL (40 Maximum)	21	
20	10	5	0	7. Person/Organization		
20	10	5	0	8. Event		
12	6	3	0	9. Patterns		
8	4	2	0	10. Age *		
				B. HISTORY/ASSOCIATION TOTAL (40 Maximum)	13	
8	4	2	0	11. Continuity		
20	10	5	0	12. Familiarity		
				C. CONTEXT TOTAL (20 Maximum)	1.25	
				PRELIMINARY TOTAL (Sum of A, B, and C: 100 Maximum)	35.25	
—	-3%	-5%	-10%	13. Condition (From A, B, and C total)		
				14. Exterior Alterations *		
—	-20%	-40%	-80%	(a) From A and C total (excl. 2)	7.65	
—	-10%	-20%	-40%	(b) From B total	1.3	
				15. Interior Alterations *		
—	-20%	-40%	-80%	(a) Space 1		
—	-20%	-40%	-80%	(b) Space 2		
—	-20%	-40%	-80%	(c) Other Spaces		
				16. Structural Removals *		
—	-40%	-60%	-80%	(a) From A and C total		
—	-25%	-38%	-50%	(b) From B total		
—	-25%	-38%	-50%	17. Site * (from B total)		
				D. INTEGRITY DEDUCTIONS	-8.95	
				ADJUSTED TOTAL (Preliminary Total minus Integrity Deductions)	26.30	
(3)	(3)	(2)	(2)	18. Reversability of Item 14 (Exterior)		
				19. Reversability of Item 15 (Interior)		
(3)	(3)	(2)	(2)	(a) Space 1		
(3)	(3)	(2)	(2)	(b) Space 2		
(3)	(3)	(2)	(2)	(c) Other Spaces		

RATING (FROM COLUMN I TOTALS):

Present Status (Adjusted Total): ☐ A (41+) ☐ B (28-40) ☒ C (18-27) ☐ D (11-17) ☐ E (0-10)

Contingency Status (Preliminary Total plus higher ratings for certain items):
☐ A (41+) ☐ B (28-40) ☐ C (18-27) ☐ D (11-17) ☐ E (0-10) ☐ Not applicable

Contingency Factors: ☐ (1) More significant information is learned about the property's history, design, or development (specify evaluation criteria and contingency score for each criterion:________________). ☒ (2) Existing (exterior) (interior) alterations are reversed; feasibility doubtful or unknown (line 18 or 19 rated "F" or "P") ☐ (3) Existing (exterior) (interior) alterations are reversed; feasibility appears good (line 18 or 19 rated "E" or "G").

ELIGIBILITY (FROM COLUMN II TOTALS):

National Register (individual): ☐ Listed (check Federal Register) ☐ Determined Eligible (check Federal Register) ☐ Appears eligible (Adjusted Total 28+ except *) ☐ Potential if restored (Preliminary total 28+ and line 14 is "F" or "P" except *) ☐ Potential when over 50 years old (Preliminary Total 28+ and property is less than 50 years old except *) ☐ None of the above

National Register (as part of Group or District only): ☐ Listed (check Federal Register) ☐ Determined eligible (check Federal Register) ☐ Appears eligible (line 11 is "E" or "VG" except *) ☐ Appears eligible if restored (line 11 if "E" or "VG" and line 14 is "P" except *) ☐ Appears eligible when more than 50 years old (line 11 is "E" or "VG" and property is less than 50 years old except *) ☐ None of the above

City Landmark: ☐ Listed (per LM list dated ___/___/___) ☐ In S-7 Zone ☐ On Study List (per SL list dated ___/___/___) ☐ None of the above.

*The National Register generally excludes properties that are less than 50 years old (#10), have been severly altered, (#14, 15, & 16), or have been moved (#17) unless a moved property is significant primarily for architectural value or as the most important surviving structure associated with a person or event.

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Rev. 6/88

CUL-6 UCSF Benioff Children's Hospital Oakland New Hospital Building Project Historic Resources Technical Report (ESA)

Final

UCSF BENIOFF CHILDREN'S HOSPITAL OAKLAND NEW HOSPITAL BUILDING PROJECT

Historic Resources Technical Report

Prepared for
University of California, San Francisco
Real Estate – Campus Planning
654 Minnesota Street
San Francisco California 94143-0287

December 2023

Final

UCSF BENIOFF CHILDREN'S HOSPITAL OAKLAND NEW HOSPITAL BUILDING PROJECT

Historic Resources Technical Report

Prepared for
University of California, San Francisco
Real Estate – Campus Planning
654 Minnesota Street
San Francisco California 94143-0287

December 2023

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ESA

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TABLE OF CONTENTS

UCSF Benioff Children's Hospital Oakland New Hospital Building Project Historic Resources Technical Report

Page

Page

List of Figures

List of Tables

Appendix

CHAPTER 1
Introduction

This Historic Resources Technical Report (HRTR) was prepared for the University of California, San Francisco (UCSF) as part of the environmental review of the Benioff Children's Hospital Oakland (BCH) New Hospital Building Project (NHB Project). This HRTR identifies all buildings and structures that meet the age threshold for consideration as potential historical resources for the purposes of the California Environmental Quality Act (CEQA), presents a peer review of 2013 historic resource evaluations for concurrence with earlier findings, and evaluates additional buildings and structures that have reached, or will soon reach the 45 year age threshold since 2013.

All buildings and structures located within the NHB Project site are listed in **Table 1** and keyed to **Figure 1**. Those that either currently meet (in 2023) or will likely meet the 45-year age threshold for consideration as a potential historical resource for the purposes of CEQA by the estimated certification date for the Final Environmental Impact Report (FEIR) for the proposed NHB Project anticipated in 2024 (i.e., those constructed in and before 1979) are highlighted in Table 1.

1.1 Summary of Previous Historic Resources Technical Studies of the UCSF BCH Oakland Campus Site

Four documents identifying and evaluating age-eligible potential historical resources within and adjacent to the UCSF BCH Oakland campus site were prepared by Page & Turnbull to inform the impact analysis in the 2015 BCH CMP Project FEIR. Brief summaries are presented below, and those portions of the studies that are relevant to the proposed NHB Project are identified.

- *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I* (HRE Part I)[1]

    The HRE Part I identified and evaluated four buildings (the 1928 A/B Wing, the 1946 B/C Wing, the 1958 Bruce Lyon Memorial Research Center [excluding later additions], and the 1961 Ford D&T Center) and one landscape object (the magnolia tree planted in 1860) that were at least 45 years old in 2013. Of these, only the A/B Wing was determined to qualify as a historical resource for the purposes of CEQA because it was found to be eligible for listing as a City of Oakland Designated Historic Property.[2] None of the buildings, structures, or objects were found to be individually eligible for listing on the California Register under any criteria, nor was the UCSF BCH Oakland campus found to be eligible as a historic district.

[1] Page & Turnbull, *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I,* prepared for LSA Associates, Inc., August 2013.

[2] This finding is incorrectly summarized in the HRE Part I, which states, "In sum, none of the buildings on the Children's Hospital site […] appear to qualify as historic resources under CEQA." This appears to be a typo and is not a departure from the evaluation presented in the HRE Part I. Page & Turnbull, *HRE Part I,* p. 153.

TABLE 1
BUILDINGS AND STRUCTURES WITHIN THE NEW HOSPITAL BUILDING PROJECT SITE

ID [a]	Building/Structure Name	Year Constructed [b]	At least 45 Years Old in 2024	Previously Evaluated	Evaluated/Reassessed in this Report
1	Patient Tower	1982	No	No	No; not age eligible
2	Ford Diagnostic and Treatment (D&T) Center	1961	Yes	Yes	Yes; reassessed for concurrence with previous determination that it does not qualify as a historical resource
3	Cardiac Catheterization Lab	1994	No	Yes	No; not age eligible
4	Cafeteria	1988	No	No	No; not age eligible
5	Western Addition	2009	No	No	No; not age eligible
6	Central Utility Plant (CUP)	ca. 1980 [c]	Yes [c]	No	Yes [c]
7	Chiller Building	2022	No	No	No; not age eligible
8	Hospital Loading Dock	1982	No	No	No; not age eligible
9	B/C Wing	1946	Yes	Yes	Yes; reassessed for concurrence with previous determination that it does not qualify as a historical resource
10	A/B Wing	1928	Yes	Yes	Yes; reassessed for concurrence with previous determination that it qualifies as a historical resource
11	Bruce Lyon Memorial Research Laboratory	1958	Yes	Yes	Yes; reassessed for concurrence with previous determination that it does not qualify as a historical resource
12	Bruce Lyon Addition	1992	No	No	No; not age eligible
13	Temporary Trailer (MRI)	post-2015	No	No	No; not age eligible
14	Temporary Trailer (Facilities Design and Construction	ca. 1990	No	No	No; not age eligible
15	Temporary Trailer (Ed Administration)	ca. 1990	No	No	No; not age eligible
16	Temporary Trailer (Social Services)	ca. 1990	No	No	No; not age eligible
17	Temporary Trailer (Center for Vulnerable Children [CVC])	ca. 1990	No	No	No; not age eligible
18	Temporary Trailer (Education/HIS)	ca. 1990	No	No	No; not age eligible
19	Temporary Trailer (Offices)	ca. 1990	No	No	No; not age eligible
20	Helistop structure	2000	No	No	No; not age eligible

ID [a]	Building/Structure Name	Year Constructed [b]	At least 45 Years Old in 2024	Previously Evaluated	Evaluated/Reassessed in this Report

NOTES:

General: The highlighted rows indicate the buildings and structures that either currently (in 2023) or will meet the 45-year age threshold for consideration as a potential historical resource for the purposes of CEQA by the estimated final certification date for the Final EIR for the proposed Campus Modernization Project anticipated in 2024 (i.e., those constructed in and before 1979).

a Refer to Figure 1 for location of buildings/structures.
b Official construction dates were provided by UCSF. Some official construction dates differ from those presented in previous historic resources technical studies summarized in Section 1.1 of this HRTR.
c The exact construction date of the CUP is uncertain, but it will certainly be approaching the 45-year age threshold for consideration as a potential historical resource for the purposes of CEQA in 2024. For this reason, it is conservatively being evaluated in this HRTR.

SOURCES: UCSF, 2023; Page & Turnbull, Oakland Children's Hospital and Research Center Historic Resource Evaluation Part I, prepared for LSA Associates, Inc., August 2013; City of Oakland. *Children's Hospital and Research Center Oakland Campus Master Plan Project Final Environmental Impact Report*. Prepared by LSA Associates, Inc., 2015.

SOURCE: ESA, 2023; Google Earth, 2023

Figure 1
New Hospital Building Project Site

ESA

- The evaluations presented in the HRE Part I are 10 years old in 2023. The previous findings are reassessed in this HRTR to confirm the adequacy of the HRE for the purposes of analyzing impacts to historical resources under the NHB Project. Since the HRE Part I was prepared, one additional building on the BCH Oakland campus site will likely become age eligible as a potential historical resource by 2024: the Central Utility Plant (CUP). While the exact construction date of the CUP is uncertain, it was likely constructed ca. 1980. UCSF has requested that this building be evaluated in this HRTR.

- *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard* (HRE Part I Supplement)[3]
  - This memorandum determined that two site features are not eligible for listing on the California or Oakland registers as a cultural landscape: the courtyard located between the A/B and B/C wings and the magnolia tree located within the courtyard and directly east of the B/C Wing. Instead, they are considered to be character-defining features of the A/B Wing. On their own, neither the tree nor the courtyard are considered to be historical resources for the purposes of CEQA.
  - No reassessment of these landscape features is required.
- State of California Department of Parks and Recreation (DPR) District Record (523D) Form for the 55th and Dover Residential District[4]
  - Findings determined that the 55th and Dover Residential District, which is located within and adjacent to the BCH CMP Project site, is eligible for listing on the California Register under Criterion 1 with a period of significance of 1906–13. The district includes 119 contributing resources and 24 non-contributing resources. The district qualifies as a historical resource for the purposes of CEQA. Additionally, contributors to the district also qualify as historical resources, but they are not individually eligible for listing on the California Register.
  - The 55th and Dover Residential District is located across 52nd Street from the NHB Project site. The historic district is located outside of the NHB Project site, and no reassessment is required.
- *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis* (HRE Part II)[5]
  - The HRE Part II identified several project-specific impacts on historical resources from the BCH CMP Project, and all were found to be less than significant: "As currently designed, the proposed project at Children's Hospital would not impact the eligibility of the A/B Wing for listing as a City of Oakland Designated Historic Property or the 55th and Dover Residential District for listing in the California Register of Historical Resources."[6]
  - Under the NHB Project, the A/B Wing would be demolished. This impact to a known historical resource is addressed in the NHB Project EIR.

[3] Page & Turnbull, *Historic Resource Evaluation Part I Supplement: Children's Hospital Oakland Magnolia Tree and Courtyard,* prepared for LSA Associates, Inc., November 5, 2013.

[4] Page & Turnbull, DPR 523 form-set for the 55th and Dover Residential District, May 5, 2014, on file at the City of Oakland Planning Department.

[5] Page & Turnbull, *Oakland Children's Hospital and Research Center Historic Resource Evaluation Part II: Proposed Project Analysis,* prepared for LSA Associates, Inc., July 2014.

[6] Ibid., p. 30.

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CHAPTER 2
Regulatory Framework

2.1 State Regulations

The project is subject to review under CEQA, with UCSF as lead reviewing agency for CEQA purposes. The State implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, oversees adherence to CEQA regulations. The OHP also maintains the California Historical Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State's jurisdiction. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The OHP advises recordation of any resource 45 years or older, since "there is commonly a five-year lag between resource identification and the date that planning decisions are made."[7]

2.1.1 California Environmental Quality Act

CEQA (*codified at Public Resources Code [PRC] § 21000 et seq.)* is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a project would have a significant effect on historical resources, unique archaeological resources, or tribal cultural resources (TCR[s]).

Historical Resources

CEQA Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources [California Register]; (2) a resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC § 5024.1(g); and (3) 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 by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

2.1.2 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 § 5024.1[a]). The criteria for eligibility for the California

[7] State of California Office of Historic Preservation, *Instructions for Recording Historical Resources,* March 1995, p. 2.

Register are based upon National Register of Historic Places (National Register) criteria (PRC § 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.

To be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

- **Criterion 1 (Events):** Resources that are associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California.
- **Criterion 2 (Persons):** Resources that are associated with the lives of persons important to history.
- **Criterion 3 (Architecture):** Resources that embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values.
- **Criterion 4 (Information Potential):** Resources or sites that have yielded or have the potential to yield information important in prehistory or history.

In addition to meeting at least one of the four criteria, a resource must retain integrity, meaning that it must have the ability to convey its significance through the retention of seven aspects, or qualities, that in various combinations define integrity. Consideration of integrity for California Register eligibility closely follows the seven aspects of integrity that apply to the National Register. These are:

- **Location:** Place where the historic property was constructed;
- **Design:** Combination of elements that create the form, plans, space, structure, and style of the property;
- **Setting:** The physical environment of the historic property, inclusive of the landscape and spatial relationships of the buildings;
- **Materials:** The physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property;
- **Workmanship:** Physical evidence of the crafts of a particular culture or people during any given period in history;
- **Feeling:** The property's expression of the aesthetic or historic sense of a particular period of time; and
- **Association:** Direct link between an important historic event or person and an historic property.

The California Register includes 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 assigned a California Register Historical Resource Status Code (CRHSC) rating of 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;
- Historical resources contributing to historic districts; and
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

2.2 Local Regulations

2.2.1 City of Oakland Historical Resources

Under Section 17.158.090 of the City of Oakland Planning Code (2005), for purposes of evaluating environmental impacts under CEQA, a historical resource is a resource that meets any of the following criteria:

1. A resource listed in, or determined to be eligible for listing in, the California Register;
2. A resource included in Oakland's Local Register of historical resources (defined in General Plan Historic Preservation Element Policy 3.8 below), unless the preponderance of evidence demonstrates that it is not historically or culturally significant. Historical resources are defined in General Plan Historic Preservation Element Policy 3.8 as follows:
   a. All Designated Historic Properties [Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties]; and
   b. Those Potential Designated Historic Properties that have an existing rating of "A" or "B" or are located within an Area of Primary Importance (API);
3. A resource identified as significant (e.g., rated 1–5) in a historical resource survey recorded on Department of Parks and Recreation (DPR) 523 Form, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
4. Any object, building, structure, site, area, place, record, or manuscript which the Oakland City Council determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the California Register CEQA Guidelines Section 15064.5; or
5. A resource that is determined by the City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

Evaluation Criteria for Eligibility as a City of Oakland Designated Historic Property

In order to determine whether a property is eligible as for inclusion on the local register or as a designated historic property, the property is rated on an Evaluation Sheet for each of 14 evaluation criteria.[8] These criteria are grouped into four categories: architecture, history, context, and integrity. The ratings are converted to numerical scores and combined for a total score, which is then converted into an overall rating (i.e., A, B, C, D, or E). An A-rated property is of the highest importance, a B-rated property is of major importance, a C-rated property is of secondary importance, and a D-rated property is of minor importance. Properties "of no particular interest" are assigned E ratings, and properties that were constructed too recently to rate are assigned F ratings.

A property that has been altered or that is less than 50 years old may also have a contingency rating shown by a lowercase letter, indicating that the property may be eligible for a higher rating in the future.

Buildings also receive a numerical rating indicating their association with a district: 1 indicates that the building is located within an API, 2 indicates that the building is located within an ASI, and 3 indicates that the building is not associated with a district (see the following section for more information regarding these classes of historic districts). A "+" indicates that a building is a contributor to the district, a "-" indicates that it is not a contributor, and a "*" indicates that it is a potential contributor.

The City of Oakland considers properties with A, B, C, and contingency ratings of C and above to "warrant consideration for possible preservation."[9] These properties, if not already Designated Historic Properties, are classified as Potential Designated Historic Properties (PDHPs).

Evaluation for Eligibility as a City of Oakland Local Historic District

The Historic Preservation Element of the City of Oakland General Plan describes two levels of Preservation Districts: Class 1 Preservation Districts are all Areas of Primary Importance (API) identified by the intensive survey plus other areas that meet the "Guidelines for Determination of Preservation District Eligibility," and Class 2 Preservation Districts are all Areas of Secondary Importance (ASI) identified by the intensive survey plus other areas that meet the "Guidelines for Determination of Preservation District Eligibility."[10]

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8 Both the Oakland Cultural Heritage Survey (OCHS) and the Landmarks Preservation Advisory Board (LPAB) criteria and evaluations determine eligibility for Oakland's Local Register. Using either would determine if a building, structure, object, or site is eligible for the Local Register. The OCHS criteria are based on the National and California Register criteria, which has already been analyzed in the Historic Resource Evaluation. Therefore, using the LPAB criteria gives an alternate evaluation, making the analysis more comprehensive in determining which properties warrant preservation.

9 " Summary of the Historic Preservation Element of the Oakland General Plan," *City of Oakland*, February 1994, accessed June 12, 2023, https://cao-94612.s3.amazonaws.com/documents/Historic-Preservation-Summary.pdf.

10 Oakland General Plan, Historic Preservation Element, Chapter 4: Preservation Incentives and Regulations, Policy 2.2: Landmark and Preservation District Eligibility Criteria.

Areas of Primary Importance (APIs) are areas that have been identified by an intensive survey as having a high proportion of individual properties with ratings of "C" or higher. At least two-thirds of the properties within an API must be contributory to the API, i.e. they reflect the API's principle historical or architectural themes. APIs appear eligible for the National Register of Historic Places either as districts or as historically related complexes. In general, properties with excellent or good integrity which are of the period of significance and are otherwise compatible contribute to National Register districts.

Areas of Secondary Importance (ASIs) are similar to Areas of Primary Importance except that (a) an ASI does not appear eligible for the National Register, and (b) altered properties which do not now contribute to the ASI but would if restored are counted as contributors for purposes of the two-thirds threshold. In general, properties with fair integrity may contribute to ASIs.

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CHAPTER 3
Review of 2013 Evaluations for Concurrence

The 2013 HRE Part I identified and evaluated four buildings that were at least 45 years old at that time. These were the A/B Wing, B/C Wing, Bruce Lyon Memorial Research Center, and the Ford D&T Center. The evaluations presented in the 2013 HRE Part I are 10 years old in 2023. Per California Public Resources Code Section 5024.1(g)(4), "If the survey is five or more years old at the time of its nomination for inclusion in the California Register, the survey is updated to identify historical resources which have become eligible or ineligible due to changed circumstances or further documentation and those which have been demolished or altered in a manner that substantially diminishes the significance of the resource." Sufficient time has elapsed to consider that the eligibility of these buildings to qualify as historical resources may have changed due to different circumstances or further documentation available since 2013. Therefore, they are being reassessed for concurrence with the findings in the HRE Part I.

3.1 Buildings Previously Determined to Not Qualify as Historical Resources

The B/C Wing, Bruce Lyon Memorial Research Center, and the Ford D&T Center were previously determined not to qualify as historical resources for the purposes of CEQA. Since 2013, no new information has come to light that would indicate that any of these three buildings have acquired significance. As such, no changes are warranted to the historic status of any of these three buildings, and ESA finds that they do not qualify as historical resources for the purposes of CEQA.

3.2 Building Previously Determined to Qualify as a Historical Resource

The A/B Wing is the only building on the BCH Oakland Campus site that was previously determined to qualify as a historical resource for the purposes of CEQA because it was found to be eligible for listing as a City of Oakland Designated Historic Property. ESA staff performed a survey of the exterior of the A/B Wing in February 2023 and confirmed that the detailed architectural description presented on pages 49–53 of the HRE Part I accurately describes its current appearance. No recent alterations were observed by ESA staff, and UCSF has confirmed that no major alterations or rehabilitation projects have occurred at the A/B Wing since it was evaluated in 2013.[11]

[11] Diane Wong (UCSF), email communication with ESA, July 11, 2023.

3.2.1 California Register Eligibility

The A/B Wing was previously found to be ineligible for listing on the California Register because it possessed significance but lacked sufficient integrity. No new information has come to light relative to the A/B Wing that could affect its historic and architectural significance under California Register criteria 1 and 3 or its lack of sufficient integrity to convey its significance. For these reasons, ESA finds that the 2013 evaluation of the A/B Wing remains correct and appropriate in 2023. Therefore, it is not individually eligible for listing on the California Register.

3.2.2 City of Oakland Designated Historic Property Eligibility

In 2013, Page & Turnbull performed an intensive-level survey evaluation for City of Oakland Landmark eligibility for the A/B Wing and found that it should be rated B3. The rating signifies that the building, which is not located within a historic district, is a building of major importance.[12] The HRE Part II identified the following character-defining features of the A/B Wing:

- The building's footprint; its narrow linear form and its southern orientation reflect the era of the building's construction and its status when built as a modern hospital.
- The ratio of solid to void; the building's evenly spaced smaller windows are characteristic of the Northern Italian Renaissance style which it references.
- Brick and terra cotta cladding; this cladding is original to the building's design and construction, and is representative both of its Northern Italian Renaissance inspiration and the programmatic sanitation and fire-safety requirements of the Baby Hospital.
- Two two-story, five-sided bays; these bays were used as solariums during an era when sunlight was believed to have healing qualities and are character defining for their programmatic use.
- Original windows of the primary type and surrounds: the building retains most of its original windows within original window surrounds—paired two-over-two, double-hung, wood-sash windows with multi-light awning transoms and brick lintels—which are representative of the building's era of construction.
- Ornamentation and architectural detail: the building is distinguished by its high level of design detail, including fluted columns with capitals that feature acanthus leaves, urns, fleur-de-lis, cherub's heads, and griffins, molded frieze depicting animal and bird motifs, bambino medallion, and a terra cotta balcony supported by ornamented brackets with floral and acanthus-leaf motifs.
- The spatial openness of the courtyard, which complements the long narrow L-shaped design and the siting of the A/B Wing.
- The magnolia tree, which may have contributed to the siting of the courtyard and hence the design and siting of the A/B Wing.[13]

[12] This finding is incorrectly summarized in the HRE Part I, which states that a rating of B3 signifies "that the building is of secondary importance, not located in a district or area of importance" This appears to be a typo and is not a departure from the evaluation presented in the HRE Part I. Page & Turnbull, *HRE Part I*, p. 93.

[13] Page & Turnbull, *HRE Part II*, pp. 8–9.

Because no new information has come to light and there have been no changes in the circumstances of the A/B Wing since it was evaluated in 2013, ESA finds that the rating of B3 remains correct and appropriate in 2023. ESA confirms the continued existence of the character-defining features listed above. Therefore, the A/B Wing remains eligible for listing as a City of Oakland Designated Historic Property.

3.2.3 Status of the A/B Wing as a Historical Resource Under CEQA

Based on a review of previous evaluations of the A/B Wing and the analysis presented above, the building remains eligible as a City of Oakland Designated Historic Property and therefore continues to qualify as a historical resource for the purposes of CEQA. To reiterate, neither the tree nor the courtyard are considered to be historical resources for the purposes of CEQA. Rather, they are considered to be character-defining features of the A/B Wing.

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CHAPTER 4
New Evaluation of the Central Utility Plant

4.1 Architectural Description

The CUP is located on the west side of the NHB Project site and abuts the B/C Wing to the east and north, the cafeteria to the north, and the loading dock to the south. A gated yard separates the CUP from the chiller building to the west. The CUP is a two-story building with a rectangular footprint that is capped by a flat roof with roof-mounted equipment and ducts. It appears to be of reinforced concrete construction, and the painted concrete structure is exposed on the exterior of the building (**Figure 2**).[14]

SOURCE: ESA, 2023

UCSF Benioff Children's Hospital Oakland New Hospital Building Project

Figure 2
Central Utility Plant, View Facing Northeast, the cafeteria is visible in the left background, and the B/C wing and loading dock are visible in the right background.

[14] This is a departure from the architectural description of the CUP presented in the HRE Part I, which describes the building as being "clad in concrete panels." See Page & Turnbull, *HRE Part I*, p. 61.

For the purposes of this evaluation, the primary façade faces south. The first floor features metal panels with louvers of varying dimensions and a vertically oriented window with six lites, at least one of which appears to include a sliding sash. Five metal exhaust pipes extend vertically from the first floor to above the roofline. The second floor features one three-part, vinyl-sash window and one window with a single lite.

The secondary façade faces west and is accessed via a metal gate. The façade features a metal staircase attached to the wall that leads to a door at the second floor. Many metal exhaust pipes extend vertically from between the first and second floors to above the roofline.

4.2 Construction Chronology

The CUP was constructed ca. 1980, and the exact construction date is uncertain. Citing a 2000 report by Rutherford & Chekene (structural engineers), the HRE Part I presented the following brief construction chronology: "In 1979, the one-story Central Plant/West Site Plant was constructed abutting the west side of the B/C Wing. A second floor was added to the Plant in 1987."[15] However, an article in the *Oakland Tribune* indicates that the CUP was one component of a larger project that wasn't begun until May 1980:

> *Construction has begun on a $23 million earthquake-safety renovation project […]. The three-stage project, scheduled for completion in late 1982, includes a five-story pavilion housing 86 acute care beds[(i.e., the Patient Tower)], a new power and storage building [(i.e., the CUP)] and renovation of two older structures [(i.e., the A/B and B/C wings)]. […] This work is financed through donations and a $23 million revenue bond issued by the city of Oakland, which is backed by the state and will be repaid through hospital fees and donations at no cost to the city. General contractor for the project is Oakland-based Stolte Inc. It was designed by the architectural firm of Kaplan, McLaughlin, Diaz.*[16]

The cafeteria was constructed in 1987 abutting the north façade of the CUP.[17]

4.3 Historic Context

4.3.1 Oakland Children's Hospital

The following historic context is an excerpt from the 2015 BCH CMP Project Final EIR:

> *In 1911, Bertha Wright, a visiting nurse for the Collegiate Alumnae Association of Alameda County, formed a group called the Baby Hospital Association with the mission to explore the establishment of a hospital specifically designed for infants and children under the age of five. […]*
>
> *In 1912, the Baby Hospital Association purchased a large Queen Anne-style building known as the McElrath mansion, located on 51st Street between Grove Street (now*

[15] Page & Turnbull, *HRE Part I*, p. 61.

[16] Del Lane, "Hospital Starts Quake Project," *Oakland Tribune,* May 11, 1980, p. A17.

[17] Page & Turnbull, *HRE Part I*, p. 41.

Martin Luther King Jr. Way) and Telegraph Avenue, to house their new hospital. […]. On September 16, 1914, the Baby Hospital in the McElrath mansion was dedicated.

In the 1920s, changes in building code necessitated the construction of a new fireproof masonry hospital building. The Baby Hospital Association secured loans for new construction, and in 1926 selected Oakland architect Edward W. Cannon to design the new hospital. Cannon designed a state-of-the-art steel frame and reinforced concrete L-shaped building in a Northern Italian Romanesque style that reflected the latest social and hygiene theory in hospital design. The new hospital building included two south-facing two-story solariums, as well as a south-facing terrace and a colonnaded porch at the entrance. The Baby Hospital (now known as the A/B Wing) was dedicated in 1928.

The population of the East Bay increased dramatically during World War II, and patient load at the Hospital rose accordingly; between 1940 and 1945, patient load grew from 10,000 visits a year to 24,500. In 1945, the Hospital hired the architecture firm of Stone and Mulloy to design a master plan for hospital expansion. The firm specialized in hospital design, and the plan they developed reflected contemporary advances in the field, including interior spaces that facilitated department cooperation. Work began on the first portion of the proposed master plan, which necessitated the demolition of the outmoded McElrath mansion. A magnolia tree located directly east of the McElrath house that had been planted around 1860 by female members of the Alden family was preserved during this demolition. The new B/C Wing of the Hospital was [constructed in 1946 and] dedicated on October 17, 1948.

Between 1947 and 1957, the Hospital's board purchased almost all of the lots and houses surrounding the Hospital on Grove (Martin Luther King Jr. Way), 51st, 52nd, and Dover Streets. Although some of these houses served as housing and administration buildings, eventually all were demolished for hospital expansion. In [1958], the Bruce Lyon Memorial Research Laboratory, designed by Stone, Marraccini and Patterson, was constructed on the southern portion of the hospital property, and in [1961], the William H. and Helen C. Ford Diagnostic and Treatment Center, also designed by Stone, Marraccini and Patterson, was constructed and dedicated. The south-facing entrance and lobby of the A/B Wing (Baby Hospital) were expanded and remodeled in 1962, and third story additions were built at the A/B Wing and the B/C Wing.

The construction of the Grove-Shafter freeway (State Route 24) in 1968-69 hemmed in any potential Hospital expansion to the east, altered circulation patterns around the Hospital complex, and limited visual access to the A/B Wing. In the 1970s [and early 1980s], several additions were made to the Hospital complex and approval for larger additions was granted. The [CUP, also known as the] West Site Plant, designed by Kaplan/McLaughlin, was constructed adjacent to the west façade of the B/C Wing [ca. 1980]. At this time, City approval was received for a new hospital building at the intersection of 52nd and Grove streets, which would adjoin the B/C Wing. The new five-story patient care facility, designed by KMD and known as the Patient Tower, opened on September 12, 1982. This addition reoriented the hospital complex so that it fronted north onto 52nd Street, and further reduced vehicular and visual access to the A/B Wing and the B/C Wing.

More recent construction at Children's Hospital includes the Cafeteria [(1988)], a one-story build-out at the B/C Wing (1987), the Bruce Lyon Memorial Research Center Addition (1992), the Cardiac Catheterization Laboratory (1993), and the Outpatient

Center and parking garage (1993). No major new construction has taken place at Children's Hospital since completion of these projects in 1993.[18]

4.3.2 KMD Architects

The HRE Parts I and II identified the architect of the CUP as Kaplan/McLaughlin,[19] and a 1980 *Oakland Tribune* article identified the architect as Kaplan McLaughlin Diaz.[20] Kaplan/McLaughlin was established in 1963 by partners Herbert P. McLaughlin, Jr. (1934–2015), and Ellis Kaplan (1925–2012). [21] They were joined by partner Jim Diaz in 1968, and the firm's name changed to Kaplan McLaughlin Diaz in 1977. The name subsequently changed to KMD Architects.[22] Therefore, it is logical that the design of the CUP, which was constructed ca. 1980, should be attributed to KMD Architects and not Kaplan/McLaughlin. Additionally, KMD Architects designed the Patient Tower that was completed in 1982 on the NHB Project site.[23]

KMD Architects remains in operation in 2023 and has offices in San Francisco, Seattle, Los Angeles, and Mexico City. The firm's wide range of international projects, some of which entailed the adaptive reuse of historic buildings, are primarily found in the healthcare, government, education, and hospitality sectors. Now in its 60th year, the firm has received more than 250 awards including more than 40 from the American Institute of Architects.[24]

KMD Architects have completed numerous high-profile projects including:

- Kaiser Permanente Mission Bay Medical Offices in San Francisco, CA (2016)
- Stanford National Accelerator Laboratory Science and User Support Building in Melo Park, CA (2015)
- San Francisco Public Utilities Commission Headquarters in San Francisco, CA (2012)
- UCSF Medical Office Building and Osher Center in San Francisco, CA (2010)
- FEMA Disaster Operations Center in Winchester, VA (2009)
- FBI Field Office in Dallas, Texas (2002)
- Ronald V. Dellums Federal Building in Oakland, CA (1993)

KMD Architects is an internationally recognized, award-winning, 60-year-old design firm and qualifies as a master architecture firm.

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[18] CHRCO CMP Project Final EIR, pp. 225–226.
[19] Page & Turnbull, *HRE Part I*, p. 35; Page & Turnbull, *HRE Part II*, p. 7.
[20] Del Lane, "Hospital Starts Quake Project," *Oakland Tribune,* May 11, 1980, p. A17.
[21] "Herbert P. McLaughlin," *Wikipedia,* accessed June 12, 2023, https://en.wikipedia.org/wiki/Herbert_P._McLaughlin.
[22] "James Diaz, Principal Emeritus at KMD Architects, Inc.," *LinkedIn,* accessed June 12, 2023, https://www.linkedin.com/in/james-diaz-ab6a7a13a/.
[23] Page & Turnbull, *HRE Part I*, p. 35.
[24] "Our Story," *KMD Architects,* accessed June 12, 2023, https://www.kmdarchitects.com/about.

4.4 Evaluation

4.4.1 California Register Eligibility

The following section evaluates the CUP for eligibility for individual listing on the California Register. The BCH campus was previously determined to be ineligible for listing as a historic district;[25] therefore, the CUP is not evaluated as a contributor to an eligible or potentially eligible historic district.

Criterion 1 (Events)

The CUP was constructed ca. 1980 for the purpose of housing utilities and conveying electricity, heat, and other services throughout the hospital campus. While this use is important to the functionality of the hospital, the CUP's use is not directly related to UCSF BCH Oakland's primary function of providing health care. For this reason, the CUP does not appear to possess significance under Criterion 1.

Criterion 2 (Persons)

While prominent people have been associated with BCH Oakland (as documented in previous historic resources studies), a review of previous documentation and additional archival research did not reveal any historically significant individuals or groups associated specifically with the CUP. As such, the CUP does not appear to possess significance under Criterion 2.

Criterion 3 (Architecture)

The CUP is a strictly utilitarian building. It is designed with minimal architectural or stylistic details, and it does not express aesthetic ideals or design concepts. Therefore, the building does not appear to be significant for embodying the distinctive characteristics of a type, period, or method of construction or for possessing high artistic values.

According to previous documentation, the CUP was designed by KMD Architects, an internationally recognized design firm that qualifies as a master architecture firm. While it is the work of a master, the CUP is a utilitarian building that is not directly related to UCSF BCH Oakland's primary function of providing health care. As a relatively minor, utilitarian building, the CUP does not express a particular phase in the development of KMD Architects' history, an aspect of the firm's body of work, or a particular idea or theme. Therefore, the building does not appear to be significant as the work of a master.

For these reasons, the CUP does not appear to possess significance under Criterion 3.

Criterion 4 (Information Potential)

The "potential to yield information important to the prehistory or history of California" typically relates to archeological resources, rather than built resources. When Criterion 4 does relate to historic architectural resources, it is for cases when the building itself is the principal source of

25 Page & Turnbull, *HRE Part I*, p. 87.

important construction-related information. The CUP does not meet this criterion and therefore does not appear to possess significance under Criterion 4.

Integrity

In addition to being eligible for listing under at least one of the four California Register criteria, a historic architectural resource must also retain sufficient integrity to convey its historical significance. There are seven aspects to consider when evaluating the integrity of a property: location, design, setting, materials, workmanship, feeling, and association. As discussed above, the CUP does not appear to possess significance under any of the California Register criteria; therefore, an assessment of integrity is not required.

Summary of California Register Eligibility

The CUP does not appear to possess significance under any of the California Register criteria, and an assessment of integrity is not required. The CUP is found to be not eligible for listing on the California Register.

4.4.2 City of Oakland Designated Historic Property Eligibility

The following section evaluates the CUP for eligibility for individual as a City of Oakland Designated Historic Property. The BCH campus was previously determined to be ineligible for listing as a City of Oakland Designated Historic District, either as an Area of Primary Importance (API) or an Area of Secondary Importance (ASI).[26] Therefore, the CUP is not evaluated as a contributor to a designated or potentially eligible historic district.

The Oakland Cultural Heritage Survey has not assigned the CUP a preliminary rating. A brief explanation of the evaluation, including each of the 14 evaluative criteria, follows. Ratings for the categories of Architecture, History/Association, and Context below are: Excellent (E), Very Good (VG), Good (G), and Fair/Poor (FP).

Architecture

Exterior/Design

The CUP is a purely utilitarian building with an "undistinguished" quality of form, composition, detailing, and ornament. Its design does not reflect originality, artistic merit, or sensitivity to its surroundings or feature examples of craftsmanship. The CUP therefore receives a rating of fair/poor (FP) for this criterion.

Interior

The interior of the building was not evaluated for this report.

[26] Page & Turnbull, *HRE Part I*, p. 106.

Construction

The CUP is a steel-reinforced, concrete building, and the concrete structure is visible on the exterior. This is a common method of construction. As one of many similar surviving buildings of durable, reinforced concrete construction, the CUP receives a rating of good (G) for this criterion.

Designer/Builder

According to previous documentation, the CUP was designed by KMD Architects, an internationally recognized design firm in existence for 60 years. The firm has designed hundreds of projects for which it has received design awards, and it appears that KMD Architects would qualify as a firm that "has made a significant contribution to the community, state, or nation." The CUP receives a rating of good (G) for this criterion.

Style/Type

The CUP is a purely utilitarian building with little architectural distinction. It does not exemplify a particular type, style or convention and is consequently "of no particular interest." The CUP therefore receives a rating of fair/poor (FP) for this criterion.

History/Association

Person/Organization

While prominent people have been associated with BCH Oakland (as documented in previous historic resources studies), a review of previous documentation and additional archival research did not reveal any historically significant individuals or groups associated specifically with the CUP. As such, the CUP receives a rating of fair/poor (FP) for this criterion.

Event

Previous documentation and additional research have revealed no specific events that took place at the CUP that have made a significant contribution to the community. The CUP receives a rating of fair/poor (FP) for this criterion.

Patterns

Previous documentation and additional research do not indicate that the CUP is associated, either intimately or loosely, with broad patterns of history or the development of Oakland, the vicinity of the BCH Oakland campus, ethnic groups, or a well-defined era. Therefore, the CUP receives a rating of fair/poor (FP) for this criterion.

Age

The CUP was constructed ca. 1980, which is comparatively young in relation to the development of Oakland. Therefore, the CUP receives a rating of fair/poor (FP) for this criterion.

Site

The CUP is sited in its original location and has not been moved. Therefore, the building receives a rating of excellent (E) for this criterion.

Context

Continuity

The CUP is not included in an API or ASI and therefore receives a rating of fair/poor (FP) for this criterion.

Familiarity

The CUP is located behind several larger/taller buildings on the BCH Oakland campus and is not a prominent or familiar feature visible to most hospital visitors and passersby. Therefore, the CUP receives a rating of fair/poor (FP) for this criterion.

Integrity

Ratings in this category are Excellent (E), Good (G), Fair (F), and Poor (P).

Condition

The CUP exhibits no apparent surface wear or structural problems and therefore receives a rating of excellent (E) for this criterion.

Exterior and Alterations

A second story was added to the CUP in 1987, and this changed the massing and overall character of the building. Therefore, the CUP receives a rating of fair (F) for this criterion.

Summary of City of Oakland Designated Historic Property Eligibility

This evaluation assigns the CUP a rating of D3, indicating that it is a building of minor importance and is not located in a district or area of importance.

4.4.3 Status of the Central Utility Plant as a Historical Resource Under CEQA

Based on the analysis presented in this report, the CUP is neither eligible for listing on the California Register nor as a City of Oakland Designated Historic Property. Therefore, it does not qualify as a historical resource for the purposes of CEQA.

CHAPTER 5
Conclusion

Based on a review of the 2013 HRE Part I and the 2014 HRE Part II, a site survey, and additional analysis, ESA finds that the A/B Wing remains eligible as a City of Oakland Designated Historic Property and therefore continues to qualify as a historical resource for the purposes of CEQA. No other buildings or structures on the BCH Oakland campus that will have likely reached 45 years of age by 2024 appear to qualify as historical resources for the purposes of CEQA.

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CHAPTER 6
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Appendix A
City of Oakland Evaluation Sheet for Landmark Eligibility for the Central Utility Plant

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION SHEET FOR LANDMARK ELIGIBILITY

❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: Central Utility Plant (CUP)

A.	**ARCHITECTURE**					
1.	**Exterior/Design:** Utilitarian; undistinguished form, composition, detailing, etc.		**E**	**VG**	**G**	**FP**
2.	**Interior:**		**E**	**VG**	**G**	**FP**
3.	**Construction:** Reinforced concrete structure visible on exterior		**E**	**VG**	**G**	**FP**
4.	**Designer/Builder:** KMD Architects; not a significant example		**E**	**VG**	**G**	**FP**
5.	**Style/Type:** Utilitarian with little architectural distinction		**E**	**VG**	**G**	**FP**
B.	**HISTORY**					
6.	**Person/Organization:** Not associated with significant individuals/groups		**E**	**VG**	**G**	**FP**
7.	**Event:** Not associated with a significant event		**E**	**VG**	**G**	**FP**
8.	**Patterns:** Not associated with significant patterns		**E**	**VG**	**G**	**FP**
9.	**Age:** Built ca. 1980		**E**	**VG**	**G**	**FP**
10.	**Site:** not evaluated		**E**	**VG**	**G**	**FP**
C.	**CONTEXT**					
11.	**Continuity:** Not in API or ASI		**E**	**VG**	**G**	**FP**
12.	**Familiarity:** Not a prominent or familiar feature visible to most visitors		**E**	**VG**	**G**	**FP**
D.	**INTEGRITY**					
13.	**Condition:** No apparent surface wear or structural problems		**E**	**G**	**F**	**P**
14.	**Exterior Alterations:** 2nd story added 1987 changed massing/character		**E**	**G**	**F**	**P**

Evaluated by: Johanna Kahn, ESA **Date:** June 12, 2023

STATUS
Rating:

City Landmark Eligibility: ❑ Eligible ❑ Not eligible

National Register Status: ❑ Listed ❑ In process

❑ Determined eligible ❑ Appears eligible

❑ Appears ineligible

Site of Opportunity ❑

This evaluation sheet was accepted by the landmarks Preservation Advisory Board at its meeting of ______________________________.

(Date)

Attest: ____________________________________

Secretary

City of Oakland – Landmarks Preservation Advisory Board
EVALUATION TALLY SHEET FOR LANDMARK ELIGIBILITY
❑ **Preliminary** ❑ **Final**

Address: 747 52nd Street
Name: Central Utility Plant (CUP)

12	6	3	0	1. Exterior/Design	
6	3	2	0	2. Interior	
6	3	2	0	3. Construction	
4	2	1	0	4. Designer/Builder	
6	3	2	0	5. Style/Type	
				A. ARCHITECTURE TOTAL (max. 26)	**3**
30	15	8	0	6. Person/Organization	
30	15	8	0	7. Event	
18	9	5	0	8. Patterns	
8	4	2	0	9. Age	
4	2	1	0	10. Site	
				B. HISTORY TOTAL (max. 60)	**4**
4	2	1	0	11. Continuity	
14	7	4	0	12. Familiarity	
				C. CONTEXT TOTAL (max. 14)	**0**
PRELIMINARY TOTAL (Sum of A, B and C) (max. 100)					7
-0	-3%	-5%	-10%	13. Condition (From A, B, and C total)	-0
-0	-25%	-50%	-75%	14. Exterior Alterations (From A, B and C total excluding 2)	-3.5
				D. INTEGRITY	**-3.5**
ADJUSTED TOTAL (Preliminary total minus Integrity)					**3.5**

(

STATUS/RATING

Present Rating (Adjusted Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

Contingency Rating (Preliminary Total): ❑ A(35+) ❑ B(23-34) ❑ C(11-22) ❑ D(0-10)

City Landmark Eligibility: ❑ Eligible (Present Rating is A or B) ❑ Not eligible

Appendix ENE

Energy

- Construction Energy Use
- Building Energy Use
- Energy Use for Generator Testing
- Energy Use in Mobile Sources

Construction Energy Use calculations

Benioff Childrens Hospital NHB Project

Energy Calculations - Construction

Source	MT of CO_2
Total CO_2 from Diesel use	5,510.6
Total CO_2 from Gasoline Use	883.5
Onsite CO_2 from diesel use	1,821.1
Offsite CO_2 from diesel use	3,689.5
Percent onsite diesel	33.0%
Percent onroad diesel	67.0%

CO_2 from diesel fuel combustion[a] = 10.2 kg of CO_2/gallon of diesel

CO_2 from gasoline fuel combustion[a] = 8.78 kg of CO_2/gallon of gasoline

[a] Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels)

Conversion 1 MT = 1000 kg

Source	Fuel Use (gallons)	Average per year (over 9 years)
Onsite Diesel	178,366	19,818
Offsite Diesel	361,361	40,151
Total Diesel	539,727	59,970
Offsite Gasoline	100,621	11,180

Building Energy Use

Benioff Childrens Hospital NHB Project
Operational Building Energy Use Calculations

Table 1 Net Energy Calculation

Reference No.	Building/Structure	Area (sq. ft.)	Electricity (KWh)	Natural Gas (Therms)
New Building Construction				
A	New Hospital Building	326,634	14,200,132	0
B	Parking Structure with Rooftop Helistop	157,500	515,606	0
C	Temporary Loading Dock Building	6,100	19,969	0
D	Electric Vehicle charger		865,661	0
New Buildings Total Energy			**15,601,368**	**0**
Existing Buildings To Remain				
North Campus	OPC1	77,000	2,130,385	68,894
	OPC2	115,559	3,296,430	82,835
	Parking	230,000	752,948	
South Campus	Main hospital (including multiple buildings)	269,394	9,333,804	455,408
Existing Buildings Total Energy		**691,953**	**15,513,567**	**607,137**
Demolition or Removal of Existing Buildings/Structures				
7	Hospital Loading Dock	637	0	0
8	B/C Wing	33,510	1,249,776	89,024
9	A/B Wing	45,177	688,916	9,035
10	Bruce Lyon Memorial Research Laboratory	12,570	636,636	469,175
11	Bruce Lyon Addition (Hematology/Oncology Administrative offices)	4,500		
12	Temporary Trailer (MRI)	1,065	16,240	213
13	Temporary Trailer (Facilities Design and Construction)	480	7,320	96
14	Temporary Trailer (Ed Administration & Social Services)	2,108	32,145	422
15	Temporary Trailer (Offices)	1,772	27,022	354
16	Temporary Trailer (Center for Vulnerable Children [CVC])	4,555	69,460	911
19	Helistop Structure	4,323	0	0
Demolition Buildings Total Energy			**2,727,515**	**569,230**
Net Electricity			**31,114,935**	
Net Natural Gas				**607,137**

Scenario	Electricity (KWh)	Electricity (MWh)	Natural Gas (Therms)	Natural Gas (MMBTU)
Existing Energy Use	18,241,082	18,241	1,176,367	117,609
Energy Use with Project	31,114,935	31,115	607,137	60,699
Net Increase with Project	12,873,853	12,874	-569,230	-56,909

Source: Energy Use data from Mazzetti - email from Te Qi dated 12/8/2023 3.31 pm

1 US therm =	99976.1	BTU
	0.0999761	MMBTU
1 ton =	2000	lbs
1 MT =	2204.62	lbs

Energy Calculations for Generator Testing

Benioff Childrens Hospital NHB Project

Energy Calculations - Generator

Source	MT of CO_2
Total CO_2 from Diesel use	465.9

CO_2 from diesel fuel combustion[a] = 10.2 kg of CO_2/gallon of diesel

CO_2 from gasoline fuel combustion[a] = 8.78 kg of CO_2/gallon of gasoline

[a] Emissions factors per The Climate Registry 2019 Default Emission Factors (Table 2.1 - US Default Factors for Calculating CO_2 Emissions from Combustion of Transport Fuels)

Conversion 1 MT = 1000 kg

Source	Fuel Use (gallons)
Onsite Diesel	45,631
Total Diesel	45,631

Energy Calculations for Mobile Sources

Source: EMFAC2021 (v1.0.2) Emissions Inventory
Region Type: County
Region: Alameda
Calendar Year: 2032
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CO2_TOTEX	Fuel Consumption
Alameda	2032	HHDT	Aggregate	Aggregate	Gasoline	4.7403363	151426.215	151426.215	0	31014.20012	0	353.9935326	0	1.64135824	355.634891	37.50125489
Alameda	2032	HHDT	Aggregate	Aggregate	Diesel	15699.1756	596584442.8	596584442.8	0	78341871.74	0	918242.2816	63375.4956	0	981617.777	87687.52718
Alameda	2032	HHDT	Aggregate	Aggregate	Electricity	1227.39131	43289467.47	0	43289467.47	5394316.073	79563777.81	0	0	0	0	0
Alameda	2032	HHDT	Aggregate	Aggregate	Natural Gas	1205.19685	23017152.61	23017152.61	0	3942590.529	0	31880.62559	4924.6816	0	36805.3072	4254.132158
Alameda	2032	LDA	Aggregate	Aggregate	Gasoline	537812.924	6889752695	6889752695	0	861708290.5	0	1825153.512	0	57241.84281	1882395.35	198496.2381
Alameda	2032	LDA	Aggregate	Aggregate	Diesel	924.178856	8724268.985	8724268.985	0	1371288.135	0	2057.335905	0	0	2057.3359	183.7810014
Alameda	2032	LDA	Aggregate	Aggregate	Electricity	65239.8839	942019315.9	0	942019315.9	107398244	363697205	0	0	0	0	0
Alameda	2032	LDA	Aggregate	Aggregate	Plug-in Hybrid	22589.0346	316405707.5	138266338.8	178139368.7	32411763.38	53803398.76	41952.98596	0	2129.80501	44082.791	4648.475228
Alameda	2032	LDT1	Aggregate	Aggregate	Gasoline	42535.7037	499404131.5	499404131.5	0	65261841.15	0	158875.9534	0	5335.211238	164211.165	17315.86213
Alameda	2032	LDT1	Aggregate	Aggregate	Diesel	0.2524099	3860.44257	3860.44257	0	426.9606507	0	1.467052232	0	0	1.46705223	0.131051195
Alameda	2032	LDT1	Aggregate	Aggregate	Electricity	475.062745	7607382.288	0	7607382.288	807212.0623	2937077.434	0	0	0	0	0
Alameda	2032	LDT1	Aggregate	Aggregate	Plug-in Hybrid	355.243986	5798035.113	2382977.421	3415057.692	509720.0571	1031449.208	723.241788	0	36.1936294	759.435417	80.08151588
Alameda	2032	LDT2	Aggregate	Aggregate	Gasoline	277703.03	3684101819	3684101819	0	446557920.7	0	1187611.899	0	36501.76182	1224113.66	129081.2561
Alameda	2032	LDT2	Aggregate	Aggregate	Diesel	1008.71513	13616992.75	13616992.75	0	1636913.518	0	4052.662878	0	0	4052.66288	362.0227695
Alameda	2032	LDT2	Aggregate	Aggregate	Electricity	5909.79805	66667204.62	0	66667204.62	10122024.07	25739043.33	0	0	0	0	0
Alameda	2032	LDT2	Aggregate	Aggregate	Plug-in Hybrid	4898.98951	74457671.57	31365910.97	43091760.6	7029290.606	13014996.04	9518.232256	0	537.4565949	10055.6889	1060.359825
Alameda	2032	LHDT1	Aggregate	Aggregate	Gasoline	18012.6218	221181244.8	221181244.8	0	87754120.88	0	193951.9918	733.142024	2425.518165	197110.652	20785.07197
Alameda	2032	LHDT1	Aggregate	Aggregate	Diesel	9966.23758	126879687.2	126879687.2	0	40993613.1	0	86100.88163	438.650982	0	86539.5326	7730.542168
Alameda	2032	LHDT1	Aggregate	Aggregate	Electricity	3016.87092	56621479.83	0	56621479.83	13824339.71	37095111.09	0	0	0	0	0
Alameda	2032	LHDT2	Aggregate	Aggregate	Gasoline	2360.49311	27509799.85	27509799.85	0	11499880.49	0	27529.74139	112.150248	310.514313	27952.406	2947.546282
Alameda	2032	LHDT2	Aggregate	Aggregate	Diesel	4652.32494	58029186.42	58029186.42	0	19136169.2	0	46186.26402	328.673019	0	46514.937	4155.1609
Alameda	2032	LHDT2	Aggregate	Aggregate	Electricity	758.108548	13645212.49	0	13645212.49	3286592.91	8801154.996	0	0	0	0	0
Alameda	2032	MCY	Aggregate	Aggregate	Gasoline	27234.2451	54942849.61	54942849.61	0	18900566.07	0	11333.91707	0	895.4975068	12229.4146	1289.576487
Alameda	2032	MDV	Aggregate	Aggregate	Gasoline	152634.901	1992614966	1992614966	0	244656731.7	0	773710.3571	0	24226.97753	797937.335	84141.49494
Alameda	2032	MDV	Aggregate	Aggregate	Diesel	1919.80119	24173445.08	24173445.08	0	3061219.005	0	9555.473649	0	0	9555.47365	853.5866759
Alameda	2032	MDV	Aggregate	Aggregate	Electricity	5723.21729	64100892.41	0	64100892.41	9780746.895	24748235	0	0	0	0	0
Alameda	2032	MDV	Aggregate	Aggregate	Plug-in Hybrid	2985.69813	45019894.48	18930447.27	26089447.22	4284014.032	7879790.65	5744.693186	0	398.6672126	6143.3604	647.8096781
Alameda	2032	MH	Aggregate	Aggregate	Gasoline	1557.99033	5543927.871	5543927.871	0	50966.66215	0	11886.82293	0	1.714753991	11888.5377	1253.631445
Alameda	2032	MH	Aggregate	Aggregate	Diesel	828.619367	2816696.01	2816696.01	0	27095.85331	0	3370.150363	0	0	3370.15036	301.0541969
Alameda	2032	MHDT	Aggregate	Aggregate	Gasoline	1341.51856	22578274.56	22578274.56	0	8777040.811	0	41398.01329	244.707818	403.8688974	42046.59	4433.76038
Alameda	2032	MHDT	Aggregate	Aggregate	Diesel	14515.4888	175076284.9	175076284.9	0	55446135.44	0	212171.9101	10403.0588	0	222574.969	19882.5338
Alameda	2032	MHDT	Aggregate	Aggregate	Electricity	2227.57226	35185742.67	0	35185742.67	8971434.827	38189921.03	0	0	0	0	0
Alameda	2032	MHDT	Aggregate	Aggregate	Natural Gas	221.264167	2854225.224	2854225.224	0	695998.2062	0	3036.864343	390.725726	0	3427.59007	396.1771344
Alameda	2032	OBUS	Aggregate	Aggregate	Gasoline	433.787094	5650547.923	5650547.923	0	2838102.381	0	10408.55371	57.4969348	94.54701467	10560.5977	1113.601828
Alameda	2032	OBUS	Aggregate	Aggregate	Diesel	422.532423	8281839.846	8281839.846	0	1482872.448	0	11725.97555	347.446146	0	12073.4217	1078.513977
Alameda	2032	OBUS	Aggregate	Aggregate	Electricity	33.2478617	912750.2519	0	912750.2519	217527.9916	1011187.621	0	0	0	0	0
Alameda	2032	OBUS	Aggregate	Aggregate	Natural Gas	4.19416441	76491.17296	76491.17296	0	10899.79448	0	78.0331288	1.58267613	0	79.6158049	9.202372752
Alameda	2032	SBUS	Aggregate	Aggregate	Gasoline	107.718364	1896185.792	1896185.792	0	140895.6202	0	1582.099144	94.4561677	8.284335406	1684.83965	177.6642356
Alameda	2032	SBUS	Aggregate	Aggregate	Diesel	404.138947	2898428.944	2898428.944	0	1913581.748	0	3627.182537	301.919262	0	3929.1018	350.9851073
Alameda	2032	SBUS	Aggregate	Aggregate	Electricity	43.7829987	525998.8972	0	525998.8972	151498.3213	554116.4786	0	0	0	0	0
Alameda	2032	SBUS	Aggregate	Aggregate	Natural Gas	28.3854219	207205.5698	207205.5698	0	134403.8373	0	282.4847409	40.9168743	0	323.401615	37.38029421
Alameda	2032	UBUS	Aggregate	Aggregate	Gasoline	257.688015	6934142.035	6934142.035	0	337055.9235	0	6877.056013	0	15.21849046	6892.2745	726.7817347
Alameda	2032	UBUS	Aggregate	Aggregate	Diesel	399.325254	12592073.64	12592073.64	0	522317.4321	0	15690.50744	0	0	15690.5074	1401.626814
Alameda	2032	UBUS	Aggregate	Aggregate	Electricity	280.682244	11356137.04	0	11356137.04	367132.375	19796519.11	0	0	0	0	0
Alameda	2032	UBUS	Aggregate	Aggregate	Natural Gas	140.959101	4739691.968	4739691.968	0	184374.5045	0	6387.433707	0	0	6387.43371	738.2899155
							16156446877									

Fuel	Fuel Use		Miles per year	
	1000 gallons per year	kWh per year	VMT	eVMT
Gasoline	461800	0	13412262011	0
Diesel	123987	0	1029677207	0
Natural Gas	5435	0	30894767	0
Electricity	0	602133349	0	1241931584
Plug-in Hybrid	6437	75729635	190945674	250735634

Total County-wide VMT	16,156,446,877	miles per year
Gasoline	468,237	1000 gallons per year
Electricity	677,862,984	kWh per year
Diesel	123,987	1000 gallons per year
Natural Gas (DGE)	5,435	1000 gallons per year

Project VMT	5,734,150	miles per year		
Gasoline	166	1000 gallons per year	166,184	gallons per year
Electricity	240,583	kWh per year	241	Mwh per year
Diesel	44	1000 gallons per year	44,005	gallons per year
Natural Gas [1]	247,856	Btu	0.25	MMBtu

1. EMFAC2021 includes compressed natural gas in terms of diesel gallon equivalents. This is converted into Btu per the U.S. Department of Energy Alternative Fuel Data Center conversion: 1 DGE of CNG = 128,488 Btu. Available at: https://afdc.energy.gov/fuels/equivalency_methodology.html.

Total Operational Energy Use

ANNUAL OPERATIONAL ENERGY USE			
Energy Use Type	**Existing Operational Energy Use - UCSF Benioff Children's Hospital Site**	**2031 Operational Energy Use - UCSF Benioff Children's Hospital with NHB**	**Net New Energy Use under NHB**
Electricity (MWh/year)			
Electricity Use	18,241	31,115	12,874
Mobile Sources (Electric Vehicles)		241	241
Total Electricity Generation/Use	**18,241**	**31,356**	**13,114**
Natural Gas (MMBtu/year)			
Natural Gas Use	117,609	60,699	-56,909
Mobile Sources		0	0.25
Total Natural Gas Use	**117,609**	**60,699**	**-56,909**
Diesel (gallons/year)			
Mobile Sources		44,005	44,005
Generator Testing		45,631	45,631
Total Diesel Use	**0**	**89,636**	**89,636**
Gasoline (gallons/year)			
Mobile Sources		166,184	166,184
Total Gasoline Use	**0**	**166,184**	**166,184**
NOTES: MMBtu = Million British Thermal Unit; MWh = Megawatt-hour.			

Appendix NOI

Noise and Vibration

- Appendix NOI-1, Noise and Vibration Appendix
- Appendix NOI-2, Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for Proposed NHB Project
- Appendix NOI-3, Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for NHB Project Variant

NOI-1 Noise and Vibration Appendix

Appendix NOI
Noise and Vibration Appendix

RCNM Outputs for Construction Noise

Traffic Noise Model

Noise Monitoring

Stationary Source Noise Modeling

RCNM Outputs for Construction Noise

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/07/2023
Case Description: Demo Trailers, Helistop, Bruce Lyons, AB/BC

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
52nd Street	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	440.0	0.0
Gradall	No	40		83.4	440.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	61.8	57.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	64.5	60.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	64.5	62.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
MLK Jr. Way	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	200.0	0.0
Gradall	No	40		83.4	200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	71.4	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.4	69.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/07/2023
Case Description: Build Site Loading Dock, Site Utilities I

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
52nd Street	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	250.0	0.0
Gradall	No	40		83.4	250.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compactor (ground)	69.3	62.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	69.4	65.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	69.4	67.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
MLK Jr. Way	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compactor (ground)	No	20		83.2	200.0	0.0
Gradall	No	40		83.4	200.0	0.0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compactor (ground)	71.2	64.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	71.4	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.4	69.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/07/2023
Case Description: Build Parking Structure/Helistop

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
47th Street	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	400.0	0.0
Scraper	No	40		83.6	400.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Noise Limits (dBA) Evening		Noise Limits (dBA) Night		Noise Limit Exceedance (dBA) Day		Noise Limit Exceedance (dBA) Evening		Noise Limit Exceedance (dBA) Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	62.6	58.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	65.5	61.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	65.5	63.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
MLK Jr. Way	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	200.0	0.0
Scraper	No	40		83.6	200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Noise Limits (dBA) Day Leq	Noise Limits (dBA) Evening Lmax	Noise Limits (dBA) Evening Leq	Noise Limits (dBA) Night Lmax	Noise Limits (dBA) Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Noise Limit Exceedance (dBA) Day Leq	Noise Limit Exceedance (dBA) Evening Lmax	Noise Limit Exceedance (dBA) Evening Leq	Noise Limit Exceedance (dBA) Night Lmax	Noise Limit Exceedance (dBA) Night Leq
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.5	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/07/2023
Case Description: Build NHB

**** Receptor #1 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
52nd Street	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	320.0	0.0
Scraper	No	40		83.6	320.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	64.6	60.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	67.5	63.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.5	65.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
MLK Jr. Way	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	200.0	0.0
Scraper	No	40		83.6	200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper	71.5	67.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.5	69.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/07/2023
Case Description: Site Utilities II, NPC5 Upgrades, Hardscape, Landscape, Main Entry Site Improvements

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
52nd Street	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	170.0	0.0
Gradall	No	40		83.4	170.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	70.1	66.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	72.8	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	72.8	70.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
MLK Jr. Way	Residential	55.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	200.0	0.0
Gradall	No	40		83.4	200.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Noise Limits (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Noise Limit Exceedance (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	68.7	64.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gradall	71.4	67.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	71.4	69.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Traffic Noise Model

Existing Condition

ROAD SEGMENT	from:	to:	TOTAL # VEHICLES	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Dover Street	53rd Street	52nd Street	102	95.00	96.9	3	3.06	2	2.04	25	40	25	40	25	40	50.0	46.6	52.5	55.1	40	50.8	1.5	5.0
MLK Way	53rd Street	52nd Street	3213	95.00	3052.4	3	96.39	2	64.26	30	48	30	48	30	48	67.2	62.8	68.2	71.4	40	67.1	65.5	215.0
MLK Way	52nd Street	SR 24 Ramps/47th Street	3304	95.00	3138.8	3	99.12	2	66.08	30	48	30	48	30	48	67.3	62.9	68.3	71.5	40	67.3	67.4	221.1
52nd Street	West Street	MLK Way	660	95.00	627	3	19.8	2	13.2	25	40	25	40	25	40	58.1	54.7	60.6	63.2	40	58.9	9.9	32.5
52nd Street	MLK Way	Dover Street	553	95.00	525.35	3	16.59	2	11.06	20	32	20	32	20	32	54.5	52.4	58.9	60.9	40	56.7	5.9	19.3
52nd Street	Dover Street	Shattuck Avenue	661	95.00	627.95	3	19.83	2	13.22	25	40	25	40	25	40	58.1	54.7	60.6	63.2	40	58.9	9.9	32.5

Assumptions: PM peak hour traffic data from Fehr & Peers

Existing Plus Project Condition

ROAD SEGMENT	from:	to:	TOTAL # VEHICLES	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Dover Street	53rd Street	52nd Street	118	95.00	112.1	3	3.54	2	2.36	25	40	25	40	25	40	50.6	47.2	53.1	55.7	40	51.5	1.8	5.8
MLK Way	53rd Street	52nd Street	3249	95.00	3086.6	3	97.47	2	64.98	30	48	30	48	30	48	67.3	62.9	68.3	71.5	40	67.2	66.3	217.5
MLK Way	52nd Street	SR 24 Ramps/47th Street	3317	95.00	3151.2	3	99.51	2	66.34	30	48	30	48	30	48	67.4	63.0	68.3	71.5	40	67.3	67.7	222.0
52nd Street	West Street	MLK Way	701	95.00	665.95	3	21.03	2	14.02	25	40	25	40	25	40	58.3	55.0	60.9	63.5	40	59.2	10.5	34.5
52nd Street	MLK Way	Dover Street	565	95.00	536.75	3	16.95	2	11.3	20	32	20	32	20	32	54.6	52.5	59.0	61.0	40	56.8	6.0	19.8
52nd Street	Dover Street	Shattuck Avenue	691	95.00	656.45	3	20.73	2	13.82	25	40	25	40	25	40	58.3	54.9	60.8	63.4	40	59.1	10.4	34.0
52nd Street (with deliveries)	MLK Way	Dover Street	574	93.51	536.75	5	25.95	2	11.3	20	32	20	32	20	32	54.6	54.4	59.0	61.4				

Assumptions: PM peak hour traffic data from Fehr & Peers

2040 No Project

ROAD SEGMENT	from:	to:	TOTAL # VEHICLES	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Dover Street	53rd Street	52nd Street	170	95.00	161.5	3	5.1	2	3.4	25	40	25	40	25	40	52.2	48.8	54.7	57.3	40	53.0	2.6	8.4
MLK Way	53rd Street	52nd Street	3920	95.00	3724	3	117.6	2	78.4	30	48	30	48	30	48	68.1	63.7	69.1	72.3	40	68.0	80.0	262.4
MLK Way	52nd Street	SR 24 Ramps/47th Street	4030	95.00	3828.5	3	120.9	2	80.6	30	48	30	48	30	48	68.2	63.8	69.2	72.4	40	68.1	82.2	269.7
52nd Street	West Street	MLK Way	830	95.00	788.5	3	24.9	2	16.6	25	40	25	40	25	40	59.1	55.7	61.6	64.2	40	59.9	12.5	40.9
52nd Street	MLK Way	Dover Street	720	95.00	684	3	21.6	2	14.4	20	32	20	32	20	32	55.7	53.6	60.1	62.1	40	57.8	7.7	25.2
52nd Street	Dover Street	Shattuck Avenue	830	95.00	788.5	3	24.9	2	16.6	25	40	25	40	25	40	59.1	55.7	61.6	64.2	40	59.9	12.5	40.9

Assumptions: PM peak hour traffic data from Fehr & Peers

2040 Plus Project

ROAD SEGMENT	from:	to:	TOTAL # VEHICLES	VEHICLE TYPE % Auto %	Auto	MT %	MT	HT %	HT	VEHICLE SPEED Auto	k/h	MT	k/h	HT	k/h	NOISE LEVEL (dBA) Auto	MT	HT	CALCULATED NOISE LEVEL (15 meters from roadway center)	Receptor Dist. from Roadway Center (m.)	Adjusted Noise Level (dBA)	Distance from Roadway to 65 dBA (m.)	Distance from Roadway to 65 dBA (ft)
Dover Street	53rd Street	52nd Street	186	95.00	176.7	3	5.58	2	3.72	25	40	25	40	25	40	52.6	49.2	55.1	57.7	40	53.4	2.8	9.2
MLK Way	53rd Street	52nd Street	3956	95.00	3758.2	3	118.68	2	79.12	30	48	30	48	30	48	68.1	63.7	69.1	72.3	40	68.0	80.7	264.8
MLK Way	52nd Street	SR 24 Ramps/47th Street	4043	95.00	3840.9	3	121.29	2	80.86	30	48	30	48	30	48	68.2	63.8	69.2	72.4	40	68.1	82.5	270.6
52nd Street	West Street	MLK Way	871	95.00	827.45	3	26.13	2	17.42	25	40	25	40	25	40	59.3	55.9	61.8	64.4	40	60.1	13.1	42.9
52nd Street	MLK Way	Dover Street	732	95.00	695.4	3	21.96	2	14.64	20	32	20	32	20	32	55.7	53.7	60.2	62.2	40	57.9	7.8	25.6
52nd Street	Dover Street	Shattuck Avenue	860	95.00	817	3	25.8	2	17.2	25	40	25	40	25	40	59.2	55.9	61.8	64.3	40	60.1	12.9	42.3

Assumptions: PM peak hour traffic data from Fehr & Peers

Noise Monitoring

Summary

File Name on Meter	LxT_Data.149.s
File Name on PC	LxT_0004437-20230523 114243-LxT_Data.149.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	ST-1: West Street/47th Street
Job Description	UCSF NHB
Note	

Measurement

Description	
Start	2023-05-23 11:42:43
Stop	2023-05-23 12:02:44
Duration	00:20:00.7
Run Time	00:17:27.6
Pause	00:02:33.1
Pre-Calibration	2023-05-23 08:50:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	143.0 dB			
	A	**C**	**Z**	
Under Range Peak	99.2	96.2	**101.2**	dB
Under Range Limit	**37.6**	37.2	43.9	dB
Noise Floor	28.5	28.0	34.8	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	58.6		
LAE	88.8		
EA	84.768 µPa²h		
EA8	2.330 mPa²h		
EA40	11.652 mPa²h		
LZpeak (max)	2023-05-23 12:00:58	103.5	dB
LASmax	2023-05-23 12:00:58	75.9	dB
LASmin	2023-05-23 11:56:57	47.5	dB
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	0	0.0 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCeq	69.1 dB
LAeq	58.6 dB
LCeq - LAeq	10.5 dB
LAIeq	61.3 dB
LAeq	58.6 dB
LAIeq - LAeq	2.6 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	58.6		69.1			
Ls(max)	75.9	2023/05/23 12:00:58				
Ls(min)	47.5	2023/05/23 11:56:57				
LPeak(max)					103.5	2023/05/23 12:00:58

Overload Count	0
Overload Duration	0.0 s

Summary

File Name on Meter	LxT_Data.150.s
File Name on PC	LxT_0004437-20230523 120940-LxT_Data.150.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	ST-2: West Street/52nd Street
Job Description	UCSF NHB
Note	

Measurement

Description	
Start	2023-05-23 12:09:40
Stop	2023-05-23 12:25:41
Duration	00:16:01.2
Run Time	00:15:24.1
Pause	00:00:37.1
Pre-Calibration	2023-05-23 08:50:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	143.0 dB			
	A	**C**	**Z**	
Under Range Peak	99.2	96.2	**101.2**	dB
Under Range Limit	**37.6**	37.2	43.9	dB
Noise Floor	28.5	28.0	34.8	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	65.4		
LAE	95.0		
EA	353.670 µPa²h		
EA8	11.022 mPa²h		
EA40	55.111 mPa²h		
LZpeak (max)	2023-05-23 12:09:40	112.5 dB	
LASmax	2023-05-23 12:09:41	85.2 dB	
LASmin	2023-05-23 12:22:40	53.2 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	1	2.4 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCeq	79.3 dB
LAeq	65.4 dB
LCeq - LAeq	13.9 dB
LAIeq	67.5 dB
LAeq	65.4 dB
LAIeq - LAeq	2.1 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	65.4		79.3			
Ls(max)	85.2	2023/05/23 12:09:41				
Ls(min)	53.2	2023/05/23 12:22:40				
LPeak(max)					112.5	2023/05/23 12:09:40

Overload Count	0
Overload Duration	0.0 s

Summary

File Name on Meter	LxT_Data.152.s
File Name on PC	LxT_0004437-20230523 125721-LxT_Data.152.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	ST-3: 46th Street/MLK Way
Job Description	UCSF NHB
Note	

Measurement

Description	
Start	2023-05-23 12:57:21
Stop	2023-05-23 13:12:22
Duration	00:15:01.6
Run Time	00:15:01.6
Pause	00:00:00.0
Pre-Calibration	2023-05-23 08:50:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	143.0 dB			
	A	**C**	**Z**	
Under Range Peak	99.2	96.2	**101.2**	dB
Under Range Limit	**37.6**	37.2	43.9	dB
Noise Floor	28.5	28.0	34.8	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	68.7	
LAE	98.3	
EA	743.475 µPa²h	
EA8	23.749 mPa²h	
EA40	118.745 mPa²h	
LZpeak (max)	2023-05-23 13:09:44	110.9 dB
LASmax	2023-05-23 13:09:45	92.4 dB
LASmin	2023-05-23 13:09:29	57.5 dB
SEA	-99.9 dB	

	Exceedance Counts	**Duration**
LAS > 85.0 dB	1	3.8 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCeq	75.4 dB
LAeq	68.7 dB
LCeq - LAeq	6.7 dB
LAIeq	71.2 dB
LAeq	68.7 dB
LAIeq - LAeq	2.5 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	68.7		75.4			
Ls(max)	92.4	2023/05/23 13:09:45				
Ls(min)	57.5	2023/05/23 13:09:29				
LPeak(max)					110.9	2023/05/23 13:09:44

Overload Count	0
Overload Duration	0.0 s

Summary

File Name on Meter	LxT_Data.151.s
File Name on PC	LxT_0004437-20230523 123325-LxT_Data.151.ldbin
Serial Number	0004437
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	ST-4: Dover Street/53rd Street
Job Description	UCSF NHB
Note	

Measurement

Description	
Start	2023-05-23 12:33:25
Stop	2023-05-23 12:48:34
Duration	00:15:08.9
Run Time	00:15:08.9
Pause	00:00:00.0
Pre-Calibration	2023-05-23 08:50:51
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	143.0 dB			
	A	**C**	**Z**	
Under Range Peak	99.2	96.2	**101.2**	dB
Under Range Limit	**37.6**	37.2	43.9	dB
Noise Floor	28.5	28.0	34.8	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	65.6		
LAE	95.2		
EA	366.526 µPa²h		
EA8	11.614 mPa²h		
EA40	58.070 mPa²h		
LZpeak (max)	2023-05-23 12:44:53	103.1	dB
LASmax	2023-05-23 12:44:52	85.7	dB
LASmin	2023-05-23 12:39:56	52.8	dB
SEA	-99.9 dB		

	Exceedance Counts	**Duration**
LAS > 85.0 dB	1	3.1 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCeq	74.5 dB
LAeq	65.6 dB
LCeq - LAeq	8.9 dB
LAIeq	67.0 dB
LAeq	65.6 dB
LAIeq - LAeq	1.4 dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	65.6		74.5			
Ls(max)	85.7	2023/05/23 12:44:52				
Ls(min)	52.8	2023/05/23 12:39:56				
LPeak(max)					103.1	2023/05/23 12:44:53

Overload Count	0
Overload Duration	0.0 s

Summary

File Name on Meter	LxT_Data.116.s			
File Name on PC	LxT_0004337-20230523 110000-LxT_Data.116.ldbin			
Serial Number	0004337			
Model	SoundTrack LxT®			
Firmware Version	2.404			
User	Nick Reynoso			
Location	LT-1: 52nd Street UCSF BCH backlot entrance			
Job Description	UCSF BCH			
Note				

Measurement

Description				
Start	2023-05-23 11:00:00			
Stop	2023-05-25 11:00:00			
Duration	48:00:00.0			
Run Time	48:00:00.0			
Pause	00:00:00.0			
Pre-Calibration	2023-05-23 08:46:04			
Post-Calibration	None			
Calibration Deviation	---			

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Linear			
Overload	143.3 dB			
	A	**C**	**Z**	
Under Range Peak	99.6	96.6	**101.6**	dB
Under Range Limit	**38.0**	37.5	44.3	dB
Noise Floor	28.8	28.4	35.2	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LAeq	65.1		
LAE	117.5		
EA	61.810 mPa²h		
EA8	10.302 mPa²h		
EA40	51.508 mPa²h		
LZpeak (max)	2023-05-24 08:16:29	119.6 dB	
LASmax	2023-05-24 08:16:30	93.3 dB	
LASmin	2023-05-25 03:04:10	44.1 dB	
SEA	-99.9 dB		

	Exceedance Counts	Duration
LAS > 85.0 dB	15	80.1 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCeq	73.4 dB
LAeq	65.1 dB
LCeq - LAeq	8.3 dB
LAIeq	67.3 dB
LAeq	65.1 dB
LAIeq - LAeq	2.2 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	65.1		73.4			
Ls(max)	93.3	2023/05/24 8:16:30				
Ls(min)	44.1	2023/05/25 3:04:10				
LPeak(max)					119.6	2023/05/24 8:16:29

Overload Count	0
Overload Duration	0.0 s

Calculated Ldn from Long-Term Noise Monitoring Data

LT-1 52nd Street UCSF BCH backlot entrance
5/24/2023
Wednesday

		TIME	dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight	0 / 24		59.2	828175	8281748	2618919
am	1:00	100	58.1	641886	6418861	2029822
	2:00	200	58.7	734945	7349453	2324101
	3:00	300	60.8	1201954	12019544	3800914
	4:00	400	64.8	3027722	30277220	9574498
	5:00	500	66.7	4694313	46943125	14844720
	6:00	600	67.8	6091847	60918472	19264112
	7:00	700	68.0	6266442	62664416	19816228
	8:00	800	68.3	6747610	67476104	21337818
	9:00	900	66.4	4330809	43308087	13695220
	10:00	1000	66.9	4917439	49174392	15550308
	11:00	1100	66.2	4208119	42081189	13307240
	12:00	1200	65.5	3540503	35405033	11196054
pm	13:00	1300	65.1	3238628	32386275	10241439
	14:00	1400	64.2	2613774	26137738	8265478
	15:00	1500	64.1	2579396	25793959	8156766
	16:00	1600	64.6	2869010	28690096	9072605
	17:00	1700	64.2	2603203	26032028	8232050
	18:00	1800	63.5	2258645	22586451	7142463
	19:00	1900	63.8	2376818	23768184	7516160
	20:00	2000	64.1	2564903	25649033	8110936
	21:00	2100	63.5	2213508	22135075	6999725
	22:00	2200	62.9	1941851	19418514	6140673
pm	23:00	2300	62.0	1597103	15971033	5050484

Leq Nighttime 10:00 p.m.-7:00 a.m. (not penalized)
64 dBA

Leq Daytime 7:00 am-10:00 p.m.
66 dBA

Leq 24-Hour
65 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
70 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
71 dBA

CNEL - Ldn 0.250168

Summary

File Name on Meter	LxT_Data.164.s
File Name on PC	LxT_0004435-20230523 120000-LxT_Data.164.ldbin
Serial Number	0004435
Model	SoundTrack LxT®
Firmware Version	2.404
User	Nick Reynoso
Location	LT-2: UCSF BCH annex parking lot
Job Description	UCSF BCH
Note	

Measurement

Description	
Start	2023-05-23 12:00:00
Stop	2023-05-25 12:00:00
Duration	48:00:00.0
Run Time	48:00:00.0
Pause	00:00:00.0
Pre-Calibration	2023-05-23 08:36:21
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting			
Peak Weight	Z Weighting			
Detector	Slow			
Preamplifier	PRMLxT2B			
Microphone Correction	Off			
Integration Method	Exponential			
Overload	144.3 dB			
	A	**C**	**Z**	
Under Range Peak	100.6	97.6	**102.6**	dB
Under Range Limit	**38.9**	38.4	45.2	dB
Noise Floor	29.7	29.3	36.1	dB
	First	**Second**	**Third**	
Instrument Identification				

Results

LASeq	60.7	
LASE	113.1	
EAS	22.598 mPa²h	
EAS8	3.766 mPa²h	
EAS40	18.831 mPa²h	
LZpeak (max)	2023-05-23 19:03:40	110.0 dB
LASmax	2023-05-23 19:03:44	89.3 dB
LASmin	2023-05-25 01:39:26	44.3 dB
SEA	-99.9 dB	

	Exceedance Counts	Duration
LAS > 85.0 dB	2	5.8 s
LAS > 115.0 dB	0	0.0 s
LZpeak > 135.0 dB	0	0.0 s
LZpeak > 137.0 dB	0	0.0 s
LZpeak > 140.0 dB	0	0.0 s

LCSeq	69.7 dB
LASeq	60.7 dB
LCSeq - LASeq	9.0 dB
LAIeq	62.3 dB
LAeq	60.7 dB
LAIeq - LAeq	1.6 dB

	A		C		Z	
	dB	Time Stamp	dB	Time Stamp	dB	Time Stamp
Leq	60.7					
Ls(max)	89.3	2023/05/23 19:03:44				
Ls(min)	44.3	2023/05/25 1:39:26				
LPeak(max)					110.0	2023/05/23 19:03:40

Overload Count	0
Overload Duration	0.0 s

Calculated Ldn from Long-Term Noise Monitoring Data

LT-2 UCSF BCH annex parking lot
5/24/2023
Wednesday

	TIME		dBA	Numbers...	10 dBA More Numbers...	5 dBA
Midnight	0 / 24		56.2	415845	4158445	1315016
am	1:00	100	52.5	176553	1765534	558311
	2:00	200	51.1	129751	1297511	410309
	3:00	300	52.1	163150	1631496	515924
	4:00	400	56.0	398500	3984997	1260167
	5:00	500	61.2	1329790	13297898	4205165
	6:00	600	62.9	1956622	19566223	6187383
	7:00	700	63.1	2036756	20367560	6440788
	8:00	800	61.5	1416394	14163937	4479030
	9:00	900	60.8	1208473	12084731	3821528
	10:00	1000	62.0	1596000	15960004	5046996
	11:00	1100	61.0	1245638	12456384	3939055
	12:00	1200	60.5	1127686	11276855	3566055
pm	13:00	1300	61.0	1266651	12666511	4005502
	14:00	1400	61.9	1546251	15462510	4889675
	15:00	1500	60.4	1108016	11080159	3503854
	16:00	1600	60.6	1148339	11483387	3631366
	17:00	1700	61.6	1455724	14557239	4603403
	18:00	1800	60.5	1121734	11217343	3547235
	19:00	1900	61.0	1258514	12585139	3979770
	20:00	2000	59.1	811850	8118504	2567296
	21:00	2100	58.6	723712	7237124	2288579
	22:00	2200	57.7	594187	5941868	1878984
pm	23:00	2300	57.7	593157	5931575	1875729

Leq Nighttime 10:00 p.m.-7:00 a.m. (not penalized)
58 dBA

Leq Daytime 7:00 am-10:00 p.m.
62 dBA

Leq 24-Hour
60 dBA

Ldn: 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
65 dBA

CNEL: 5 dBA penalty for noise between 7:00p.m. and 10:00 p.m., and 10 dBA penalty for noise between 10:00 p.m. and 7:00 a.m.
65 dBA

CNEL - Ldn 0.329502

Stationary Source Noise Modeling

Calculation of A-Weighted Sound Pressure Levels **Podium Exhaust Fans**

From Mecanical Plans sound power level = 80 dB

Conversion of Sound power level to Sould Pressure level

$$Lp = Lw - \left|10log\left(^{Q}/_{4\pi r^2}\right)\right|$$

Q = 2
r = 1 meter

-7.98236

		Sound pressure level (unweighted)	Distance feet)	# of units	Resultant SPL(dB)	dBA
Sound Power Level =	80	88	3.28 feet	8	97	88

Distance to Receiver Property Line (ft) = Residential 249

Combined A-weighted SPL @ receptor = Residential 50

With 5 dBA rooftop reduction = Residential 45

Calculation of A-Weighted Sound Pressure Levels **Podium AHUs**

From mechanical Plans sound power level = 83 dB

Conversion of Sound power level to Sould Pressure level

$$Lp = Lw - \left|10log\left(^{Q}/_{4\pi r^2}\right)\right|$$

Q = 2
r = 1 meter

-7.98236

		Sound pressure level (unweighted)	Distance feet)	# of units	Resultant SPL(dB)	dBA
Sound Power Level =	83	91	3.28 feet	6	99	90

Distance to Receiver (ft) = Residential 249

Combined A-weighted SPL @ receptor = Residential 52

With 5 dBA rooftop reduction = Residential 47

Calculation of A-Weighted Sound Pressure Levels **Chiller in Basement**

From mechanical Plans sound power level = 68 dB

Conversion of Sound power level to Sould Pressure level

$$Lp = Lw - \left|10log\left({}^{Q}/_{4\pi r^2}\right)\right|$$

Q = 2
r = 1 meter

-7.98236

		Sound pressure level (unweighted)	Distance feet)	# of units	Resultant SPL(dB)	dBA
Sound Power Level =	68	76	3.28 feet	2	79	70

Distance to Receiver (ft) = Residential 367

Combined A-weighted SPL @ receptor = Residential 29

With 20 dBA interior to exterior structur reduction Residential 9

Calculation of A-Weighted Sound Pressure Levels **ASHP**

From mechanical Plans sound power level = 93 dB

Conversion of Sound power level to Sould Pressure level

$$Lp = Lw - \left|10log\left({}^{Q}/_{4\pi r^2}\right)\right|$$

Q = 2
r = 1 meter

-7.98236

		Sound pressure level (unweighted)	Distance feet)	# of units	Resultant SPL(dB)	dBA
Sound Power Level =	93	101	3.28 feet	1	101	92

Distance to Receiver (ft) =
249 Residential

Combined A-weighted SPL @ receptor =
54 at residential receptor property line

With 5 dBA rooftop reduction =
Residential 49

Calculation of A-Weighted Sound Pressure Levels **CUP Generators**

From mechanical Plans for Kaiser Hospital (2,500 KW) sou 75 dB

Conversion of Sound power level to Sould Pressure level

$$Lp = Lw - \left|10log\left({}^{Q}/_{4\pi r^2}\right)\right|$$

Q = 2
r = 1 meter

-7.98236

		Sound pressure level (unweighted)	Distance feet)	# of units	Resultant SPL(dB)	dBA
Sound Power Level =	75	83	3.28 feet	2	86	77

Distance to Receiver (ft) = 445 Residential

Combined A-weighted SPL @ receptor = 34 dBA at residential receptor property line

Engineering Noise Control

ENC 11.5 page565

kW = 14.914 (based on 20HP converted to kW)

			Lw
Propeller-type cooling towers:			
	A	Fan power up to 75 kW: Lw = 100 + 8LOG(kW)	109.3888
	B	Fan power greater than 75 kW: Lw = 96 + 10LOG(kW)	107.7359
		(subtract 8 dB if the fan is operated at half its rated speed.)	
Centrifugal type cooling towers:			
	C	Fan power up to 60 kW: Lw = 85 + 11LOG(kW)	97.90954
	D	Fan power greater than 60 kW: Lw = 93 + 7LOG(kW)	101.2152

Cooling Tower Definition

Manufacturer	Marley	Fan Motor Speed	1800 rpm
Product	NC OSHPD	Required Fan Motor Output per cell *	29.32 BHp
Model	NC8409SAE4	Required Fan Motor Output total *	117.28 BHp
Cells	4	Fan Motor Capacity per cell	30.00 Hp
CTI Certified	Yes	Fan Motor Output per cell	30.00 BHp
Fan	12 ft, 5 Blades, Low Sound	Fan Motor Output total	120.00 BHp
Fan Speed	273 rpm, 10292 fpm	Air Flow per cell	172000 cfm
Fans per cell	1	Air Flow total	688000 cfm
Fill Type	MX75	Static Lift	12 ft
		Distribution Head Loss	0 ft
		ASHRAE 90.1 Performance	79.8 gpm/Hp
Model Group	Standard Low Sound (A)		

* Required Fan Motor Output assumes VFD operation

	31.5	63	125	250	500	1000	2000	4000	8000	Awt	
Propeller-type cooling towers:	8	5	5	8	11	15	18	21	29		Table 11.7
Centrifugal type cooling towers:	6	6	8	10	11	13	12	18	25		Table 11.7

A	101.4	104.4	104.4	101.4	98.4	94.4	91.4	88.4	80.4	100.6
B	99.7	102.7	102.7	99.7	96.7	92.7	89.7	86.7	78.7	98.9
C	91.9	91.9	89.9	87.9	86.9	84.9	85.9	79.9	72.9	91.2
D	95.2	95.2	93.2	91.2	90.2	88.2	89.2	83.2	76.2	94.5

Table 11.8 Approximate corrections (dB) to average sound pressure level for directinal effects of cooling towers (directivity effects at distances greater than 6 meter from the tower.)

	31.5	63	125	250	500	1000	2000	4000	8000
Centrifugal fan blow through type									
Front	3	3	2	3	4	3	3	4	4
Side	0	0	0	-2	-3	-4	-5	-5	-5
Rear	0	0	-1	-2	-3	-4	-5	-6	-6
Top	-3	-3	-2	0	1	2	3	4	5
Axial flow, blow through type									
Front	2	2	4	6	6	5	5	5	5
Side	1	1	1	-2	-5	-5	-5	-5	-4
Rear	-3	-3	-4	-7	-7	-7	-8	-11	-3
Top	-5	-5	-5	-5	-2	0	0	2	4
Induced draft, propeller type									
Front	0	0	0	1	2	2	2	3	3
Side	-2	-2	-2	-3	-4	-4	-5	-6	-6
Top	3	3	3	3	2	2	2	1	1
Underflow forced draft propeller type									
Any side	-1	-1	-1	-2	-2	-3	-3	-4	-4
Top	2	2	2	3	3	4	4	5	5

										A-weighted Sound Power Level
per CELL	101.7	104.7	104.7	102.7	99.7	96.7	93.7	91.7	83.7	102.5

Sound Power Level to Sound Pressure Level

$$Lp = Lw - \left|10log\left(^{Q}/_{4\pi r^2}\right)\right|$$

frequency	31.5	63	125	250	500	1000	2000	4000	8000	Overall	Hz
swl	101.7	104.7	104.7	102.7	99.7	96.7	93.7	91.7	83.7	110	dB
spl	93.8	96.8	96.8	94.8	91.8	88.8	85.8	83.8	75.8	102	dB
a weighting	-39.4	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0	-1.1		dB
spl	54.4	70.6	80.7	86.2	88.6	88.8	87.0	84.8	74.7	95	dBA

@ 3.28 feet Q= 2
8.0

Q=1	Near center of room
Q=2	At center of floor
Q=4	Center of edge between floor and wall
Q=8	Corner between two walls and floor

# of Cooling Tower	Total dBA		distance (ft)	dBA at receiver
4	101	@ 3.28 ft	249	63

With 5 dBA rooftop reduction = Residential 58

Noise Source	Exhaust	AHU	ASHP	Generator	Cooling towers
Noise Level	45	47	49	34	58
Remove LOG	34727.63	51968.05	86613.42	2718.278	622169.6

Adding Noise Sources	59.0

NOI-2 Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for Proposed NHB Project

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Technical Memorandum

Date	December 20, 2023
To	Paul Mitchell, ESA
From	Chris Nottoli, ESA Dominic Scarano, ESA Justin Cook, ESA
Subject	**UCSF BCH Oakland NHB Project Environmental Impact Report** **Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for Proposed NHB Project**

1. Background

ESA is preparing an Environmental Impact Report (EIR) for a proposed new hospital building, site support building, parking structure, and associated improvements at the UCSF Benioff Children's Hospital (BCH) Oakland campus, collectively known as the New Hospital Building (NHB) Project, or the Project. The Project includes the relocation of the existing helistop at Project site to the rooftop of the proposed new hospital building. The existing helistop is located on a 36-foot-tall above ground level (agl) helistop structure located in the southern portion of the campus site. The proposed Project helistop would be relocated approximately 160 feet north of the existing location to the new hospital building roof. In accordance with the scope of work, noise contours and an air emission inventory were produced for two scenarios: 2022 Existing Conditions and 2031 Proposed Project. A speech interference and sleep disturbance analysis was also conducted as part of the scope. The previous Helistop Noise Assessment conducted in support of the Children's Hospital and Research Center Oakland (CHRCO) Campus Master Plan (CMP) Project Final EIR, completed by Brown-Buntin Associates, Inc. in July 2014 (hereinafter, "the BBA Report"), was used as the basis for some of the noise modeling inputs.[1] This technical memorandum discusses the noise modeling approach, input assumptions, and results of the analysis for the Project. Please see Appendix A in this technical memorandum for additional information on aircraft noise and aircraft noise terminology.

The following sections address the Federal Aviation Administration (FAA)'s Aviation Environmental Design Tool (AEDT)[2], Version 3e, inputs developed under the following categories:

- Helistop layout physical descriptions
- Aircraft operations
- Aircraft noise, air quality, and performance characteristics
- Flight track geometry and use
- Meteorological conditions
- Terrain
- Discussion of Results

1 "Helistop Replacement Project Children's Hospital and Research Center Oakland," Brown-Buntin Associates, Inc., August 2014.
2 https://aedt.faa.gov/

2. Helistop Layout Physical Descriptions

The UCSF BCH Oakland campus site is located two miles northeast of downtown Oakland in Alameda County, California, between Martin Luther King Jr. Way and State Route 24 (SR 24). The campus site is surrounded by residential and commercial land uses. The existing UCSF BCH Oakland helistop is atop a 36-foot- agl structure located in the southern portion of the Project site.

This technical memorandum includes the existing helistop layout, which is used in the 2022 Existing Conditions Scenario, and the Proposed Project helistop layout which is used in the 2031 Proposed Project Scenario. **Table 1** provides the helistop layout data for the Existing and Proposed Project scenarios.

Table 1. Helistop Data
Source: AirportIQ 5010 Airport Master Records and Reports; Smith Group, 2023

Helistop	Latitude	Longitude	Elevation (Feet Mean Sea Level [MSL])
Existing	37.836174	-122.266796	131
Proposed Project	37.836531	-122.267078	227

3. Aircraft Operations

Title 14 of the Code of Federal Regulations (CFR) Part 150 (14 CFR Part 150) and its table of noise/land use compatibility guidelines require the calculation of Day Night Average Sound Level (DNL), or Community Noise Equivalent Level (CNEL) for aircraft noise analyses in California. That is, the total noise exposure (in CNEL) averaged over a year – typically a calendar year. The AEDT produces these values of exposure utilizing an "average annual day" of aircraft operations.

Helistop operations for the modeling scenarios were derived based on flight log data provided by UCSF BCH Oakland. It is projected that operations will increase at a rate of 1% per year through the completion date of the proposed helistop. The annual operations modeled for the 2022 Existing Conditions and the 2031 Scenarios were 786 and 858, respectively.[3,]

The AgustaWestland A-109 was modeled as the primary helicopter operating at UCSF BCH Oakland campus site, as is consistent with the BBA Report. The A-109 is a twin-engine helicopter with a four-bladed main rotor and a conventional (unshrouded) tail rotor. The operational characteristics and noise levels of the A-109 are representative of the older and relatively noisy helicopters that currently utilize or would be expected to utilize the existing or replacement helistop. As such the modeling of this helicopter reflects a conservative approach to noise exposure. The day-evening-night split for arrivals and departures were derived from calendar year 2022 flight logs and applied to the annual operations. The arrival split was modeled as 55.4% (day), 15.7% (evening), and 28.9% (night). The departure split was modeled as 51.2% (day), 18.4% (evening), and 30.4% (night). **Table 2** presents the 2022 Existing Conditions annual operations. **Table 3** presents the 2031 Proposed Project forecast annual operations.

3 Each helicopter landing/takeoff counts as one aircraft operation.

Table 2. Annual Aircraft Operations – 2022 Existing Conditions
Source: BCH, 2023; ESA, 2022

Operation	Aircraft	Day	Evening	Night	Total
Arrivals	A-109	217.61	61.71	113.68	393
Departures	A-109	201.43	72.25	119.32	393
	Subtotal	**419.04**	**133.96**	**233.0**	**786**

Table 3. Annual Aircraft Operations – 2031 Proposed Project
Source: BCH, 2023; ESA, 2022

Operation	Aircraft	Day	Evening	Night	Total
Arrivals	A-109	237.55	67.36	124.09	429
Departures	A-109	219.88	78.87	130.25	429
	Subtotal	**457.42**	**146.23**	**254.34**	**858**

4. Aircraft Noise, Air Emissions, and Performance Characteristics

Specific noise and performance data must be entered into the AEDT for the helicopter operating at the campus site. Noise data is included in the form of Sound Exposure Level (SEL) at a range of distances (from 200 feet to 25,000 feet) from a particular aircraft with engines operating at a specific thrust level. Performance data includes thrust, speed and altitude profiles for takeoff and landing operations. The AEDT database contains standard noise and performance data for helicopter aircraft most of which are civilian aircraft. The AEDT automatically accesses the noise and performance data for takeoff and landing operations by those aircraft.

Besides identifying the aircraft types in the database, the AEDT has STANDARD, ICAO, and Noisemap aircraft flight profiles for takeoffs, landings, and flight patterns or touch-and-go operations. ESA used standard profiles for the AgustaWestland A-109, consistent with the previous conservative approach to the helicopter noise assessment conducted in support of the CHRCO CMP Project Final EIR.

Air emissions sources at the helistop within this analysis are from the helicopters operating at the hospital. Emissions inventories from the operation of helicopter main engines during each phase of flight were prepared using the AEDT.

5. Flight Track Geometry and Use

Model flight track geometry was taken from the BBA Report. ESA updated the proposed arrival and departure tracks by shifting and snapping the existing flight tracks to the proposed helistop location, and confirmed with Heliplanners, an aviation consulting firm for the Project, that the proposed flight tracks are representative. **Figure 1** and **Figure 2** present the Existing Conditions and Proposed Project model flight tracks, respectively. It is expected that 90% of helicopter operations will arrive from the east and depart to the west. Usage was distributed evenly when multiple tracks arrive from or depart to the same direction.[4] **Table 4** presents the modeled flight track usage percentages.

4 The previous BAA Report applied 100% track utilization to each of the eight model flight tracks resulting in a 600% increase in annual helicopter operations.

Figure 1. Existing Conditions Model Flight Tracks

Source: AEDT, 2023; ESA, 2023

Figure 2. Proposed Project Model Flight Tracks

Source: AEDT, 2023; ESA, 2023

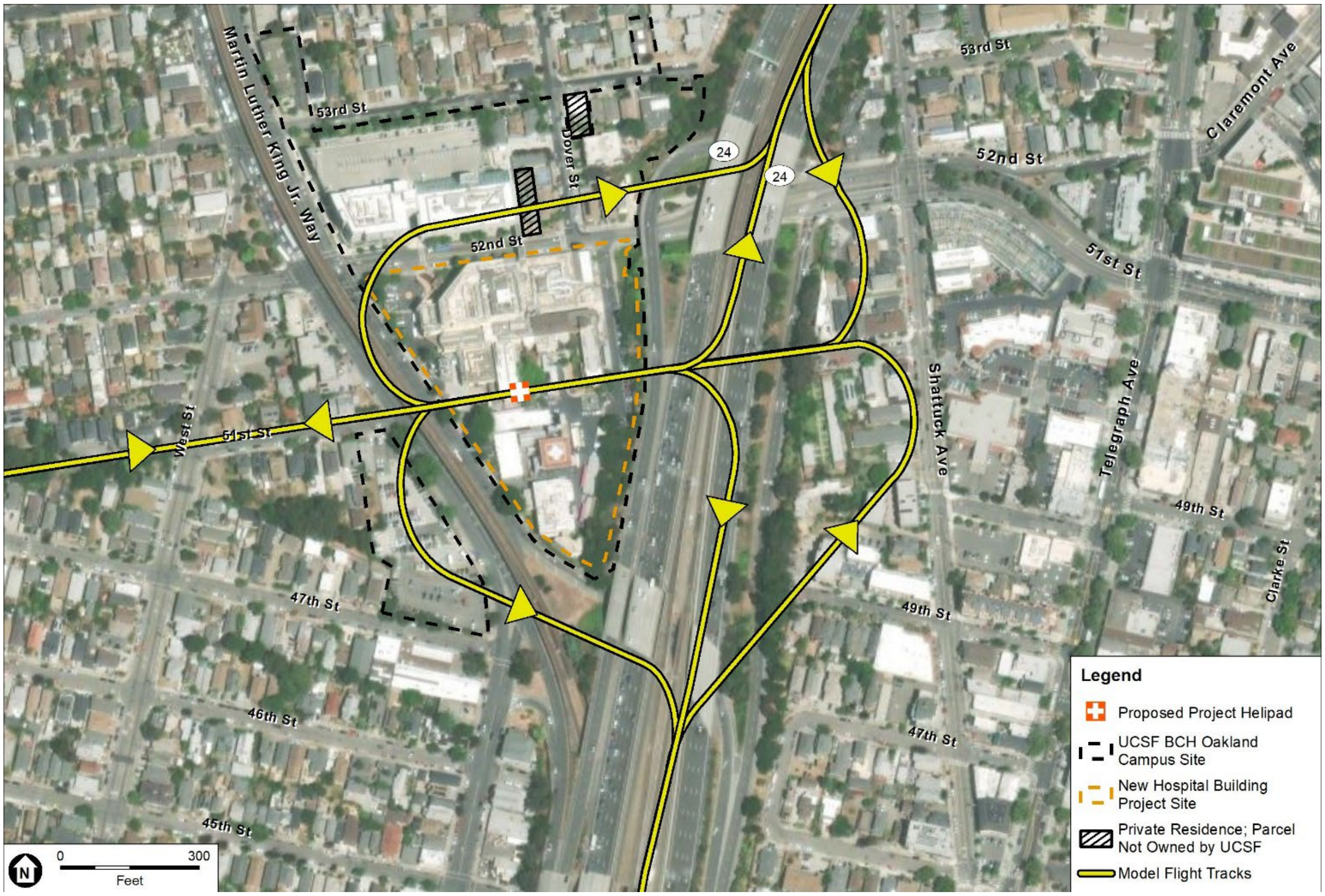


Table 4. Arrival and Departure Track Usage
Source: ESA, 2023

Track Name	Direction of Travel	Track Use
		Arrivals
ASW	Westbound	45%
ANW	Westbound	45%
AE	Eastbound	10%
	Arrivals Subtotal	**100%**
		Departures
DNE	Eastbound	5%
DSE	Eastbound	5%
DNW	Westbound	30%
DSW	Westbound	30%
DW	Westbound	30%
	Departures Subtotal	**100%**

6. Meteorological Conditions

The AEDT has several settings that affect aircraft performance profiles and sound propagation based on meteorological data. Meteorological settings include 10-year average temperature, barometric pressure, and relative humidity at the airport. Weather data from Oakland International Airport (OAK) was used as weather information for UCSF BCH Oakland is not available in the AEDT. The AEDT holds the following values for annual average weather conditions at OAK:

- Temperature: 58.38º F
- Pressure: 1013.47 millibars
- Sea-level Pressure: 1016.75 millibars
- Relative Humidity 72.61%
- Dew Point: 49.62° F
- Wind Speed: 7.2 Knots

7. Terrain

Terrain data describes the elevation of the ground surrounding the helistop. If the AEDT user selects the use of terrain data, the AEDT uses terrain data to adjust the ground level under the flight paths. The terrain data does not affect the aircraft's performance or noise levels but does affect the vertical distance between the aircraft and a "receiver" on the ground. This in turn affects noise propagation assumptions about how noise propagates over ground. ESA obtained 1/3 arcsecond terrain data from the United States Geological Survey (USGS) National Map Viewer and used it with the terrain feature of the AEDT in generating the noise contours.[5]

[5] USGS terrain obtain on June 22, 2023.

8. Discussion of Results

Changes in Noise Contours and Noise Exposure

The 2022 Existing Conditions and 2031 Proposed Project CNEL contours are presented in **Figure 3** and **Figure 4**, respectively. A comparison of the 2022 Existing Conditions and 2031 Proposed Project is presented in **Figure 5**. Each figure shows the 60 through 75 CNEL contours in 5 dB increments over an aerial basemap and includes the noise impact assessment site locations. Noise impact assessment site locations were selected as part of the ambient noise measurements conducted between May 23rd through May 25th, 2023. Site locations were selected to be consistent with the helicopter noise assessment conducted in support of the CHRCO CMP Project Final EIR.

Figure 3. 2022 Existing Conditions CNEL Contours

Source: AEDT, 2023; ESA, 2023

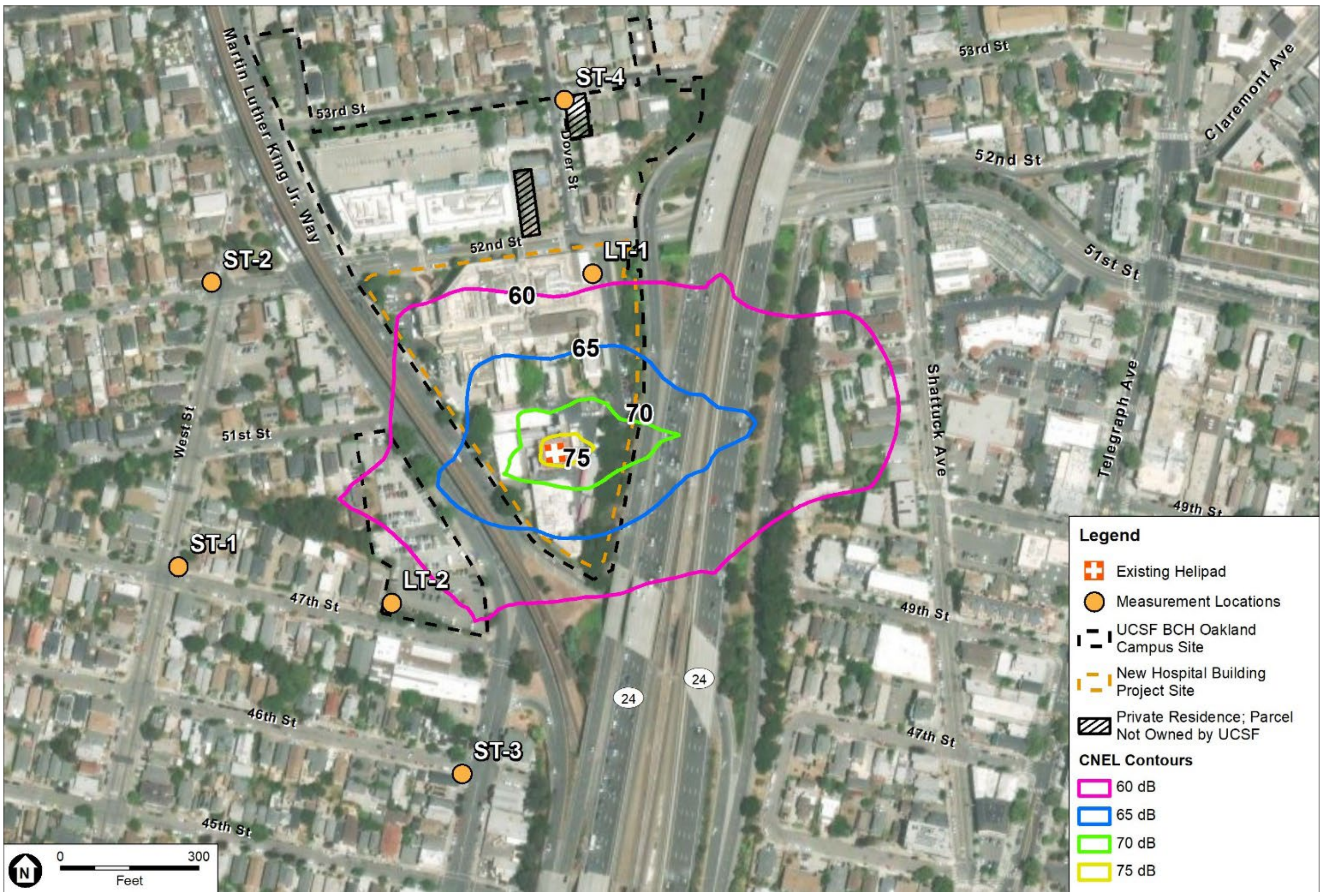


Figure 4. 2031 Proposed Project CNEL Contours

Source: AEDT, 2023; ESA, 2023

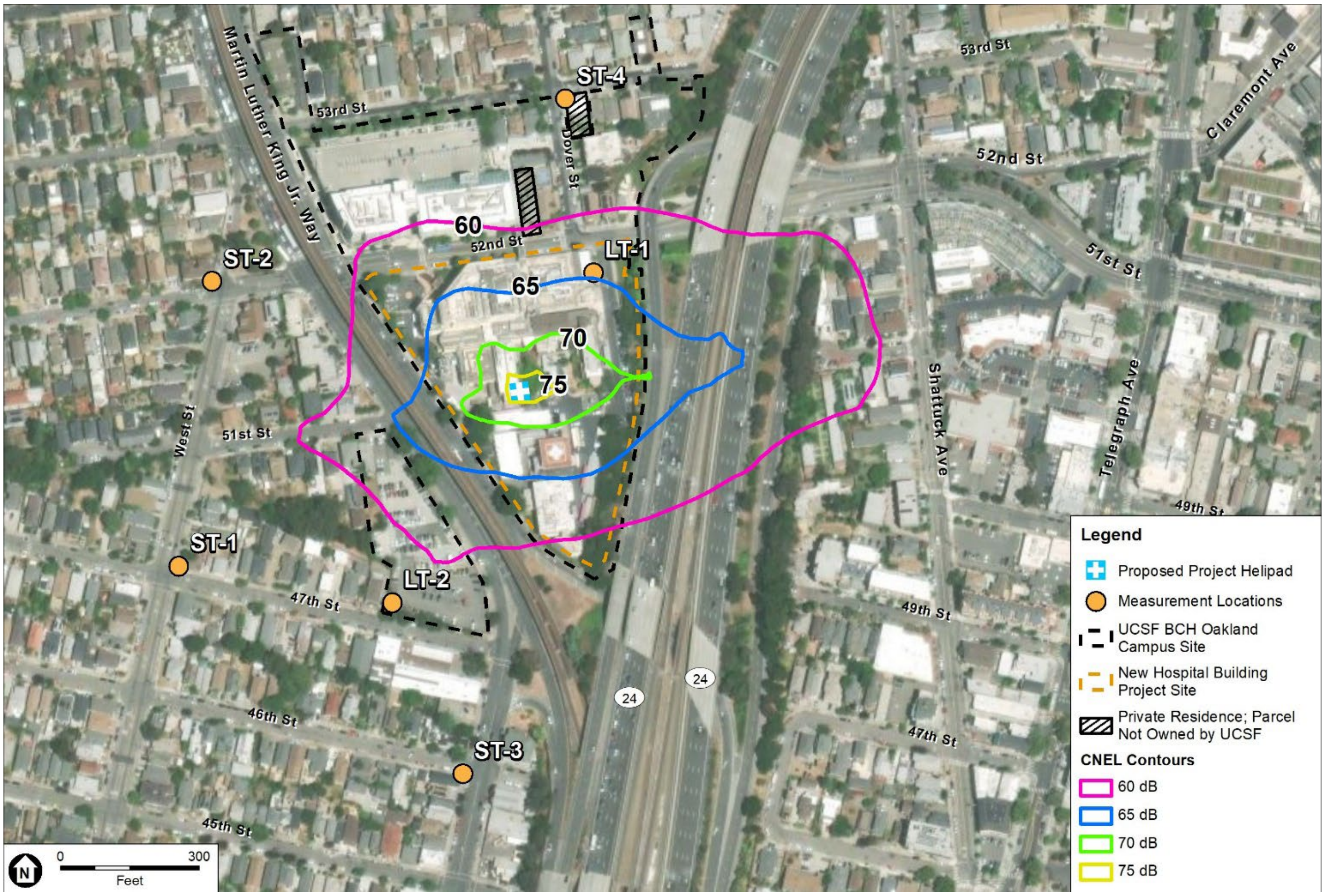
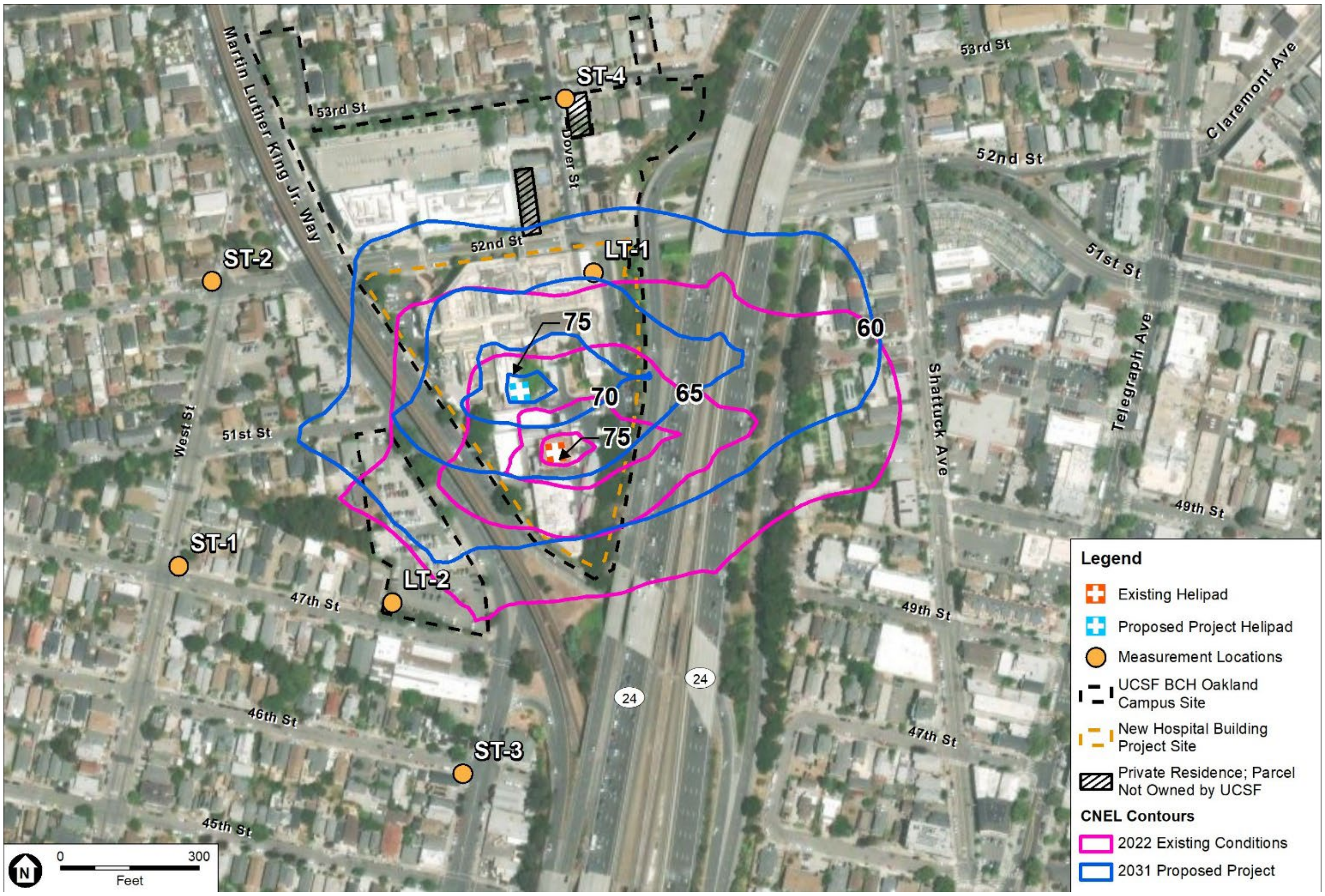


Figure 5. 2022 Existing Conditions and 2031 Proposed Project CNEL Contours Comparison

Source: AEDT, 2023; ESA, 2023



Noise levels, in terms of CNEL, were calculated for the 2022 Existing Conditions and 2031 Proposed Project based on the location of the existing helistop and for the Proposed Project scenario based on the location of the relocated helistop. **Table 5** provides the modeled results at each of the noise impact assessment site locations. Sites LT-1, ST-2, and ST-4 are located to the north of both helistops, while LT-2, ST-1 and ST-3 are located to the south of both helistops.

At LT-1, at the northeast corner of the hospital, the CNEL under the Proposed Project scenario is higher at 64.6 dB compared to the existing level of 59.0 dB, resulting in a project-related change of 5.5 dB. Residential sites ST-2 and ST-4 also show an increase in CNEL of 1.8 dB (from 50.8 dB to 52.6 dB) and 2.4 dB (from 52.2 dB to 54.6 dB), respectively.

South of the helistops, residential site LT-2 experiences a decrease in CNEL under the Proposed Project scenario, decreasing from 56.9 dB under existing conditions to 56.0 dB, resulting in a project-related change of -0.9 dB. Residential sites ST-1 and ST-3 also show a decrease in CNEL of -1.2 dB (from 53.8 dB to 52.7 dB) and -0.9 dB (from 52.3 dB to 51.3 dB), respectively, under the Proposed Project scenario.

Overall project-related changes show increase in noise exposure ranging from 1.8 dB to 5.6 dB at sensitive land uses to the north of the helistops and decrease in noise exposure ranging from -0.9 dB to -1.1 dB at sensitive land uses to the south of the helistops.

Table 5. Modeled CNEL Values at Noise Impact Assessment Sites

Source: ESA, 2023

Site	Land Use	Existing Helistop CNEL (dB)	Proposed Project Helistop CNEL (dB)	
		2022	2031	Project Related Change
LT-1	Hospital	59.0	64.6	5.6
LT-2	Residential	56.9	56.0	-0.9
ST-1	Residential	53.8	52.7	-1.1
ST-2	Residential	50.8	52.6	1.8
ST-3	Residential	52.3	51.3	-1.0
ST-4	Residential	52.2	54.6	2.4

Land uses within the CNEL contours were analyzed using Google Earth aerial photography with results shown in **Table 6**. It should be noted that the hospital and all associated facilities were considered as one noise-sensitive use which is located within the CNEL 65+ under all scenarios analyzed. There are no churches, schools, or public parks located within the CNEL 60-65 under all modeling scenarios. Project-related changes show a net increase of four residential homes and two apartment buildings within the CNEL 60-65. Project-related changes show a net decrease of one mixed-use building within the CNEL 60-65.

Table 6. Land Use

Source: ESA, 2023

Land Use	Existing Helistop			Proposed Project Helistop			Project Related Changes 2031								
	2022			2031			Noise Exposure Increase			Noise Exposure Decrease			Net Noise Exposure Change		
	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+
Homes	3	0	0	7	0	0	4	0	0	0	0	0	4	0	0
Apartment Buildings	14	0	0	16	0	0	2	0	0	0	0	0	2	0	0
Mixed Use	1	0	0	0	0	0	0	0	0	-1	0	0	-1	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Commercial	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Parks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Single-Event Noise Impacts on Sleep and Speech

A single event analysis was performed for each noise impact assessment site location, utilizing three metrics: Sound Exposure Level (SEL) to evaluate the potential for sleep disturbance, and Maximum A-Weighted Sound Level (Lmax), and Time Above (TA) to assess the potential for speech interference. Single event metrics such as SEL and Lmax represent worst-case noise exposure for a single noise event, and as such, are not affected by changes to the total number of annual operations. The single event metrics were modeled using the closest track to each noise impact assessment site location.

To determine potential sleep disturbance, an outdoor-to-indoor noise level reduction (NLR) must be applied. A typical NLR for a residence in the project area with windows open is 10-15 dB and 15-20 dB when windows and doors are closed.[6] For this analysis, an NLR of 15 dB was applied to modeled results. For example, a single event with an exterior SEL of 90 dB would result in an interior SEL of 75 dB.

Sleep disturbance is often expressed as "maximum percent awakened," and represents the potential for sleep disturbance within the population residing beneath a specific flight path, indicating the maximum percentage expected to be awakened. For example, if a city block houses 200 individuals and the maximum percent awakened is 10%, this implies that up to 20 people may be awakened due to a passing flight during nighttime hours (10 p.m. to 7 a.m.). As it relates to project-related change, a 1% increase would equate to an additional two (2) people potentially being awakened during nighttime hours.

Table 7 summarizes the calculated SEL values at each noise impact assessment site location for potential sleep disturbance. The 15 dB NLR was subtracted from the exterior SEL and the Federal Interagency Committee on Aviation Noise (FICAN) dose response was calculated based on the interior SEL.[7]

As previously mentioned, sites LT-1, ST-2, and ST-4 are located to the north of the helistops, while LT-2, ST-1 and ST-3 are located to the south of the helistops.

At LT-1, at the northeast corner of the hospital, the maximum percent awakened under the Proposed Project scenario is higher at 12.3% compared to the existing level of 11.1%, resulting in a project-related change of 1.2%. Residential sites ST-2 and ST-4 also show an increase in maximum percent awakened of 0.7% (from 8.2% to 9.0%) and 0.9% (from 7.1% to 8.0%), respectively.

South of the helistops, residential site LT-2 experiences a decrease in maximum percent awakened under the Proposed Project scenario, increasing from 9.7% to 8.9%, resulting in a project-related change of -0.8%. Residential sites ST-1 and ST-3 also show a decrease in maximum percent awakened of -0.9% (from 10.6% to 9.7%) and -2.1% (from 9.3% to 7.2%), respectively.

Overall, project-related changes show an increase in maximum percent awakened north of the existing helistop, from 0.7 dB to 1.2 dB, and a decrease in maximum percent awakened south of the existing helistop, from -0.8 dB to -2.1 dB.

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6 US Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety*, March 1974.

7 Federal Interagency Committee on Aviation Noise, *Effects of Aviation Noise on Awakenings from Sleep*, June 1997.

Table 7. Potential Sleep Disturbance
Source: ESA, 2023, FICAN

Site	Land Use	Existing Helistop			Proposed Project Helistop			Project Related Change (%)
		Exterior SEL (dB)[1]	Interior SEL (dB)[2]	Maximum % Awakened[3]	Exterior SEL (dB)[1]	Interior SEL (dB)[2]	Maximum % Awakened[3]	
LT-1	Hospital	99.4	84.4	11.1	102.6	87.6	12.3	1.2
LT-2	Residential	95.3	80.3	9.7	93.0	78.0	8.9	-0.8
ST-1	Residential	98.1	83.1	10.6	95.3	80.3	9.7	-0.9
ST-2	Residential	91.0	76.0	8.2	93.2	78.2	9.0	0.7
ST-3	Residential	94.2	79.2	9.3	87.6	72.6	7.2	-2.1
ST-4	Residential	87.4	72.4	7.1	90.4	75.4	8.0	0.9

Notes:
1 AEDT calculated SEL value for the A-109 on flight track closest to receiver.
2 Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.
3 Maximum percent awakened calculated using FICAN dose-response curve.

Potential speech interference is assumed to occur at interior noise levels at or above 65 dB. The AEDT was used to calculate exterior noise levels that exceeded 80 dB, (e.g., TA 80 dB in minutes per day) to account for the 15 dB NLR inside the residence. **Table 8** summarizes the calculated Lmax and TA 65 values at each noise impact assessment site location for potential speech interference. The data shows that the overall project-related changes do not change the existing potential speech interference duration at any of the modeled residential site locations and a small decrease at LT-1

Table 8. Potential Speech Interference
Source: ESA, 2023

Site	Land Use	Existing Helistop		Proposed Project Helistop		
		Lmax (dB)[1]	2022 TA65 (min/day)	Lmax (dB)[1]	2031 TA65 (min/day)	Project Related Change (min/day)
LT-1	Hospital	98.7	0.4	97.4	0.3	-0.1
LT-2	Residential	101.0	0.1	101.9	0.1	0.0
ST-1	Residential	100.6	0.0	93.8	0.0	0.0
ST-2	Residential	85.1	0.0	89.3	0.0	0.0
ST-3	Residential	90.4	0.1	85.5	0.1	0.0
ST-4	Residential	88.1	0.1	93.1	0.1	0.0

Notes:
1 AEDT calculated SEL value for the A-109 on flight track closest to receiver.
2 Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.

Criteria Pollutant Emissions from Helistop Operations

Emissions inventories for the following CARB criteria air pollutants were prepared for the 2022 Existing Conditions and 2031 Proposed Project scenarios using the modeling methodology described in previous sections: carbon monoxide, volatile organic compounds (a precursor to ozone), oxides of nitrogen, oxides of sulfur, particulate matter, and fine particulate matter. The emissions inventories for the 2022 Existing Conditions and 2031 Project scenarios are shown in **Table 9**. Based on the emissions modeling results, helistop operations under the Proposed Project scenario would not result in air emissions that would exceed applicable threshold of significance for any criteria air pollutants.

Table 9. Helicopter Air Emissions Inventories (Short Tons Per Year)
Source: ESA, 2023

Scenario	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2022 Existing Conditions	0.15	0.01	0.09	0.02	0.00	0.00
2031 Proposed Project	0.16	0.01	0.10	0.02	0.00	0.00

APPENDIX A
Aircraft Noise

1.1 Environmental Noise Fundamentals

The measurement and human perception of sound involve two basic physical characteristics: intensity and frequency. Intensity is a measure of the acoustic energy of sound vibrations, expressed in terms of sound pressure. The higher the sound pressure, the more energy carried by the sound and the louder the perception of that sound. The second important physical characteristic is sound frequency, which is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB). On this scale, zero dB corresponds roughly to the threshold of human hearing and 120 to 140 dB corresponds to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound. Noise is commonly defined as unwanted sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts on humans, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency weighting and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown on **Figure A-1**.

1.2 General Characteristics of Aircraft Noise

Outdoor sound levels decrease as a function of distance from the source and as a result of wave divergence, atmospheric absorption, and ground attenuation. If sound is radiated from a source in a homogenous and undisturbed manner, the sound travels as spherical waves. As the sound wave travels away from the source, the sound energy is distributed over a greater area, dispersing the sound power of the wave. Spherical spreading of the sound wave reduces the noise level, for most sound sources, at a rate of 6 dB per doubling of the distance.

Atmospheric absorption also influences the levels that are received by the observer. The greater the distance sound travels, the greater the influence of atmospheric effects. Atmospheric absorption becomes important at distances of greater than 1,000 feet. The degree of absorption is a function of the sound frequency, as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest at high humidity and higher temperatures. Turbulence and gradients of wind, temperature, and humidity also play a significant role in determining the degree of attenuation. Certain conditions, such as inversions, can also result in higher sound levels that would result from spherical spreading as a result of channeling or focusing the sound waves.

Absorption effects in the atmosphere vary with frequency. The higher frequencies are more readily absorbed than the lower frequencies. Over large distances, the lower frequencies become the dominant sound as the higher frequencies are attenuated.

The effects of ground attenuation on aircraft noise propagation are a function of the height of the source and/or receiver and the characteristics of the terrain. The closer the source of the noise is to the ground, the greater the ground absorption. Terrain consisting of soft surfaces, such as vegetation, provide for more ground absorption than hard surfaces, such as a large parking lot.

Aircraft noise originates from both the engines and the airframe of an aircraft, but the engines are, by far, the more significant source of noise. Meteorological conditions affect the transmission of aircraft noise through the air. Wind speed and direction, and the temperature immediately above ground level, cause diffraction and displacement of sound waves. Humidity and temperature materially affect the transmission of air-to-ground sound through absorption associated with the instability and viscosity of the air.

1.3 Aircraft Noise Descriptors

The description, analysis, and reporting of aircraft noise levels is made difficult by the complexity of human response to sound and the myriad of sound-rating scales and metrics that have been developed for describing acoustic effects. Various rating scales have been devised to approximate the human response to the “loudness” or “noisiness” of a sound. Noise metrics have been developed to account for additional parameters, such as duration and cumulative effect of multiple events.

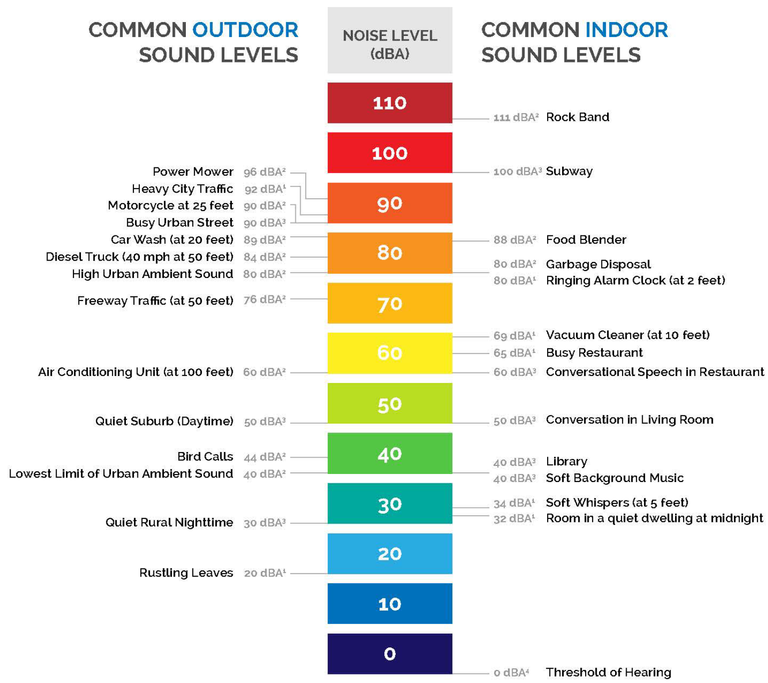
Noise metrics can be categorized as single-event metrics and cumulative metrics. Single-event metrics describe the noise from individual events, such as an aircraft flyover. Cumulative metrics describe the noise in terms of the total noise exposure over a period of time.

1.3.1 A-Weighted Sound Pressure Level (dBA)

The decibel is a unit used to describe sound pressure level. When expressed in dBA, the sound has been filtered to reduce the effect of very low and very high frequency sounds, much as the human ear filters sound frequencies. Without this filtering, calculated and measured sound levels would include events that the human ear cannot hear (e.g., dog whistles and low frequency sounds, such as the groaning sounds emanating from large buildings with changes in temperature and wind). With A-weighting, calculations and sound monitoring equipment approximate the sensitivity of the human ear to sounds of different frequencies.

Some common sound levels on the dBA scale are listed in **Figure A-1**. As shown, the relative perceived loudness of a sound doubles for each increase of 10 dBA, although a 10-dBA change in the sound level corresponds to a factor of 10 changes in relative sound energy. Generally, single-event sound levels with differences of 2 dBA or less are not perceived to be noticeably different by most listeners.

FIGURE A-1
COMMON SOUNDS ON THE A WEIGHTED DECIBEL SCALE



1 Aviation Noise Effects, FAA, AEE, March, 1985 (FAA-EE-85-2), Table 1.1
2 Federal Agency Review of Selected Airport Noise Analysis Issues (Federal Interagency Committee on Noise), August 1992, Table B.1
3 Children's health and the environment, A Global Perspective, World Health Organization, 2005, Table 15.1
4 OSHA Technical Manual, TED 01-00-015, Section III (Health Hazards), Chapter 5 (Noise, Updated 8/15/2013)

Source: Environmental Science Associates, 2023.

1.3.2 Maximum A-Weighted Sound Level (Lmax)

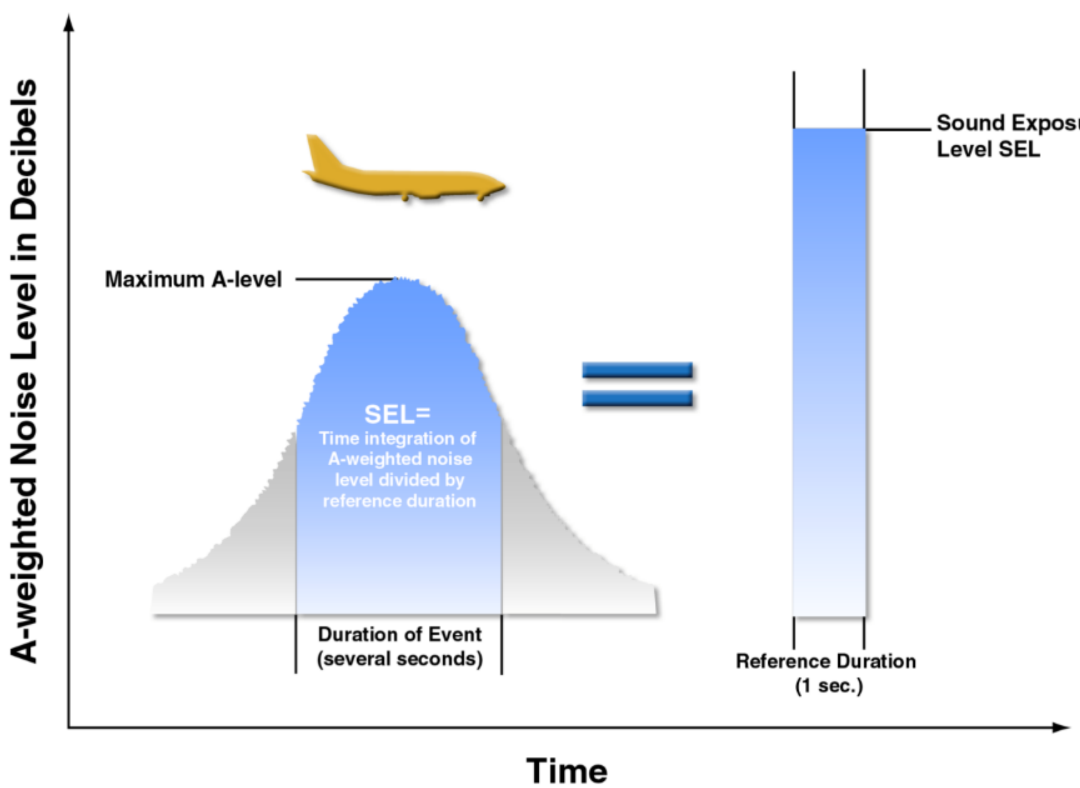
Lmax is the maximum, or peak, sound level during a noise event. The metric only accounts for the highest A-weighted sound level measured during a noise event, not for the duration of the event. For example, as an aircraft approaches, the sound of the aircraft begins to rise above ambient levels. The closer the aircraft gets, the louder the sound until the aircraft is at its closest point. As the aircraft passes, the sound level decreases until the sound returns to ambient levels. Some sound level meters measure and record the maximum sound level (Lmax). The Lmax for an aircraft flyover is illustrated on **Table A-1**.

TABLE A-1
COMMON SOUNDS ON THE A-WEIGHTED DECIBEL SCALE

Sound	Sound level (dBA)	Relative loudness (approximate)	Relative sound energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

SOURCE: U.S. Department of Housing and Urban Development, Aircraft Noise Impact—Planning Guidelines for Local Agencies, 1972.

FIGURE A-2
SOUND EXPOSURE LEVEL AND MAXIMUM SOUND LEVEL



SOURCE: Brown-Buntin Associates, Inc., November 2004.

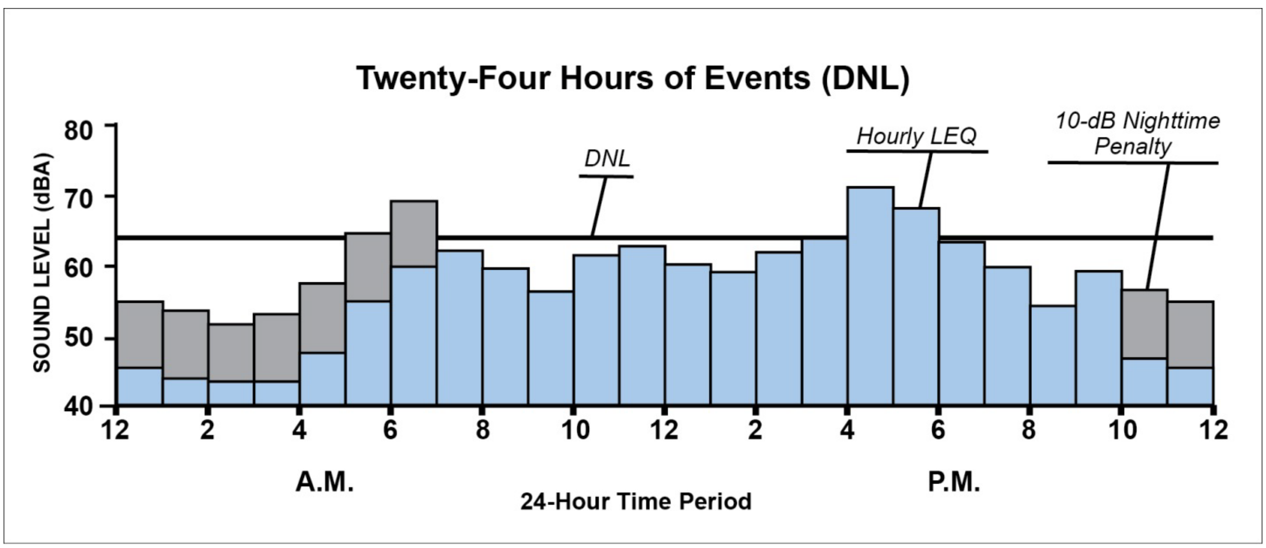
1.3.3 Sound Exposure Level (SEL)

Sound Exposure Level (SEL), is a time integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The standardization of discrete noise events into a one-second duration allows calculation of the cumulative noise exposure of a series of noise events that occur over a period of time. The SEL of an aircraft noise event is typically 7 to 12 dBA greater than the Lmax of the event. SELs for aircraft noise events depend on the location of the aircraft relative to the noise receptor, the type of operation (landing, takeoff, or overflight), and the type of aircraft. The SEL for an aircraft flyover is also illustrated on **Figure A-2**.

1.3.4 Equivalent Noise Level (L_{eq})

Equivalent Noise Level (Leq) is the sound level corresponding to a steady state, A-weighted sound level containing the same total energy as a time-varying signal over a given sample period. Leq is the “energy” average noise level during the time period of the sample. It is based on the observation that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. It is the energy sum of all the sound that occurs during that time period. This is graphically illustrated in the middle graph on **Figure A-3**. Leq can be measured for any time period, but is typically measured for 15 minutes, 1 hour, or 24 hours.

FIGURE A-3
DAY-NIGHT AVERAGE SOUND LEVEL



1.4 Aviation Environmental Design Tool

The noise analyses were conducted using the most current version of the FAA's Aviation Environmental Design Tool (AEDT). The AEDT is the FAA's standard model for evaluating aircraft noise, fuel burn/consumption, and emissions at airports. For this analysis, AEDT, Version 3e, was used to model aircraft noise exposure for aircraft flybys at the Pacific Airshow Huntington Beach.

The AEDT produces noise exposure contours that are used for land use compatibility maps. The program includes a built-in Geographic Information System (GIS) platform and tools for comparing contours and utilities that facilitate easy export to other GIS software suites. The model can also calculate predicted noise at specific sites such as hospitals, schools, or other noise-sensitive locations. For these discrete locations, the AEDT has the capability to report noise exposure levels at the specific location.

The AEDT accounts for each aircraft flight along flight tracks to or from the airport, or aircraft overflying the airport. Flight track definitions are coupled with information in the model's databases relating to noise levels at varying distances and flight performance data for each distinct type of aircraft selected. In general, the model computes noise levels at regularly-spaced grid receptors at ground level around the airport. The distance to each aircraft in flight is computed (slant distance), and the associated noise exposure of each aircraft flying along each flight track within the vicinity of the grid receptor is determined. The logarithmic acoustical energy levels for each individual aircraft single-event are then summed for each grid receptor. The AEDT can create contours of specific noise levels based on the acoustical energy summed at each of the grid receptors for the selected metric. The cumulative values of noise exposure at each grid receptor are used to interpolate contours of equal noise exposure. The AEDT can also compute noise levels at user-defined points on the ground.

1.5.1 Graphic Representation of Aircraft Noise Exposure

Noise exposure contours are lines on a map that connect points of equal values, much like topographic contours are drawn to indicate area of equal ground elevation. For example, a contour may be drawn to connect all points of 60 dB; another may be drawn to connect all points of 65 dB; and so forth. Generally, noise contours are plotted at 5-dB intervals.

NOI-3 Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for NHB Project Variant

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Technical Memorandum

Date	December 20, 2023
To	Paul Mitchell, ESA
From	Chris Nottoli, ESA Dominic Scarano, ESA Justin Cook, ESA
Subject	**UCSF BCH Oakland NHB Project Environmental Impact Report Helistop Noise and Air Quality Modeling Approach, Input Assumptions, and Results for NHB Project Variant**

1. Background

ESA is preparing an Environmental Impact Report (EIR) for a proposed new hospital building, site support building, parking structure, and associated improvements at the UCSF Benioff Children's Hospital (BCH) Oakland campus, collectively known as the New Hospital Building (NHB) Project, or the Project. The Project includes the relocation of the existing helistop at Project site to the rooftop of the proposed parking structure. The existing helistop is located on a 36-foot-tall above ground level (agl) helistop structure located in the southern portion of the campus. The Project variant helistop would be relocated approximately 125 feet south of the existing location to the rooftop of the proposed parking structure. In accordance with the scope of work, noise contours and an air emission inventory were produced for two scenarios: 2022 Existing Conditions and 2031 Proposed Project Variant. A speech interference and sleep disturbance analysis was also conducted as part of the scope. The previous Helistop Noise Assessment conducted in support of the Children's Hospital and Research Center Oakland (CHRCO) Campus Master Plan (CMP) Project Final EIR, completed by Brown-Buntin Associates, Inc. in July 2014 (hereinafter, "the BBA Report"), was used as the basis for some of the noise modeling inputs.[1] This technical memorandum discusses the noise modeling approach, input assumptions, and results of the analysis for the Project variant. Please see Appendix A in this technical memorandum for additional information on aircraft noise and aircraft noise terminology.

The following sections address the Federal Aviation Administration (FAA)'s Aviation Environmental Design Tool (AEDT)[2], Version 3e, inputs developed under the following categories:

- Helistop layout physical descriptions
- Aircraft operations
- Aircraft noise, air quality, and performance characteristics
- Flight track geometry and use
- Meteorological conditions
- Terrain
- Discussion of Results

1 "Helistop Replacement Project Children's Hospital and Research Center Oakland," Brown-Buntin Associates, Inc., August 2014.

2 https://aedt.faa.gov/

2. Helistop Layout Physical Descriptions

The UCSF BCH Oakland campus site is located two miles northeast of downtown Oakland in Alameda County, California, between Martin Luther King Jr. Way and State Route 24 (SR 24). The campus site is surrounded by residential and commercial land uses. The existing UCSF BCH Oakland helistop is atop a 36-foot agl structure located in the southern portion of the Project site.

This technical memorandum includes the existing helistop layout, which is used in the 2022 Existing Conditions, and the proposed helistop layout which is used in the 2031 Project Variant Scenario. **Table 1** provides the helistop layout data for the Existing and Project Variant scenarios.

Table 1. Helistop Data
Source: AirportIQ 5010 Airport Master Records and Reports; Smith Group, 2023

Helistop	Latitude	Longitude	Elevation (Feet Mean Sea Level [MSL])
Existing	37.836174	-122.266796	131
Project Variant	37.835813	-122.266702	133

3. Aircraft Operations

Title 14 of the Code of Federal Regulations (CFR) Part 150 (14 CFR Part 150) and its table of noise/land use compatibility guidelines require the calculation of Day Night Average Sound Level (DNL), or Community Noise Equivalent Level (CNEL) for aircraft noise analyses in California. That is, the total noise exposure (in CNEL) averaged over a year – typically a calendar year. The AEDT produces these values of exposure utilizing an "average annual day" of aircraft operations.

Helistop operations for all the modeling scenarios were derived based on flight log data provided by UCSF BCH Oakland. It is projected that operations will increase at a rate of 1% per year through the completion date of the proposed helistop. The annual operations modeled for the 2022 Existing Conditions and the 2031 Scenarios were 786 and 858, respectively.[3,]

The AgustaWestland A-109 was modeled as the primary helicopter operating at UCSF BCH Oakland campus site, as is consistent with the BBA Report. The A-109 is a twin-engine helicopter with a four-bladed main rotor and a conventional (unshrouded) tail rotor. The operational characteristics and noise levels of the A-109 are representative of the older and relatively noisy helicopters that currently utilize or would be expected to utilize the existing or replacement helistop. As such the modeling of this helicopter, reflects a conservative approach to noise exposure. The day-evening-night split for arrivals and departures were derived from calendar year 2022 flight logs and applied to the annual operations. The arrival split was modeled as 55.4% (day), 15.7% (evening), and 28.9% (night). The departure split was modeled as 51.2% (day), 18.4% (evening), and 30.4% (night). **Table 2** presents the 2022 Existing Conditions annual operations. **Table 3** presents the 2031 Project Variant forecast annual operations.

3 Each helicopter landing/takeoff counts as one aircraft operation.

Table 2. Annual Aircraft Operations – 2022 Existing Conditions
Source: BCH, 2023; ESA, 2022

Operation	Aircraft	Day	Evening	Night	Total
Arrivals	A-109	217.61	61.71	113.68	393
Departures	A-109	201.43	72.25	119.32	393
	Subtotal	**419.04**	**133.96**	**233.0**	**786**

Table 3. Annual Aircraft Operations – 2031 Project Variant
Source: BCH, 2023; ESA, 2022

Operation	Aircraft	Day	Evening	Night	Total
Arrivals	A-109	237.55	67.36	124.09	429
Departures	A-109	219.88	78.87	130.25	429
	Subtotal	**457.42**	**146.23**	**254.34**	**858**

4. Aircraft Noise, Air Emissions, and Performance Characteristics

Specific noise and performance data must be entered into the AEDT for the helicopter operating at the campus site. Noise data is included in the form of Sound Exposure Level (SEL) at a range of distances (from 200 feet to 25,000 feet) from a particular aircraft with engines operating at a specific thrust level. Performance data includes thrust, speed and altitude profiles for takeoff and landing operations. The AEDT database contains standard noise and performance data for helicopter aircraft most of which are civilian aircraft. The AEDT automatically accesses the noise and performance data for takeoff and landing operations by those aircraft.

Besides identifying the aircraft types in the database, the AEDT has STANDARD, ICAO, and Noisemap aircraft flight profiles for takeoffs, landings, and flight patterns or touch-and-go operations. ESA used standard profiles for the AgustaWestland A-109, consistent with the previous conservative approach to the helicopter noise assessment conducted in support of the CHRCO CMP Project Final EIR.

Air emissions sources at the helistop within this analysis are from the helicopters operating at the hospital. Emissions inventories from the operation of helicopter main engines during each phase of flight were prepared using the AEDT.

5. Flight Track Geometry and Use

Model flight track geometry was taken from the BBA Report. ESA updated the proposed arrival and departure tracks by shifting and snapping the existing flight tracks to the proposed helistop location, and confirmed with Heliplanners, an aviation consulting firm for the Project, that the proposed flight tracks are representative. **Figure 1** and **Figure 2** present the Existing Conditions and Project Variant model flight tracks, respectively. It is expected that 90% of helicopter operations will arrive from the east and depart to the west. Usage was distributed evenly when multiple tracks arrive from or depart to the same direction.[4] **Table 4** presents the modeled flight track usage percentages.

4 The previous BAA Report applied 100% track utilization to each of the eight model flight tracks resulting in a 600% increase in annual helicopter operations.

Figure 1. Existing Conditions Model Flight Tracks

Source: AEDT, 2023; ESA, 2023

Figure 2. Project Variant Model Flight Tracks

Source: AEDT, 2023; ESA, 2023

Table 4. Arrival and Departure Track Usage
Source: ESA, 2023

Track Name	Direction of Travel	Track Use
		Arrivals
ASW	Westbound	45%
ANW	Westbound	45%
AE	Eastbound	10%
	Arrivals Subtotal	**100%**
		Departures
DNE	Eastbound	5%
DSE	Eastbound	5%
DNW	Westbound	30%
DSW	Westbound	30%
DW	Westbound	30%
	Departures Subtotal	**100%**

6. Meteorological Conditions

The AEDT has several settings that affect aircraft performance profiles and sound propagation based on meteorological data. Meteorological settings include 10-year average temperature, barometric pressure, and relative humidity at the airport. Weather data from Oakland International Airport (OAK) was used as weather information for UCSF BCH Oakland is not available in the AEDT. The AEDT holds the following values for annual average weather conditions at OAK:

- Temperature: 58.38º F
- Pressure: 1013.47 millibars
- Sea-level Pressure: 1016.75 millibars
- Relative Humidity 72.61%
- Dew Point: 49.62° F
- Wind Speed: 7.2 Knots

7. Terrain

Terrain data describes the elevation of the ground surrounding the helistop. If the AEDT user selects the use of terrain data, the AEDT uses terrain data to adjust the ground level under the flight paths. The terrain data does not affect the aircraft's performance or noise levels but does affect the vertical distance between the aircraft and a "receiver" on the ground. This in turn affects noise propagation assumptions about how noise propagates over ground. ESA obtained 1/3 arcsecond terrain data from the United States Geological Survey (USGS) National Map Viewer and used it with the terrain feature of the AEDT in generating the noise contours.[5]

[5] USGS terrain obtain on June 22, 2023.

8. Discussion of Results

Changes in Noise Contours and Noise Exposure

The 2022 Existing Conditions and 2031 Project Variant CNEL contours are presented in **Figure 3** and **Figure 4**, respectively. A comparison of the 2022 Existing Conditions and 2031 Project Variant is presented in **Figure 5**. Each figure shows the 60 through 75 CNEL contours in 5 dB increments over an aerial basemap and includes the noise impact assessment site locations. Noise impact assessment site locations were selected as part of the ambient noise measurements conducted between May 23rd through May 25th, 2023. Site locations were selected to be consistent with the helicopter noise assessment conducted in support of the CHRCO CMP Project Final EIR.

Figure 3. 2022 Existing Conditions CNEL Contours

Source: AEDT, 2023; ESA, 2023

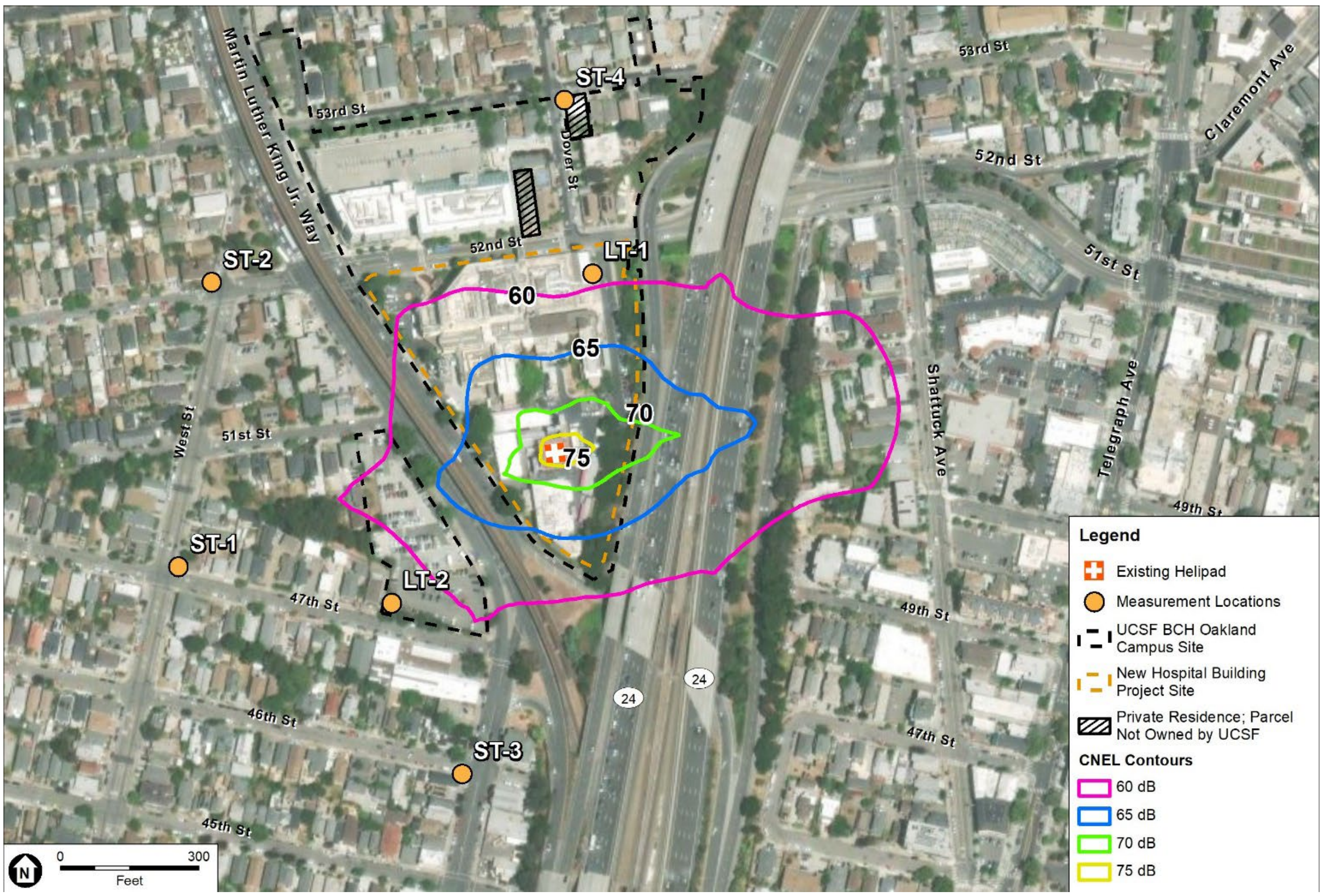


Figure 4. 2031 Project Variant CNEL Contours

Source: AEDT, 2023; ESA, 2023

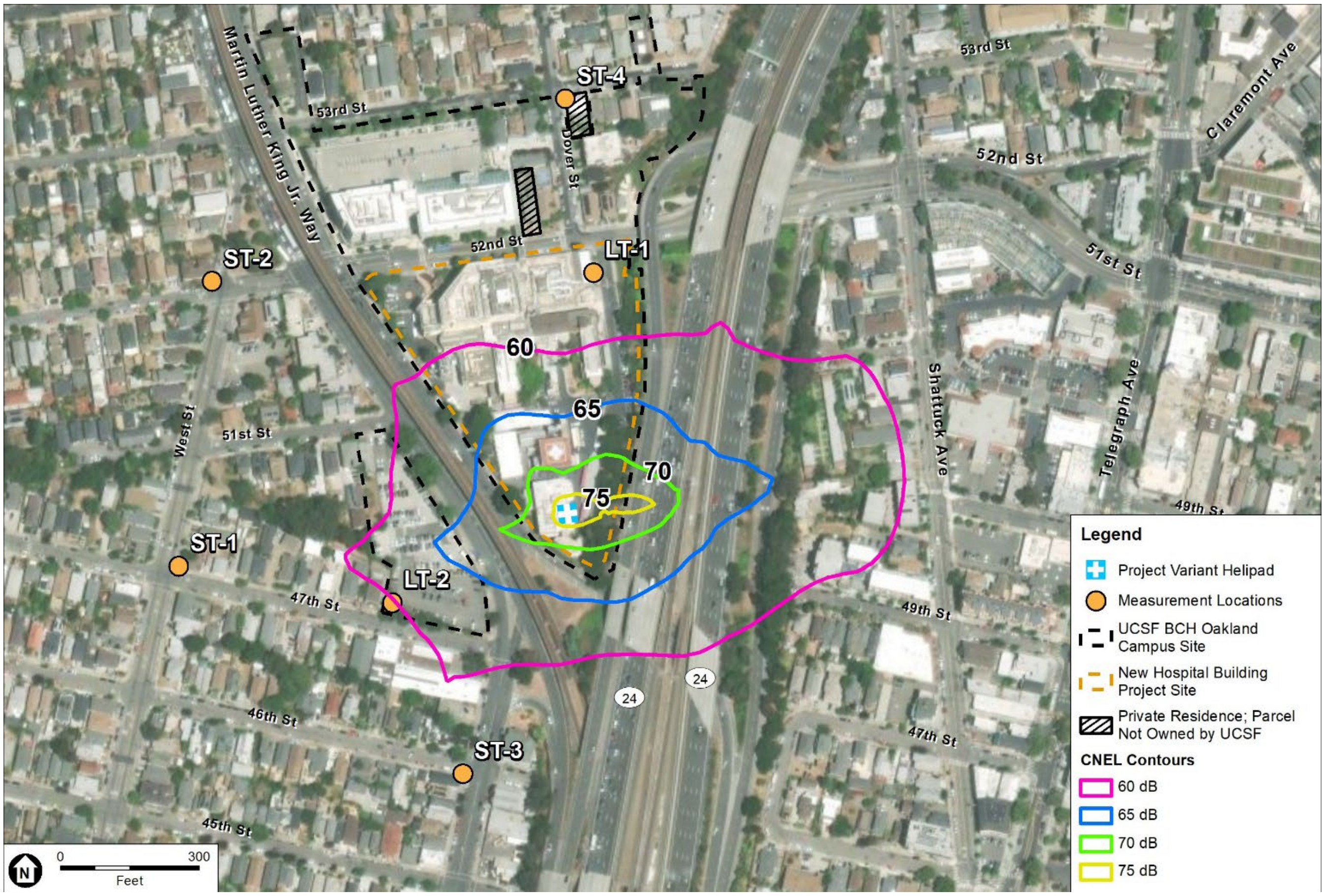
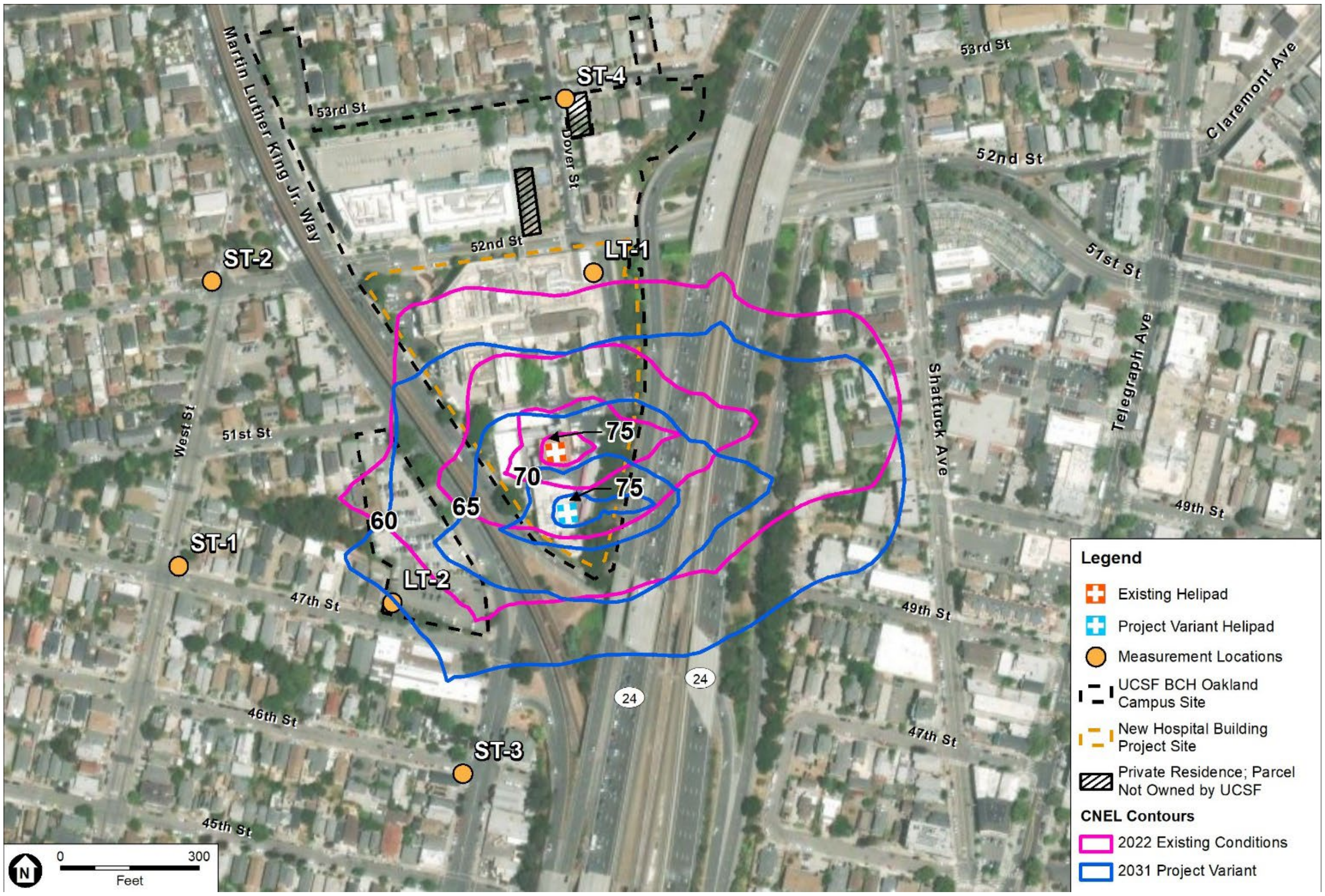


Figure 5. 2022 Existing Conditions and 2031 Project Variant CNEL Contours Comparison

Source: AEDT, 2023; ESA, 2023



Noise levels, in terms of CNEL, were calculated for the 2022 Existing Conditions and 2031 Project Variant based on the location of the existing helistop and for the Project Variant scenario based on the location of the relocated helistop. **Table 5** provides the modeled results at each of the noise impact assessment site locations. Sites LT-1, ST-2, and ST-4 are located to the north of both helistops, while LT-2, ST-1 and ST-3 are located to the south of both helistops.

At LT-1, at the northeast corner of the hospital, the CNEL under the Project Variant scenario is lower at 56.5 dB compared to the existing level of 59.0 dB, resulting in a project-related change of -2.6 dB. Residential sites ST-2 and ST-4 also show a slight decrease in CNEL of -0.5 dB (from 50.8 dB to 50.4 dB) and -0.9 dB (from 52.2 dB to 51.3 dB), respectively.

South of the helistops, residential site LT-2 experiences an increase in CNEL under the Project Variant scenario, increasing from 56.9 dB under existing conditions to 59.7 dB, resulting in a project-related change of 2.8 dB. Residential site ST-1 experiences an increase of 0.1 dB from 53.8 dB to 54.0 dB and ST-3 displays a 2.3 dB increase from 52.3 dB to 54.5 dB under the Project Variant scenario.

In summary, overall Project variant-related changes show decreases in noise exposure ranging from -0.4 dB to -2.5 dB at sensitive land uses to the north of the helistops and increases in noise exposure ranging from 0.2 dB to 2.8 dB at sensitive land uses to the south of the helistops.

Table 5. Modeled CNEL Values at Noise Impact Assessment Sites

Source: ESA, 2023

Site	Land Use	Existing Helistop CNEL (dB)	Project Variant Helistop CNEL (dB)	
		2022	2031	Project Variant Related Change
LT-1	Hospital	59.0	56.5	-2.5
LT-2	Residential	56.9	59.7	2.8
ST-1	Residential	53.8	54.0	0.2
ST-2	Residential	50.8	50.4	-0.4
ST-3	Residential	52.3	54.5	2.2
ST-4	Residential	52.2	51.3	-0.9

Land uses within the CNEL contours were analyzed using Google Earth aerial photography with results shown in **Table 6**. It should be noted that the hospital and all associated facilities were considered as one noise-sensitive use which is located within the CNEL 65+ under both scenarios analyzed. There are no churches, schools, or public parks exposed to CNEL 60-65 under both modeling scenarios. Project variant-related changes show a net decrease of three single-family residential homes and one commercial building within the CNEL 60-65. Project variant-related changes show a net increase of four apartment complexes within the CNEL 60-65.

Table 6. Land Use
Source: ESA, 2023

Land Use	Existing Helistop			Project Variant Helistop			Project Variant Related Changes 2031								
	2022			2031			Noise Exposure Increase			Noise Exposure Decrease			Net Noise Exposure Change		
	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+	60 65	65 70	70+
Homes	3	0	0	0	0	0	0	0	0	3	0	0	-3	0	0
Apartment Buildings	14	0	0	18	0	0	4	0	0	0	0	0	4	0	0
Mixed Use	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Churches	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Schools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hospitals	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
Commercial	1	0	0	0	0	0	0	0	0	1	0	0	-1	0	0
Parks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Single-Event Noise Impacts on Sleep and Speech

A single event analysis was performed for each noise impact assessment site location, utilizing three metrics: Sound Exposure Level (SEL) to evaluate the potential for sleep disturbance, and Maximum A-Weighted Sound Level (Lmax), and Time Above (TA) to assess the potential for speech interference. Single event metrics such as SEL and Lmax represent worst-case noise exposure for a single noise event, and as such, are not affected by changes to the total number of annual operations. The single event metrics were modeled using the closest track to each noise impact assessment site location.

To determine potential sleep disturbance, an outdoor-to-indoor noise level reduction (NLR) must be applied. A typical NLR for a residence in the project area with windows open is 10-15 dB and 15-20 dB when windows and doors are closed.[6] For this analysis, an NLR of 15 dB was applied to modeled results. For example, a single event with an exterior SEL of 90 dB would result in an interior SEL of 75 dB.

Sleep disturbance is often expressed as "maximum percent awakened," and represents the potential for sleep disturbance within the population residing beneath a specific flight path, indicating the maximum percentage expected to be awakened. For example, if a city block houses 200 individuals and the maximum percent awakened is 10%, this implies that up to 20 people may be awakened due to a passing flight during nighttime hours (10 p.m. to 7 a.m.). As it relates to project-related change, a 1% increase would equate to an additional two (2) people potentially being awakened during nighttime hours. **Table 7** summarizes the calculated SEL values at each noise impact assessment site location for potential sleep disturbance. The 15 dB NLR was subtracted from the exterior SEL and the Federal Interagency Committee on Aviation Noise (FICAN) dose response was calculated based on the interior SEL.[7]

As previously mentioned, sites LT-1, ST-2, and ST-4 are located to the north of the helistops, while LT-2, ST-1 and ST-3 are located to the south of the helistops.

At LT-1, at the northeast corner of the hospital, the maximum percent awakened under the Project Variant scenario is lower at 10.7% compared to the existing level of 11.1%, resulting in a Project variant-related change of -0.4%. Residential sites ST-2 and ST-4 show a slight decrease in maximum percent awakened of -0.4% (from 8.2% to 7.8%) and -0.5% (from 7.1% to 6.6%), respectively.

South of the helistops, residential site LT-2 experiences an increase in maximum percent awakened under the Project Variant scenario, increasing from 9.7% to 10.7%, resulting in a project variant-related change of 1.0%. Residential sites ST-1 and ST-3 show a slight decrease in maximum percent awakened of -0.2% (from 10.6% to 10.4%) and -0.8% (from 9.3% to 8.5%), respectively.

Overall, project variant-related changes show a decrease in maximum percent awakened from -0.2 dB to -0.8 dB at all modeled site locations except one. An increase of 1.0% is expected at LT-2, southwest of the hospital.

6 US Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety*, March 1974.

7 Federal Interagency Committee on Aviation Noise, *Effects of Aviation Noise on Awakenings from Sleep*, June 1997.

Table 7. Potential Sleep Disturbance
Source: ESA, 2023, FICAN

Site	Land Use	Existing Helistop			Project Variant Helistop			Project Variant Related Change (%)
		Exterior SEL (dB)[1]	Interior SEL (dB)[2]	Maximum % Awakened[3]	Exterior SEL (dB)[1]	Interior SEL (dB)[2]	Maximum % Awakened[3]	
LT-1	Hospital	99.4	84.4	11.1	98.2	83.2	10.7	-0.4
LT-2	Residential	95.3	80.3	9.7	98.3	83.3	10.7	1.0
ST-1	Residential	98.1	83.1	10.6	97.5	82.5	10.4	-0.2
ST-2	Residential	91.0	76.0	8.2	89.6	74.6	7.8	-0.4
ST-3	Residential	94.2	79.2	9.3	91.8	76.8	8.5	-0.8
ST-4	Residential	87.4	72.4	7.1	85.5	70.5	6.6	-0.5

Notes:
[1] AEDT calculated SEL value for the A-109 on flight track closest to receiver.
[2] Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.
[3] Maximum percent awakened calculated using FICAN dose-response curve.

Potential speech interference is assumed to occur at interior noise levels at or above 65 dB. The AEDT was used to calculate exterior noise levels that exceeded 80 dB, (e.g., TA 80 dB in minutes per day) to account for the 15 dB NLR inside the residence. **Table 8** summarizes the calculated Lmax and TA 65 values at each noise impact assessment site location for potential speech interference. The data shows that the overall Project variant-related changes have a small increase to the existing speech interference duration at the modeled residential site locations and a small decrease at LT-1.

Table 8. Potential Speech Interference
Source: ESA, 2023

Site	Land Use	Existing Helistop		Project Variant Helistop		
		Lmax (dB)[1]	2022 TA65 (min/day)	Lmax (dB)[1]	2031 TA65 (min/day)	Project Variant Related Change (min/day)
LT-1	Hospital	98.7	0.4	98.4	0.3	-0.1
LT-2	Residential	101.0	0.1	104.7	0.2	0.1
ST-1	Residential	100.6	0.0	102.4	0.1	0.1
ST-2	Residential	85.1	0.0	82.8	0.1	0.1
ST-3	Residential	90.4	0.1	97.5	0.1	0.0
ST-4	Residential	88.1	0.1	85.7	0.2	0.1

Notes:
[1] AEDT calculated SEL value for the A-109 on flight track closest to receiver.
[2] Outdoor-to-indoor noise level reduction of 15 was applied to all receivers.

Criteria Pollutant Emissions from Helistop Operations

Emissions inventories for the following CARB criteria air pollutants were prepared for the 2022 Existing Conditions and 2031 Project Variant scenarios using the modeling methodology described in previous sections: carbon monoxide, volatile organic compounds (a precursor to ozone), oxides of nitrogen, oxides of sulfur, particulate matter, and fine particulate matter. The emissions inventories for the 2022 Existing Conditions and Project Variant scenarios are shown in **Table 9**. Based on the emissions modeling results, helistop operations under the Project Variant scenario would not result in air emissions that would exceed applicable threshold of significance for any criteria air pollutants.

Table 9. Helicopter Air Emissions Inventories (Short Tons Per Year)
Source: ESA, 2023

Scenario	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2022 Existing Conditions	0.15	0.01	0.09	0.02	0.00	0.00
2031 Project Variant	0.16	0.01	0.10	0.02	0.00	0.00

APPENDIX A
Aircraft Noise

1.1 Environmental Noise Fundamentals

The measurement and human perception of sound involve two basic physical characteristics: intensity and frequency. Intensity is a measure of the acoustic energy of sound vibrations, expressed in terms of sound pressure. The higher the sound pressure, the more energy carried by the sound and the louder the perception of that sound. The second important physical characteristic is sound frequency, which is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB). On this scale, zero dB corresponds roughly to the threshold of human hearing and 120 to 140 dB corresponds to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound. Noise is commonly defined as unwanted sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequencies spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts on humans, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency weighting and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown on **Figure A-1**.

1.2 General Characteristics of Aircraft Noise

Outdoor sound levels decrease as a function of distance from the source and as a result of wave divergence, atmospheric absorption, and ground attenuation. If sound is radiated from a source in a homogenous and undisturbed manner, the sound travels as spherical waves. As the sound wave travels away from the source, the sound energy is distributed over a greater area, dispersing the sound power of the wave. Spherical spreading of the sound wave reduces the noise level, for most sound sources, at a rate of 6 dB per doubling of the distance.

Atmospheric absorption also influences the levels that are received by the observer. The greater the distance sound travels, the greater the influence of atmospheric effects. Atmospheric absorption becomes important at distances of greater than 1,000 feet. The degree of absorption is a function of the sound frequency, as well as the humidity and temperature of the air. For example, atmospheric absorption is lowest at high humidity and higher temperatures. Turbulence and gradients of wind, temperature, and humidity also play a significant role in determining the degree of attenuation. Certain conditions, such as inversions, can also result in higher sound levels that would result from spherical spreading as a result of channeling or focusing the sound waves.

Absorption effects in the atmosphere vary with frequency. The higher frequencies are more readily absorbed than the lower frequencies. Over large distances, the lower frequencies become the dominant sound as the higher frequencies are attenuated.

The effects of ground attenuation on aircraft noise propagation are a function of the height of the source and/or receiver and the characteristics of the terrain. The closer the source of the noise is to the ground, the greater the ground absorption. Terrain consisting of soft surfaces, such as vegetation, provide for more ground absorption than hard surfaces, such as a large parking lot.

Aircraft noise originates from both the engines and the airframe of an aircraft, but the engines are, by far, the more significant source of noise. Meteorological conditions affect the transmission of aircraft noise through the air. Wind speed and direction, and the temperature immediately above ground level, cause diffraction and displacement of sound waves. Humidity and temperature materially affect the transmission of air-to-ground sound through absorption associated with the instability and viscosity of the air.

1.3 Aircraft Noise Descriptors

The description, analysis, and reporting of aircraft noise levels is made difficult by the complexity of human response to sound and the myriad of sound-rating scales and metrics that have been developed for describing acoustic effects. Various rating scales have been devised to approximate the human response to the “loudness” or “noisiness” of a sound. Noise metrics have been developed to account for additional parameters, such as duration and cumulative effect of multiple events.

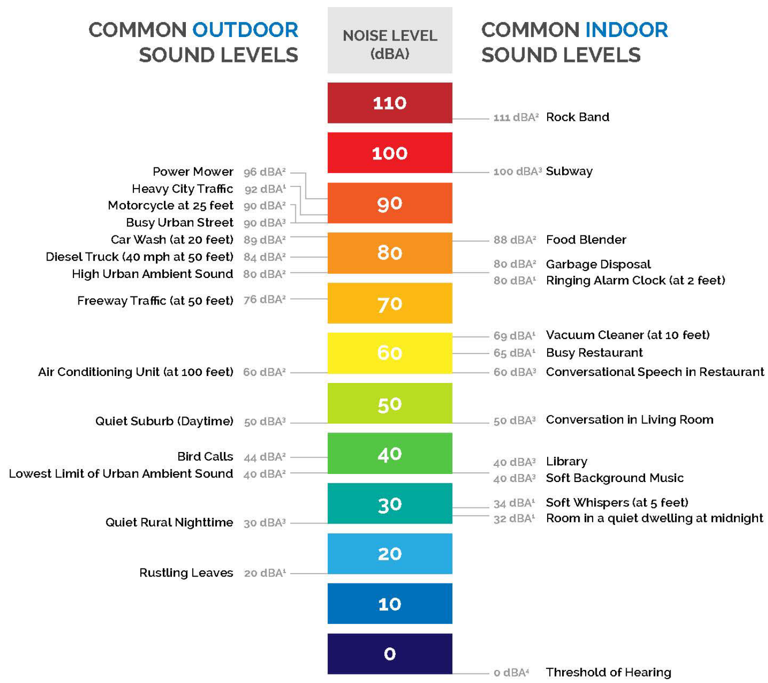
Noise metrics can be categorized as single-event metrics and cumulative metrics. Single-event metrics describe the noise from individual events, such as an aircraft flyover. Cumulative metrics describe the noise in terms of the total noise exposure over a period of time.

1.3.1 A-Weighted Sound Pressure Level (dBA)

The decibel is a unit used to describe sound pressure level. When expressed in dBA, the sound has been filtered to reduce the effect of very low and very high frequency sounds, much as the human ear filters sound frequencies. Without this filtering, calculated and measured sound levels would include events that the human ear cannot hear (e.g., dog whistles and low frequency sounds, such as the groaning sounds emanating from large buildings with changes in temperature and wind). With A-weighting, calculations and sound monitoring equipment approximate the sensitivity of the human ear to sounds of different frequencies.

Some common sound levels on the dBA scale are listed in **Figure A-1**. As shown, the relative perceived loudness of a sound doubles for each increase of 10 dBA, although a 10-dBA change in the sound level corresponds to a factor of 10 changes in relative sound energy. Generally, single-event sound levels with differences of 2 dBA or less are not perceived to be noticeably different by most listeners.

FIGURE A-1
COMMON SOUNDS ON THE A WEIGHTED DECIBEL SCALE



1 Aviation Noise Effects, FAA, AEE, March, 1985 (FAA-EE-85-2), Table 1.1
2 Federal Agency Review of Selected Airport Noise Analysis Issues (Federal Interagency Committee on Noise), August 1992, Table B.1
3 Children's health and the environment, A Global Perspective, World Health Organization, 2005, Table 15.1
4 OSHA Technical Manual, TED 01-00-015, Section III (Health Hazards), Chapter 5 (Noise, Updated 8/15/2013)

Source: Environmental Science Associates, 2023.

1.3.2 Maximum A-Weighted Sound Level (Lmax)

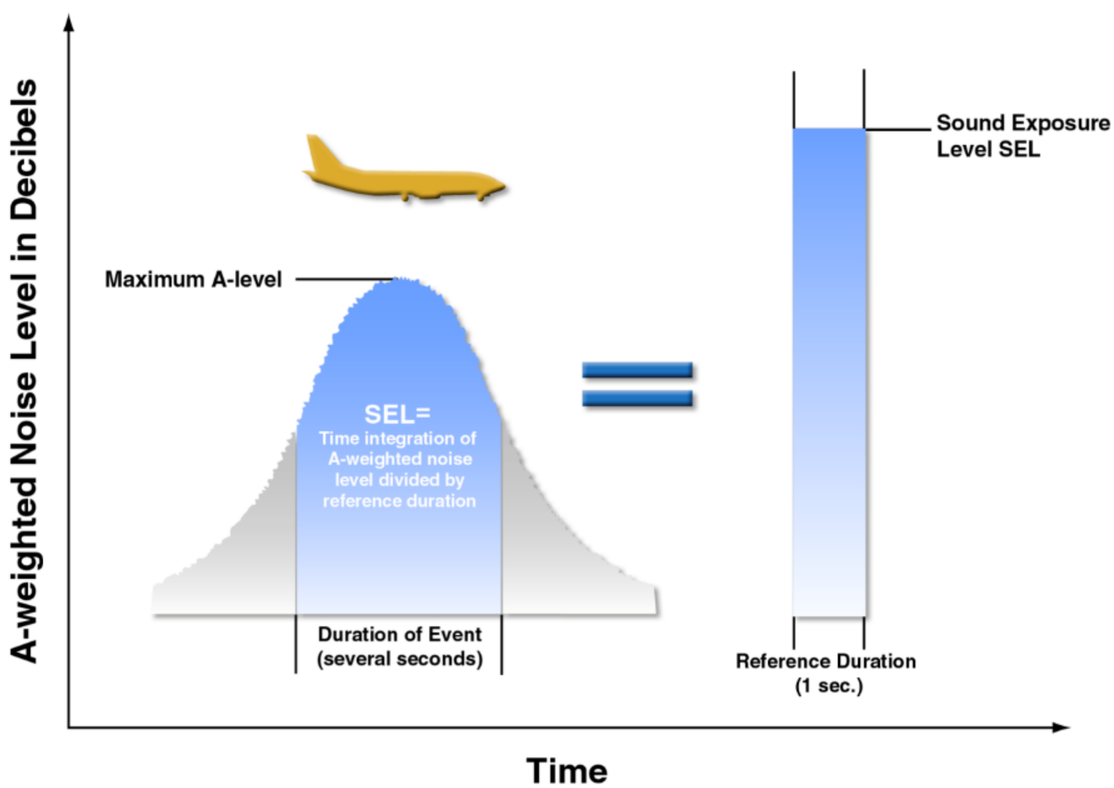
Lmax is the maximum, or peak, sound level during a noise event. The metric only accounts for the highest A-weighted sound level measured during a noise event, not for the duration of the event. For example, as an aircraft approaches, the sound of the aircraft begins to rise above ambient levels. The closer the aircraft gets, the louder the sound until the aircraft is at its closest point. As the aircraft passes, the sound level decreases until the sound returns to ambient levels. Some sound level meters measure and record the maximum sound level (Lmax). The Lmax for an aircraft flyover is illustrated on **Table A-1**.

TABLE A-1
COMMON SOUNDS ON THE A-WEIGHTED DECIBEL SCALE

Sound	Sound level (dBA)	Relative loudness (approximate)	Relative sound energy
Rock music, with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 feet, noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobiles at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001

SOURCE: U.S. Department of Housing and Urban Development, Aircraft Noise Impact—Planning Guidelines for Local Agencies, 1972.

FIGURE A-2
SOUND EXPOSURE LEVEL AND MAXIMUM SOUND LEVEL



SOURCE: Brown-Buntin Associates, Inc., November 2004.

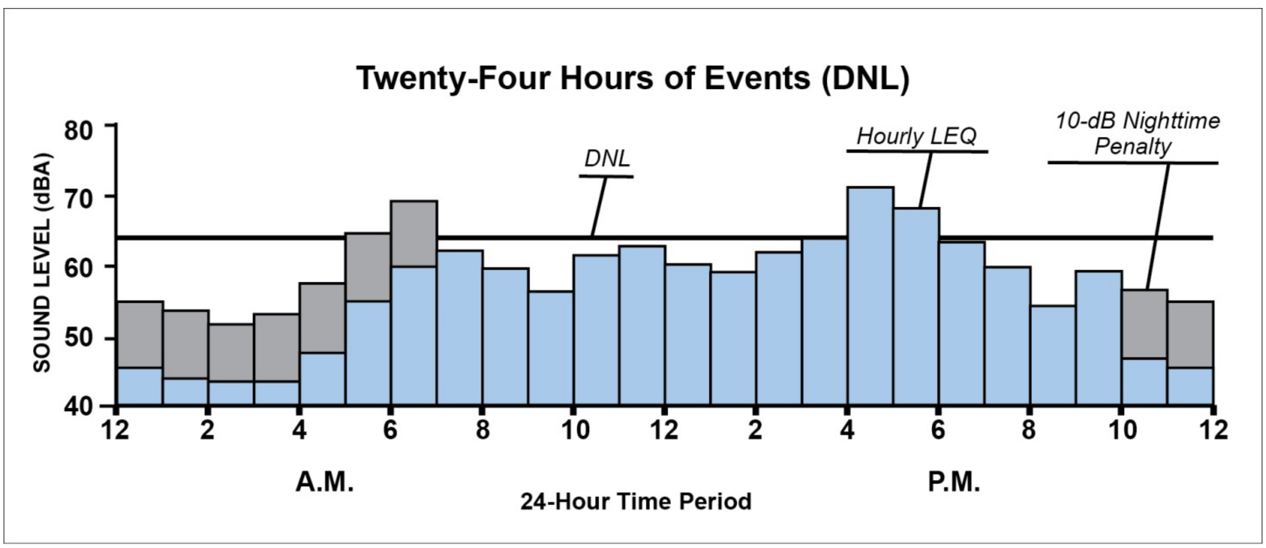
1.3.3 Sound Exposure Level (SEL)

Sound Exposure Level (SEL), is a time integrated measure, expressed in decibels, of the sound energy of a single noise event at a reference duration of one second. The sound level is integrated over the period that the level exceeds a threshold. Therefore, SEL accounts for both the maximum sound level and the duration of the sound. The standardization of discrete noise events into a one-second duration allows calculation of the cumulative noise exposure of a series of noise events that occur over a period of time. The SEL of an aircraft noise event is typically 7 to 12 dBA greater than the Lmax of the event. SELs for aircraft noise events depend on the location of the aircraft relative to the noise receptor, the type of operation (landing, takeoff, or overflight), and the type of aircraft. The SEL for an aircraft flyover is also illustrated on **Figure A-2**.

1.3.4 Equivalent Noise Level (L_{eq})

Equivalent Noise Level (Leq) is the sound level corresponding to a steady state, A-weighted sound level containing the same total energy as a time-varying signal over a given sample period. Leq is the “energy” average noise level during the time period of the sample. It is based on the observation that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. It is the energy sum of all the sound that occurs during that time period. This is graphically illustrated in the middle graph on **Figure A-3**. Leq can be measured for any time period, but is typically measured for 15 minutes, 1 hour, or 24 hours.

FIGURE A-3
DAY-NIGHT AVERAGE SOUND LEVEL



1.4 Aviation Environmental Design Tool

The noise analyses were conducted using the most current version of the FAA's Aviation Environmental Design Tool (AEDT). The AEDT is the FAA's standard model for evaluating aircraft noise, fuel burn/consumption, and emissions at airports. For this analysis, AEDT, Version 3e, was used to model aircraft noise exposure for aircraft flybys at the Pacific Airshow Huntington Beach.

The AEDT produces noise exposure contours that are used for land use compatibility maps. The program includes a built-in Geographic Information System (GIS) platform and tools for comparing contours and utilities that facilitate easy export to other GIS software suites. The model can also calculate predicted noise at specific sites such as hospitals, schools, or other noise-sensitive locations. For these discrete locations, the AEDT has the capability to report noise exposure levels at the specific location.

The AEDT accounts for each aircraft flight along flight tracks to or from the airport, or aircraft overflying the airport. Flight track definitions are coupled with information in the model's databases relating to noise levels at varying distances and flight performance data for each distinct type of aircraft selected. In general, the model computes noise levels at regularly-spaced grid receptors at ground level around the airport. The distance to each aircraft in flight is computed (slant distance), and the associated noise exposure of each aircraft flying along each flight track within the vicinity of the grid receptor is determined. The logarithmic acoustical energy levels for each individual aircraft single-event are then summed for each grid receptor. The AEDT can create contours of specific noise levels based on the acoustical energy summed at each of the grid receptors for the selected metric. The cumulative values of noise exposure at each grid receptor are used to interpolate contours of equal noise exposure. The AEDT can also compute noise levels at user-defined points on the ground.

1.5.1 Graphic Representation of Aircraft Noise Exposure

Noise exposure contours are lines on a map that connect points of equal values, much like topographic contours are drawn to indicate area of equal ground elevation. For example, a contour may be drawn to connect all points of 60 dB; another may be drawn to connect all points of 65 dB; and so forth. Generally, noise contours are plotted at 5-dB intervals.

Appendix TRANS
Transportation

UCSF BCH Oakland NHB Project

Appendix TRANS-A: Driveway Counts

FEHR PEERS

Location: Main Garage on MLK
Date 05/17/2023
Site Location A

	5/17/2023				5/18/2023	
	IN	OUT			IN	OUT
0:00	0	14		0:00	1	6
0:15	0	1		0:15	1	7
0:30	0	4		0:30	0	2
0:45	2	4		0:45	2	1
1:00	2	0		1:00	1	2
1:15	0	2		1:15	0	0
1:30	2	2		1:30	1	5
1:45	0	3		1:45	1	2
2:00	0	1		2:00	0	1
2:15	1	0		2:15	1	0
2:30	0	2		2:30	0	1
2:45	1	3		2:45	1	1
3:00	0	3		3:00	1	1
3:15	0	2		3:15	0	0
3:30	0	1		3:30	0	0
3:45	0	2		3:45	1	2
4:00	2	0		4:00	1	0
4:15	4	1		4:15	2	2
4:30	1	1		4:30	3	2
4:45	0	1		4:45	3	0
5:00	4	3		5:00	4	2
5:15	5	4		5:15	8	0
5:30	8	0		5:30	6	0
5:45	8	4		5:45	8	4
6:00	8	4		6:00	13	5
6:15	21	2		6:15	24	2
6:30	44	3		6:30	53	2
6:45	75	6		6:45	62	3
7:00	36	12		7:00	25	2
7:15	28	10		7:15	31	6
7:30	32	45		7:30	41	31
7:45	52	12		7:45	44	22
8:00	56	10		8:00	51	8
8:15	45	8		8:15	34	7
8:30	51	10		8:30	38	7
8:45	66	13		8:45	54	4
9:00	49	8		9:00	46	7
9:15	33	8		9:15	36	12
9:30	29	8		9:30	34	11
9:45	40	17		9:45	28	18
10:00	30	18		10:00	29	14

Location: Main Garage on MLK
Date 05/17/2023
Site Location A

	5/17/2023	
	IN	OUT
10:15	19	21
10:30	24	17
10:45	20	26
11:00	16	11
11:15	9	19
11:30	15	25
11:45	13	14
12:00	11	27
12:15	18	21
12:30	22	13
12:45	31	14
13:00	15	24
13:15	27	17
13:30	18	14
13:45	22	23
14:00	21	23
14:15	19	21
14:30	34	22
14:45	42	28
15:00	22	47
15:15	18	36
15:30	9	48
15:45	12	38
16:00	6	43
16:15	1	50
16:30	9	57
16:45	13	58
17:00	4	45
17:15	6	37
17:30	7	32
17:45	14	25
18:00	15	19
18:15	11	22
18:30	13	18
18:45	18	9
19:00	3	25
19:15	7	14
19:30	7	20
19:45	5	19
20:00	2	13
20:15	2	9

	5/18/2023	
	IN	OUT
10:15	17	10
10:30	16	22
10:45	31	17
11:00	18	21
11:15	9	16
11:30	9	20
11:45	14	17
12:00	13	17
12:15	14	17
12:30	21	21
12:45	27	15
13:00	22	11
13:15	20	26
13:30	26	20
13:45	30	18
14:00	15	19
14:15	23	22
14:30	25	29
14:45	29	30
15:00	19	46
15:15	10	39
15:30	9	55
15:45	10	36
16:00	10	46
16:15	5	46
16:30	8	59
16:45	13	42
17:00	3	39
17:15	6	43
17:30	3	32
17:45	10	23
18:00	8	18
18:15	8	18
18:30	6	16
18:45	15	16
19:00	5	16
19:15	6	14
19:30	5	27
19:45	3	6
20:00	4	9
20:15	4	3

Location: Main Garage on MLK
Date 05/17/2023
Site Location A

	5/17/2023	
	IN	OUT
20:30	3	11
20:45	3	8
21:00	3	6
21:15	5	4
21:30	1	7
21:45	3	8
22:00	1	7
22:15	8	5
22:30	19	10
22:45	23	4
23:00	14	6
23:15	2	7
23:30	0	19
23:45	3	14

	5/18/2023	
	IN	OUT
20:30	4	8
20:45	2	7
21:00	2	5
21:15	2	3
21:30	0	4
21:45	1	2
22:00	3	6
22:15	7	4
22:30	22	8
22:45	26	4
23:00	5	4
23:15	2	7
23:30	2	19
23:45	3	15

Location: Main Plaza on 52nd St
Date 05/17/2023
Site Location B

	5/17/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
0:00	1	0	0	0	3	0	0	0
0:15	2	0	0	0	1	0	0	0
0:30	1	0	0	0	4	0	0	0
0:45	0	0	0	0	1	0	0	0
1:00	1	0	0	0	3	0	0	0
1:15	3	0	0	0	2	0	0	0
1:30	1	0	0	0	4	0	0	0
1:45	1	0	0	0	3	0	0	0
2:00	1	0	0	0	2	0	0	0
2:15	2	0	0	0	0	0	0	0
2:30	1	0	0	0	4	0	0	0
2:45	0	0	0	0	2	0	0	0
3:00	0	0	0	0	1	0	0	0
3:15	1	0	0	0	4	0	0	0
3:30	0	0	0	0	1	0	0	0
3:45	1	0	0	0	1	0	0	0
4:00	0	0	0	0	1	0	0	0
4:15	1	0	0	0	0	0	0	0
4:30	0	0	0	0	2	0	0	0
4:45	1	0	0	0	1	0	0	0
5:00	0	0	0	0	1	0	0	0
5:15	0	0	0	0	1	0	0	0
5:30	0	0	0	0	1	0	0	1
5:45	1	0	0	0	3	0	0	0
6:00	0	0	0	0	1	0	0	1
6:15	2	0	0	1	2	0	0	1
6:30	3	0	0	0	3	0	0	2
6:45	1	0	0	0	3	0	0	2
7:00	2	0	0	0	6	0	0	2
7:15	1	0	0	0	4	0	0	1
7:30	1	0	0	0	3	0	0	1
7:45	1	0	0	0	4	0	0	2
8:00	5	0	0	0	9	0	0	2
8:15	2	0	0	0	4	0	0	3
8:30	3	0	0	0	5	0	1	1
8:45	1	0	0	0	9	0	0	1
9:00	2	0	0	0	5	0	0	2
9:15	3	0	0	1	3	0	0	2
9:30	3	0	0	1	8	0	0	2
9:45	2	0	0	0	6	0	0	1
10:00	2	0	0	0	6	0	0	1
10:15	2	0	0	0	9	0	0	1
10:30	5	0	0	0	4	0	0	1
10:45	3	0	0	0	6	0	0	0
11:00	8	0	0	0	10	0	1	1
11:15	4	0	0	0	7	0	0	1
11:30	7	0	0	0	11	0	0	1
11:45	2	0	0	1	5	0	0	1

Location: Main Plaza on 52nd St
Date 05/17/2023
Site Location B

	5/17/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
12:00	2	0	0	0	6	0	0	1
12:15	0	0	0	1	3	0	0	0
12:30	2	0	0	0	4	0	0	2
12:45	5	0	0	0	11	0	0	2
13:00	4	0	0	0	9	0	0	0
13:15	1	0	0	0	6	0	0	0
13:30	7	0	1	0	7	0	0	1
13:45	2	0	0	0	2	0	1	2
14:00	4	0	0	0	11	0	0	2
14:15	2	0	0	0	8	0	0	1
14:30	4	0	0	0	11	0	0	1
14:45	2	0	0	0	10	0	0	1
15:00	0	0	0	0	9	0	0	2
15:15	4	0	0	0	8	0	0	2
15:30	6	0	0	0	5	0	0	3
15:45	5	0	0	0	10	0	0	2
16:00	5	0	0	0	13	0	0	2
16:15	2	0	0	0	6	0	0	2
16:30	1	0	0	0	3	0	0	2
16:45	1	0	0	0	3	0	0	3
17:00	6	0	0	0	6	0	0	1
17:15	5	0	0	0	7	0	0	2
17:30	1	0	0	0	5	0	0	2
17:45	5	0	0	0	9	0	0	1
18:00	5	0	0	0	9	0	0	1
18:15	3	0	0	0	4	0	0	1
18:30	2	0	0	0	5	0	0	0
18:45	5	0	0	0	10	0	0	1
19:00	0	0	0	0	5	0	0	0
19:15	3	0	0	0	5	0	0	0
19:30	6	0	0	0	6	0	0	0
19:45	1	0	1	0	9	0	0	0
20:00	1	0	0	0	3	0	0	0
20:15	6	0	0	0	6	0	0	0
20:30	4	0	0	0	7	0	0	0
20:45	2	0	0	0	5	0	0	0
21:00	2	0	0	0	4	0	0	0
21:15	2	0	0	0	6	0	0	0
21:30	2	0	0	0	1	0	0	0
21:45	1	0	0	0	3	0	0	0
22:00	4	0	0	0	3	0	0	0
22:15	1	0	0	0	1	0	0	0
22:30	1	0	0	0	2	0	0	0
22:45	1	0	0	0	1	0	0	0
23:00	2	0	0	0	3	0	0	0
23:15	1	0	0	0	3	0	0	0
23:30	5	0	0	0	9	0	0	0
23:45	1	0	0	0	2	0	0	0

Location: Main Plaza on 52nd St
Date 05/17/2023
Site Location B

	5/18/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
0:00	3	0	0	0	3	0	0	0
0:15	3	0	0	0	2	0	0	0
0:30	1	0	0	0	3	0	0	0
0:45	1	0	0	0	2	0	0	0
1:00	2	1	0	0	3	0	0	0
1:15	1	0	0	0	2	0	0	0
1:30	2	0	0	0	1	0	0	0
1:45	1	0	0	0	3	0	0	0
2:00	1	1	0	0	0	0	0	0
2:15	3	0	0	0	3	0	0	0
2:30	0	0	0	0	0	0	0	0
2:45	2	0	0	0	1	0	0	0
3:00	0	0	0	0	2	0	0	0
3:15	1	0	0	0	1	0	0	0
3:30	0	0	0	0	0	0	0	0
3:45	1	0	0	0	1	0	0	0
4:00	1	0	0	0	2	0	0	0
4:15	1	0	0	0	3	0	0	0
4:30	1	0	0	0	0	0	0	0
4:45	0	0	0	0	3	0	0	0
5:00	0	0	0	0	0	0	0	0
5:15	1	0	0	0	2	0	0	0
5:30	0	0	0	0	1	0	0	1
5:45	1	0	0	0	2	0	0	0
6:00	2	0	0	0	6	0	0	1
6:15	1	0	0	0	2	0	0	1
6:30	2	0	0	0	5	0	0	2
6:45	2	0	0	0	3	0	0	2
7:00	1	0	0	0	4	0	0	2
7:15	0	0	0	0	4	0	0	1
7:30	0	0	0	0	2	0	0	2
7:45	1	0	0	0	2	0	0	1
8:00	3	0	0	0	3	0	0	2
8:15	2	0	0	0	5	0	0	1
8:30	2	0	0	0	6	0	0	2
8:45	3	0	0	0	12	0	0	1
9:00	4	0	0	0	4	0	0	1
9:15	3	0	0	0	4	0	0	0
9:30	4	0	0	0	3	0	0	2
9:45	3	1	0	0	5	0	0	1
10:00	6	0	0	0	5	0	0	1
10:15	3	0	0	0	4	0	0	1
10:30	2	0	0	0	6	0	0	1
10:45	3	0	0	1	6	1	0	0
11:00	3	0	0	0	5	0	0	3
11:15	1	0	0	0	4	0	0	1
11:30	10	0	0	0	10	0	0	0
11:45	4	0	0	0	2	0	0	0

Location: Main Plaza on 52nd St
Date 05/17/2023
Site Location B

	5/18/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
12:00	5	0	0	0	7	0	0	0
12:15	4	0	0	0	9	0	0	1
12:30	3	1	0	0	5	0	0	1
12:45	3	0	0	0	3	0	0	2
13:00	5	0	0	0	7	0	0	1
13:15	4	0	0	0	4	0	0	1
13:30	2	1	0	0	6	0	0	3
13:45	6	0	0	0	6	0	0	3
14:00	3	0	0	0	8	0	0	0
14:15	5	0	0	0	5	0	0	1
14:30	4	0	0	0	8	0	0	1
14:45	3	0	0	0	7	0	0	2
15:00	0	0	0	0	9	0	0	0
15:15	7	0	0	0	7	0	0	3
15:30	7	0	0	0	15	0	0	0
15:45	5	0	0	0	11	0	0	2
16:00	4	0	0	0	5	0	0	1
16:15	4	0	0	0	8	0	0	1
16:30	2	0	0	0	4	0	0	0
16:45	4	0	0	0	6	1	0	2
17:00	5	0	0	0	11	0	0	1
17:15	6	0	0	0	10	0	0	1
17:30	0	0	0	0	4	0	0	1
17:45	3	1	0	0	8	0	0	0
18:00	4	0	0	0	3	0	0	1
18:15	6	0	0	0	11	0	0	0
18:30	6	0	0	0	9	0	0	0
18:45	2	0	0	0	5	1	0	0
19:00	3	0	0	0	6	0	0	0
19:15	4	0	0	0	3	0	0	1
19:30	2	0	0	0	4	0	0	0
19:45	5	0	0	0	4	0	0	0
20:00	2	0	0	0	8	0	0	0
20:15	5	1	0	0	5	0	0	0
20:30	5	0	0	0	5	0	0	0
20:45	3	0	0	0	7	0	0	0
21:00	4	0	0	0	5	1	0	0
21:15	2	0	0	0	2	0	0	0
21:30	2	0	0	0	2	0	0	0
21:45	0	0	0	0	4	0	0	0
22:00	0	0	0	0	0	0	0	0
22:15	1	1	0	0	3	0	0	0
22:30	1	0	0	0	6	0	0	0
22:45	5	0	0	0	4	0	0	0
23:00	1	0	0	0	5	0	0	0
23:15	3	1	0	0	4	0	0	0
23:30	1	0	0	0	3	0	0	0
23:45	2	0	0	0	4	0	0	0

Location: Main Plaza on MLK
Date 05/17/2023
Site Location C

	5/23/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
0:00	0	0	0	0	0	0	0	0
0:15	0	0	0	0	1	0	0	0
0:30	1	0	0	0	0	0	0	0
0:45	1	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0
1:30	0	0	0	0	1	0	0	0
1:45	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0
2:15	1	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0
3:00	1	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0
3:30	0	1	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	1	0	0
4:45	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0
5:15	1	0	0	0	0	0	0	0
5:30	3	0	0	1	0	0	0	0
5:45	5	1	0	1	0	0	0	0
6:00	3	0	0	1	0	0	0	0
6:15	2	0	0	2	0	0	0	0
6:30	2	0	0	0	0	0	0	0
6:45	6	0	0	2	1	0	0	0
7:00	2	0	0	2	0	0	0	0
7:15	1	0	0	2	0	0	0	0
7:30	4	1	0	2	0	0	0	0
7:45	1	0	0	2	0	0	0	0
8:00	1	0	0	1	0	0	0	0
8:15	6	0	0	2	0	0	0	0
8:30	1	0	0	2	0	0	0	0
8:45	3	0	0	0	0	0	0	0
9:00	2	0	0	2	1	0	0	0
9:15	2	0	0	0	1	0	0	0
9:30	5	0	0	3	1	0	0	0
9:45	6	0	0	2	0	0	0	0
10:00	2	0	0	0	0	0	0	0
10:15	0	0	0	1	1	0	0	0
10:30	0	0	0	2	1	0	0	0
10:45	2	0	0	1	0	0	0	0
11:00	1	0	0	3	0	0	0	0
11:15	1	0	0	1	1	0	0	0
11:30	3	0	0	2	0	0	0	0
11:45	1	1	0	2	1	0	0	0
12:00	3	0	0	0	0	0	0	0
12:15	3	0	0	2	0	0	0	0
12:30	3	0	0	1	0	0	0	0
12:45	2	0	0	3	4	0	0	0
13:00	4	0	0	1	0	0	0	0
13:15	2	0	0	1	0	0	0	0
13:30	3	1	0	1	0	0	0	0
13:45	9	0	0	1	0	0	0	0
14:00	2	0	0	1	2	0	0	0
14:15	2	0	0	1	1	0	0	0
14:30	6	0	0	3	0	0	0	0
14:45	3	0	0	2	1	0	0	0
15:00	6	0	0	1	0	0	0	0

Location: Main Plaza on MLK
Date 05/17/2023
Site Location C

	5/23/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
15:15	3	0	0	1	0	0	0	0
15:30	2	0	0	2	0	0	0	0
15:45	2	0	0	2	0	0	0	0
16:00	2	0	0	3	0	0	0	0
16:15	1	0	0	1	1	0	0	0
16:30	4	0	0	3	3	0	0	0
16:45	1	0	0	1	1	0	0	0
17:00	2	0	0	1	1	0	0	0
17:15	3	0	0	2	0	0	0	0
17:30	2	0	0	1	0	1	0	0
17:45	6	0	0	0	0	0	0	0
18:00	5	0	0	3	0	0	0	0
18:15	2	0	0	0	0	0	0	0
18:30	3	0	0	0	1	1	0	0
18:45	6	1	0	0	0	0	0	0
19:00	7	0	0	0	0	0	0	0
19:15	4	0	0	0	0	0	0	0
19:30	1	0	0	0	0	0	0	0
19:45	5	0	0	0	2	0	0	0
20:00	2	0	0	0	0	0	0	0
20:15	0	0	0	0	1	0	0	0
20:30	2	0	0	0	0	0	0	0
20:45	1	0	0	0	1	0	0	0
21:00	1	0	0	0	0	0	0	0
21:15	2	1	0	0	0	1	0	0
21:30	3	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0
22:00	2	0	0	0	0	1	0	0
22:15	1	1	0	0	0	1	0	0
22:30	2	0	0	0	0	0	0	0
22:45	2	0	0	0	0	0	0	0
23:00	2	0	0	0	1	0	0	0
23:15	5	1	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0

Location: Main Plaza on MLK
Date 05/17/2023
Site Location C

	5/18/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
0:00	0	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0
1:00	0	0	0	0	1	0	0	0
1:15	0	0	0	0	0	0	0	0
1:30	0	0	1	0	1	0	0	0
1:45	0	0	0	0	0	0	0	0
2:00	1	0	0	0	1	0	0	0
2:15	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0
2:45	0	1	0	0	0	0	0	0
3:00	0	0	0	0	3	0	0	0
3:15	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	1	0	0
3:45	0	0	0	0	0	0	0	0
4:00	0	0	0	0	2	0	0	0
4:15	0	1	0	0	0	0	0	0
4:30	0	0	0	0	1	1	0	0
4:45	0	0	0	0	1	0	0	0
5:00	0	1	0	0	0	0	0	0
5:15	0	0	0	0	1	0	0	0
5:30	0	0	0	0	1	0	0	1
5:45	0	0	0	0	1	0	0	0
6:00	0	0	0	0	4	0	0	1
6:15	0	0	0	0	1	0	0	2
6:30	0	0	0	0	2	0	0	1
6:45	0	0	0	0	4	0	0	2
7:00	0	0	0	0	1	0	0	2
7:15	0	0	0	0	3	0	0	1
7:30	0	0	0	0	1	0	0	2
7:45	0	0	0	0	2	0	0	2
8:00	1	0	0	0	1	0	0	1
8:15	0	0	0	0	5	0	0	1
8:30	0	0	0	0	4	0	0	2
8:45	1	0	0	0	9	0	0	1
9:00	1	0	0	0	1	0	1	1
9:15	0	0	0	0	2	0	0	1
9:30	1	0	0	0	1	0	0	3
9:45	2	0	0	0	3	0	0	1
10:00	0	1	0	0	2	0	0	2
10:15	1	0	0	0	1	0	0	1
10:30	0	0	0	0	5	0	0	0
10:45	0	0	0	0	2	1	0	1
11:00	0	0	0	0	3	0	0	3
11:15	0	0	0	0	1	0	0	1
11:30	1	0	0	0	3	0	0	0
11:45	2	0	0	0	0	0	0	0
12:00	0	0	0	0	1	0	0	0
12:15	6	0	0	1	1	0	0	0
12:30	2	0	0	1	1	0	0	0
12:45	2	0	0	3	0	0	0	0
13:00	2	0	0	1	0	0	0	0
13:15	1	0	0	1	1	1	0	0
13:30	6	0	0	1	1	0	0	0
13:45	3	0	0	1	1	0	0	0
14:00	2	0	0	0	1	0	0	0
14:15	1	0	0	1	0	0	0	0
14:30	8	0	0	2	1	0	0	0
14:45	6	0	0	1	0	0	0	0
15:00	4	0	0	2	0	0	0	0

Location: Main Plaza on MLK
Date 05/17/2023
Site Location C

	5/18/2023							
	IN				OUT			
	Passenger Vehicle	Ambulance	Truck	Shuttle	Passenger Vehicle	Ambulance	Truck	Shuttle
15:15	4	0	0	1	0	0	0	0
15:30	5	0	0	3	0	0	0	0
15:45	6	0	0	2	0	0	0	0
16:00	3	0	0	1	2	0	0	0
16:15	6	1	0	1	1	0	0	0
16:30	2	1	0	2	0	0	0	0
16:45	7	0	0	1	2	0	0	0
17:00	4	0	0	1	0	0	0	0
17:15	4	0	0	1	0	0	0	0
17:30	3	0	0	1	0	0	0	0
17:45	3	1	0	1	0	1	0	0
18:00	1	0	0	1	1	0	0	0
18:15	6	0	0	0	0	0	0	0
18:30	3	1	0	1	0	1	0	0
18:45	3	0	0	0	0	1	0	0
19:00	4	0	0	0	0	0	0	0
19:15	2	0	0	0	2	0	0	0
19:30	2	0	0	0	1	0	0	0
19:45	2	0	0	0	1	0	0	0
20:00	4	0	0	0	0	0	0	0
20:15	5	0	0	0	2	0	0	0
20:30	2	0	0	0	3	0	0	0
20:45	2	0	0	0	1	0	0	0
21:00	2	0	0	0	1	0	0	0
21:15	0	0	0	0	0	0	0	0
21:30	2	0	0	0	0	0	0	0
21:45	2	0	0	0	0	0	0	0
22:00	0	1	0	0	0	0	0	0
22:15	4	0	0	0	0	0	0	0
22:30	2	0	0	0	0	1	0	0
22:45	4	0	0	0	0	1	0	0
23:00	2	0	0	0	0	0	0	0
23:15	1	0	0	0	0	0	0	0
23:30	2	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0

Location: South Lot on 52nd St
Date 05/17/2023
Site Location D

	5/17/2023				5/18/2023			
	IN		OUT		IN		OUT	
	Passenger Vehicle	Truck	Passenger Vehicle	Truck	Passenger Vehicle	Truck	Passenger Vehicle	Truck
0:00	0	0	1	0	0	0	2	0
0:15	0	0	2	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0
4:30	2	0	0	0	2	0	0	0
4:45	0	0	0	0	0	0	0	0
5:00	1	0	0	0	0	0	0	0
5:15	0	0	1	0	0	0	0	0
5:30	2	0	0	0	3	0	1	0
5:45	2	0	0	0	0	0	0	0
6:00	1	0	1	0	2	0	1	0
6:15	1	0	1	0	1	1	0	0
6:30	1	0	1	0	0	0	0	0
6:45	2	0	2	0	3	0	0	0
7:00	5	0	3	0	2	0	1	0
7:15	6	0	2	0	6	0	1	0
7:30	4	0	5	0	4	0	3	0
7:45	2	0	2	0	4	1	1	0
8:00	1	0	0	0	2	0	3	1
8:15	0	0	0	0	1	0	0	0
8:30	3	0	1	0	5	0	1	1
8:45	2	0	0	0	4	0	3	0
9:00	6	0	1	0	2	0	1	0
9:15	3	0	0	0	2	0	2	0
9:30	3	0	2	0	2	1	1	0
9:45	3	0	1	0	3	1	2	0
10:00	2	0	0	0	2	0	1	0
10:15	2	0	0	0	1	0	2	0
10:30	3	0	4	0	2	0	1	0
10:45	1	0	0	0	2	0	2	1
11:00	2	0	1	0	3	0	2	0
11:15	0	0	1	0	4	0	1	0
11:30	3	0	2	0	2	0	1	0
11:45	2	0	3	0	2	0	0	0
12:00	2	0	4	0	1	0	1	0
12:15	0	0	3	0	4	1	5	0
12:30	0	0	3	0	1	0	2	1
12:45	2	0	1	0	1	0	1	0
13:00	3	0	3	0	6	0	6	1
13:15	3	0	0	0	2	0	3	0
13:30	0	0	2	0	4	0	2	0
13:45	2	0	1	0	2	0	2	0
14:00	2	0	2	0	1	0	1	0
14:15	2	0	3	0	2	0	5	0
14:30	2	0	3	0	0	0	1	0
14:45	0	1	0	2	0	0	2	0
15:00	1	0	2	0	2	1	2	1
15:15	4	0	3	0	2	0	1	0
15:30	2	0	5	0	2	0	3	0
15:45	1	0	1	1	0	1	2	0
16:00	3	0	4	0	0	0	0	1
16:15	0	0	1	0	3	0	0	0
16:30	2	0	1	0	2	0	5	0
16:45	3	0	2	0	1	0	4	0
17:00	1	0	0	0	1	0	1	0
17:15	1	0	6	0	1	0	6	0
17:30	0	0	3	0	0	0	2	0
17:45	1	0	5	0	2	0	6	0

Location: South Lot on 52nd St
Date 05/17/2023
Site Location D

	5/17/2023			
	IN		OUT	
	Passenger Vehicle	Truck	Passenger Vehicle	Truck
18:00	0	0	0	0
18:15	0	0	3	0
18:30	0	0	1	0
18:45	2	0	1	0
19:00	0	0	1	0
19:15	0	0	1	0
19:30	1	0	1	0
19:45	0	0	1	0
20:00	0	0	0	0
20:15	1	0	1	0
20:30	0	0	2	0
20:45	1	0	0	0
21:00	1	0	0	0
21:15	0	0	0	0
21:30	0	0	0	0
21:45	1	0	1	0
22:00	0	0	0	0
22:15	2	0	0	0
22:30	1	0	0	0
22:45	0	0	1	0
23:00	1	0	0	0
23:15	0	0	2	0
23:30	0	0	0	0
23:45	0	0	2	0

	5/18/2023			
	IN		OUT	
	Passenger Vehicle	Truck	Passenger Vehicle	Truck
18:00	0	0	3	0
18:15	1	0	1	0
18:30	0	0	1	0
18:45	0	0	1	0
19:00	0	0	0	0
19:15	1	0	4	0
19:30	1	0	1	0
19:45	1	0	2	0
20:00	0	0	1	0
20:15	0	0	0	0
20:30	0	0	1	0
20:45	0	0	0	0
21:00	0	0	1	0
21:15	0	0	0	0
21:30	1	0	1	0
21:45	1	0	0	0
22:00	0	0	0	0
22:15	1	0	0	0
22:30	0	0	1	0
22:45	0	0	0	0
23:00	1	0	0	0
23:15	1	0	1	0
23:30	0	0	1	0
23:45	0	0	1	0

Location: Church Lot on West St
Date 05/17/2023
Site Location E

	5/17/2023	
	IN	OUT
0:00	0	0
0:15	0	0
0:30	0	0
0:45	0	0
1:00	0	0
1:15	0	0
1:30	0	0
1:45	0	0
2:00	0	0
2:15	0	0
2:30	0	0
2:45	0	0
3:00	0	0
3:15	0	0
3:30	0	0
3:45	0	0
4:00	0	0
4:15	0	0
4:30	0	0
4:45	0	0
5:00	0	0
5:15	0	0
5:30	0	0
5:45	0	0
6:00	0	0
6:15	0	0
6:30	0	0
6:45	3	0
7:00	2	0
7:15	1	0
7:30	1	0
7:45	3	0
8:00	1	0
8:15	2	0
8:30	3	0
8:45	1	0
9:00	0	0
9:15	0	0
9:30	1	0
9:45	0	0
10:00	1	0

	5/18/2023	
	IN	OUT
0:00	0	0
0:15	0	0
0:30	0	0
0:45	0	0
1:00	0	0
1:15	0	0
1:30	0	0
1:45	0	0
2:00	0	0
2:15	0	0
2:30	0	0
2:45	0	0
3:00	0	0
3:15	0	0
3:30	0	0
3:45	0	0
4:00	0	0
4:15	0	0
4:30	0	0
4:45	0	0
5:00	0	0
5:15	0	0
5:30	0	0
5:45	0	0
6:00	0	0
6:15	1	0
6:30	0	0
6:45	2	0
7:00	3	0
7:15	0	0
7:30	1	0
7:45	3	0
8:00	1	0
8:15	1	0
8:30	2	0
8:45	2	0
9:00	1	1
9:15	0	0
9:30	0	0
9:45	2	0
10:00	0	0

Location: Church Lot on West St
Date 05/17/2023
Site Location E

	5/17/2023			5/18/2023	
	IN	OUT		IN	OUT
10:15	0	0	10:15	0	0
10:30	0	0	10:30	0	0
10:45	0	0	10:45	0	0
11:00	0	0	11:00	0	0
11:15	0	0	11:15	0	0
11:30	0	0	11:30	0	1
11:45	0	0	11:45	0	0
12:00	0	0	12:00	0	2
12:15	0	0	12:15	0	0
12:30	0	1	12:30	0	0
12:45	1	0	12:45	0	0
13:00	0	2	13:00	0	1
13:15	0	0	13:15	0	0
13:30	0	0	13:30	0	0
13:45	0	0	13:45	0	0
14:00	0	1	14:00	0	0
14:15	0	0	14:15	1	0
14:30	0	0	14:30	0	0
14:45	0	0	14:45	0	1
15:00	0	1	15:00	0	2
15:15	0	2	15:15	0	0
15:30	0	1	15:30	0	3
15:45	0	4	15:45	0	0
16:00	0	1	16:00	0	3
16:15	0	2	16:15	0	0
16:30	0	0	16:30	0	1
16:45	0	2	16:45	0	0
17:00	0	0	17:00	0	0
17:15	0	1	17:15	0	0
17:30	0	0	17:30	0	1
17:45	0	0	17:45	0	0
18:00	0	0	18:00	0	0
18:15	0	1	18:15	0	1
18:30	0	1	18:30	0	1
18:45	0	0	18:45	0	0
19:00	0	0	19:00	0	1
19:15	0	0	19:15	0	0
19:30	0	0	19:30	0	0
19:45	0	0	19:45	0	0
20:00	0	0	20:00	0	0
20:15	0	0	20:15	0	0

Location: Church Lot on West St
Date 05/17/2023
Site Location E

	5/17/2023	
	IN	OUT
20:30	0	0
20:45	0	0
21:00	0	0
21:15	0	0
21:30	0	0
21:45	0	0
22:00	0	0
22:15	0	0
22:30	0	0
22:45	0	0
23:00	0	0
23:15	0	0
23:30	0	0
23:45	0	0

	5/18/2023	
	IN	OUT
20:30	0	0
20:45	0	0
21:00	0	0
21:15	0	0
21:30	0	0
21:45	0	0
22:00	0	0
22:15	0	0
22:30	0	0
22:45	0	0
23:00	0	0
23:15	0	0
23:30	0	0
23:45	0	0

Location: West Lot on 51st St
Date 05/17/2023
Site Location F

	5/17/2023			5/18/2023	
	IN	OUT		IN	OUT
0:00	0		0:00	0	
0:15	0		0:15	0	
0:30	0		0:30	0	
0:45	0		0:45	0	
1:00	0		1:00	0	
1:15	0		1:15	0	
1:30	1		1:30	0	
1:45	0		1:45	0	
2:00	0		2:00	1	
2:15	0		2:15	0	
2:30	0		2:30	0	
2:45	0		2:45	1	
3:00	1		3:00	2	
3:15	0		3:15	0	
3:30	0		3:30	0	
3:45	0		3:45	0	
4:00	0		4:00	0	
4:15	0		4:15	0	
4:30	0		4:30	0	
4:45	1		4:45	1	
5:00	3		5:00	3	
5:15	3		5:15	1	
5:30	4		5:30	3	
5:45	7		5:45	8	
6:00	6		6:00	10	
6:15	13		6:15	12	
6:30	13		6:30	15	
6:45	31		6:45	23	
7:00	9		7:00	7	
7:15	5		7:15	5	
7:30	2		7:30	9	
7:45	10		7:45	5	
8:00	3		8:00	2	
8:15	9		8:15	8	
8:30	7		8:30	8	
8:45	6		8:45	10	
9:00	6		9:00	2	
9:15	1		9:15	3	
9:30	3		9:30	3	
9:45	1		9:45	5	
10:00	3		10:00	2	

Location: West Lot on 51st St
Date 05/17/2023
Site Location F

	5/17/2023	
	IN	OUT
10:15	0	
10:30	2	
10:45	6	
11:00	2	
11:15	3	
11:30	3	
11:45	3	
12:00	1	
12:15	1	
12:30	1	
12:45	1	
13:00	1	
13:15	0	
13:30	1	
13:45	4	
14:00	0	
14:15	7	
14:30	14	
14:45	14	
15:00	2	
15:15	5	
15:30	0	
15:45	0	
16:00	1	
16:15	1	
16:30	1	
16:45	0	
17:00	1	
17:15	0	
17:30	0	
17:45	1	
18:00	0	
18:15	2	
18:30	2	
18:45	3	
19:00	3	
19:15	0	
19:30	0	
19:45	0	
20:00	1	
20:15	0	

	5/18/2023	
	IN	OUT
10:15	2	
10:30	2	
10:45	6	
11:00	1	
11:15	3	
11:30	0	
11:45	2	
12:00	0	
12:15	2	
12:30	0	
12:45	1	
13:00	1	
13:15	0	
13:30	2	
13:45	1	
14:00	3	
14:15	9	
14:30	6	
14:45	14	
15:00	1	
15:15	2	
15:30	1	
15:45	1	
16:00	1	
16:15	2	
16:30	1	
16:45	0	
17:00	1	
17:15	1	
17:30	0	
17:45	0	
18:00	1	
18:15	1	
18:30	4	
18:45	2	
19:00	0	
19:15	1	
19:30	0	
19:45	1	
20:00	0	
20:15	0	

Location: West Lot on 51st St
Date 05/17/2023
Site Location F

	5/17/2023	
	IN	OUT
20:30	0	
20:45	0	
21:00	1	
21:15	1	
21:30	1	
21:45	0	
22:00	0	
22:15	2	
22:30	2	
22:45	6	
23:00	4	
23:15	0	
23:30	0	
23:45	0	

	5/18/2023	
	IN	OUT
20:30	1	
20:45	0	
21:00	0	
21:15	0	
21:30	1	
21:45	1	
22:00	0	
22:15	1	
22:30	2	
22:45	5	
23:00	5	
23:15	0	
23:30	0	
23:45	0	

Location: West Lot on MLK
Date 05/17/2023
Site Location G

	5/17/2023				5/18/2023	
	IN	OUT			IN	OUT
0:00	0			0:00	1	
0:15	3			0:15	3	
0:30	1			0:30	0	
0:45	0			0:45	0	
1:00	1			1:00	0	
1:15	4			1:15	2	
1:30	2			1:30	1	
1:45	0			1:45	0	
2:00	0			2:00	0	
2:15	0			2:15	0	
2:30	0			2:30	0	
2:45	0			2:45	0	
3:00	1			3:00	0	
3:15	0			3:15	0	
3:30	0			3:30	1	
3:45	0			3:45	0	
4:00	0			4:00	0	
4:15	0			4:15	0	
4:30	0			4:30	0	
4:45	0			4:45	0	
5:00	0			5:00	1	
5:15	2			5:15	0	
5:30	0			5:30	0	
5:45	0			5:45	0	
6:00	1			6:00	1	
6:15	0			6:15	0	
6:30	0			6:30	0	
6:45	0			6:45	0	
7:00	2			7:00	0	
7:15	2			7:15	0	
7:30	5			7:30	10	
7:45	2			7:45	3	
8:00	2			8:00	1	
8:15	1			8:15	0	
8:30	1			8:30	1	
8:45	0			8:45	0	
9:00	0			9:00	0	
9:15	0			9:15	0	
9:30	0			9:30	0	
9:45	0			9:45	1	
10:00	0			10:00	0	

Location: West Lot on MLK
Date 05/17/2023
Site Location G

	5/17/2023			5/18/2023	
	IN	OUT		IN	OUT
10:15	0		10:15	0	
10:30	1		10:30	0	
10:45	0		10:45	1	
11:00	0		11:00	0	
11:15	0		11:15	0	
11:30	1		11:30	1	
11:45	1		11:45	1	
12:00	1		12:00	0	
12:15	0		12:15	0	
12:30	0		12:30	1	
12:45	0		12:45	0	
13:00	0		13:00	0	
13:15	0		13:15	3	
13:30	2		13:30	0	
13:45	1		13:45	0	
14:00	3		14:00	2	
14:15	3		14:15	5	
14:30	0		14:30	3	
14:45	8		14:45	6	
15:00	6		15:00	6	
15:15	4		15:15	6	
15:30	18		15:30	16	
15:45	2		15:45	7	
16:00	5		16:00	1	
16:15	7		16:15	7	
16:30	2		16:30	0	
16:45	2		16:45	2	
17:00	5		17:00	5	
17:15	3		17:15	6	
17:30	3		17:30	1	
17:45	3		17:45	1	
18:00	1		18:00	2	
18:15	1		18:15	1	
18:30	4		18:30	3	
18:45	3		18:45	2	
19:00	2		19:00	0	
19:15	6		19:15	3	
19:30	5		19:30	1	
19:45	2		19:45	3	
20:00	3		20:00	0	
20:15	2		20:15	0	

Location: West Lot on MLK
Date 05/17/2023
Site Location G

	5/17/2023	
	IN	OUT
20:30	2	
20:45	1	
21:00	1	
21:15	2	
21:30	1	
21:45	0	
22:00	0	
22:15	1	
22:30	0	
22:45	1	
23:00	3	
23:15	10	
23:30	12	
23:45	5	

	5/18/2023	
	IN	OUT
20:30	3	
20:45	1	
21:00	0	
21:15	0	
21:30	0	
21:45	0	
22:00	0	
22:15	1	
22:30	1	
22:45	1	
23:00	5	
23:15	8	
23:30	10	
23:45	3	

Location: West Lot on 47th St
Date 05/17/2023
Site Location H

	5/17/2023				5/18/2023	
	IN	OUT			IN	OUT
0:00		1		0:00		1
0:15		0		0:15		0
0:30		0		0:30		0
0:45		1		0:45		0
1:00		0		1:00		0
1:15		0		1:15		0
1:30		1		1:30		0
1:45		0		1:45		0
2:00		0		2:00		1
2:15		0		2:15		0
2:30		0		2:30		0
2:45		0		2:45		0
3:00		0		3:00		2
3:15		0		3:15		0
3:30		0		3:30		0
3:45		0		3:45		0
4:00		0		4:00		0
4:15		0		4:15		0
4:30		0		4:30		0
4:45		0		4:45		0
5:00		0		5:00		0
5:15		0		5:15		0
5:30		0		5:30		0
5:45		1		5:45		1
6:00		0		6:00		0
6:15		0		6:15		0
6:30		0		6:30		0
6:45		0		6:45		0
7:00		0		7:00		1
7:15		1		7:15		1
7:30		2		7:30		0
7:45		0		7:45		1
8:00		0		8:00		0
8:15		0		8:15		0
8:30		0		8:30		0
8:45		0		8:45		0
9:00		0		9:00		1
9:15		0		9:15		0
9:30		0		9:30		1
9:45		0		9:45		0
10:00		0		10:00		0

Location: West Lot on 47th St
Date 05/17/2023
Site Location H

	5/17/2023			5/18/2023	
	IN	OUT		IN	OUT
10:15		0	10:15		0
10:30		0	10:30		1
10:45		0	10:45		0
11:00		0	11:00		0
11:15		0	11:15		0
11:30		3	11:30		1
11:45		0	11:45		0
12:00		0	12:00		1
12:15		0	12:15		0
12:30		0	12:30		0
12:45		1	12:45		1
13:00		0	13:00		1
13:15		0	13:15		0
13:30		0	13:30		0
13:45		0	13:45		0
14:00		1	14:00		1
14:15		0	14:15		1
14:30		1	14:30		0
14:45		2	14:45		3
15:00		3	15:00		1
15:15		2	15:15		7
15:30		4	15:30		3
15:45		4	15:45		3
16:00		4	16:00		4
16:15		3	16:15		3
16:30		5	16:30		2
16:45		1	16:45		3
17:00		1	17:00		4
17:15		1	17:15		0
17:30		5	17:30		3
17:45		2	17:45		1
18:00		2	18:00		2
18:15		1	18:15		2
18:30		3	18:30		2
18:45		0	18:45		0
19:00		1	19:00		2
19:15		4	19:15		2
19:30		1	19:30		1
19:45		1	19:45		4
20:00		0	20:00		0
20:15		0	20:15		0

Location: West Lot on 47th St
Date 05/17/2023
Site Location H

	5/17/2023	
	IN	OUT
20:30		0
20:45		0
21:00		1
21:15		1
21:30		0
21:45		0
22:00		0
22:15		0
22:30		0
22:45		0
23:00		0
23:15		0
23:30		5
23:45		2

	5/18/2023	
	IN	OUT
20:30		0
20:45		0
21:00		0
21:15		0
21:30		0
21:45		0
22:00		0
22:15		0
22:30		1
22:45		0
23:00		0
23:15		1
23:30		3
23:45		2

UCSF BCH Oakland NHB Project

Appendix TRANS-B: Trip Generation Estimates

FEHR PEERS

1. Population Data from Blue Cottage											
					Patients			Visitors			
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER	Total
2022 Total Daily	300	1,190	150	20	111	588	86	278	882	172	3,777
2022 Peak Hourly	225	1,000	135	20	111	73	11	35	110	22	1,741
2032 Total Daily	332	1,323	166	22	138	769	89	345	1,154	178	4,516
2032 Peak Hourly	249	1,133	149	22	138	96	11	43	144	22	2,007
2022-2032 % increase, Total Daily	11%	11%	11%	10%	24%	31%	3%	24%	31%	3%	20%
2022-2032 % increase, Peak Daily	11%	13%	10%	10%	24%	32%	0%	24%	32%	0%	15%

Notes
Population data from Blue Cottage accounts for following:
15% outpatient virtual visits
10% staff working remotely

2. Driving/Parking Characteristics										
					Patients			Visitors		
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER
% Drive Alone	100%	79%	79%	100%	0%	95%	0%	95%	0	95%
% Carpool	0%	5%	5%		0	0	0	0.0	0.0	0.0
Person per Carpool	1.0	2.4	2.4	1.0	1.0	1.0	1.0	1.8	1.0	1.8
% On-street Parking	0	32%	32%	0%	27%	27%	27%	27%	27%	27%
Trips per Day per Person	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0	2.0
%Pick-Up/Drop Off	1%	1%	1%	1%	8%	8%	8%	8%	8%	8%

Notes
Assume all physicians and vendors drive alone and park on-site.
Staff characteristics based on 2022 survey.
Assume students characteristics same as staff.
Patients and visitors characteristics based on 2021 survey.
Drive alone and carpool mode splits combined for patients and visitors.
Zero trips for inpatients, assume counted with inpatient visitors.
Zero trips for outpatient visitors, assume counted with outpatients.

3. Existing Daily Motor Vehicle Trip Generation Estimate

					Patients			Visitors				
	Physicians	**Staff**	**Students**	**Vendors**	**Inpatient**	**Outpatient**	**ER**	**Inpatient**	**Outpatient**	**ER**	**Other**	**Total**
Parking Vehicle Trips	732	2,370	299	49	0	1,121	0	529	0	328		5,427
On-Street Trips	0	758	96	0	0	303	0	143	0	89		1,388
Site Trips	732	1,611	203	49	0	818	0	386	0	239		4,039
Other												
Drop off/Rideshare	9	19	2	1	0	131	0	62	0	38		262
Trucks											30	30
Ambulances											20	20
Shuttles											160	160
Subtotal												472
Total Trip Generation												5,899
On-Street												1,388
On-Site												4,511

4. Validation

Estimated On-site Daily Trip Generation	4,511
Observed On-Site Daily Trip Generation (May 2023)	4,590
% Difference	-1.7%

5. Existing Daily Trip Generation Estimate

					Patients			Visitors				
	Physicians	**Staff**	**Students**	**Vendors**	**Inpatient**	**Outpatient**	**ER**	**Inpatient**	**Outpatient**	**ER**	**Other**	**Total**
Existing Total Daily Trip Generation	741	2,389	301	49	0	1,252	0	591	0	366	210	5,899
Trip Generation Rate	2.47	2.01	2.01	2.47	0.00	2.13	0.00	2.13	0.00	2.13	0.06	
2032 Total Daily Trip Generation	820	2,656	333	54	0	1,637	0	734	0	379	251	6,865
% Increase	11%	11%	11%	10%		31%		24%		3%	20%	16%

6. Daily and Peak Hour Trip Generation Estimates							
		AM Peak Hour (7:30 to 8:30 AM)			PM Peak Hour (4:00 to 5:00 PM)		
	Daily	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Existing	5,900	317	149	466	81	354	435
2032	6,860	369	173	542	94	412	506
Project	**960**	**52**	**24**	**76**	**13**	**58**	**71**
% Increase	16%	16%	16%	16%	16%	16%	16%

Based on the following per the 2023 Driveway Counts:

AM peak hour as percent of daily	7.9%
PM peak hour as percent of daily	7.4%
AM In/Out Split	0.68/0.32
PM In/Out Split	0.19/0.81

UCSF BCH Oakland NHB Project

Appendix TRANS-C: Parking Demand Estimates

FEHR PEERS

1. Population Data from Blue Cottage

					Patients			Visitors			
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER	Total
2022 Total Daily	300	1,190	150	20	111	588	86	278	882	172	3,777
2022 Peak Hourly	225	1,000	135	20	111	73	11	35	110	22	1,741
2032 Total Daily	332	1,323	166	22	138	769	89	345	1,154	178	4,516
2032 Peak Hourly	249	1,133	149	22	138	96	11	43	144	22	2,007
2022-2032 % increase, Total Daily	11%	11%	11%	10%	24%	31%	3%	24%	31%	3%	20%
2022-2032 % increase, Peak Daily	11%	13%	10%	10%	24%	32%	0%	24%	32%	0%	15%

Notes

Population data from Blue Cottage accounts for following:
- 15% outpatient virtual visits
- 10% staff working remotely

2. Driving/Parking Characteristics

					Patients			Visitors		
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER
% Drive Alone	100%	79%	79%	100%	0%	95%	0%	95%	0	95%
% Carpool	0%	5%	5%	0%	N/A	N/A	N/A	N/A	N/A	N/A
Person per Carpool	1.0	2.4	2.4	1.0	1.0	1.0	1.0	1.8	1.0	1.8
% Parking On-street	0	32%	32%	0%	27%	27%	27%	27%	27%	27%

Notes

Assume all physicians and vendors drive alone and park on-site.
Staff characteristics based on 2022 survey.
Assume students characteristics same as staff.
Patients and visitors characteristics based on 2021 survey.
Drive alone and carpool mode splits combined for patients and visitors.
Zero trips for inpatients, assume counted with inpatient visitors.
Zero trips for outpatient visitors, assume counted with outpatients.

3. Existing Peak Parking Estimates

					Patients			Visitors			
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER	Total
Peak Parking Demand	225	816	110	20	0	70	0	18	0	12	1,271
Peak On-street Demand	0	261	35	0	0	18	0	5	0	3	323
Peak On-site Demand	225	555	75	20	0	51	0	13	0	9	**948**
Total Demand Rate	1.00	0.82	0.82	1.00	0.00	0.95	0.00	0.53	0.00	0.53	0.73
On-street Demand Rate	0	0.26	0.26	0.00	0.00	0.25	0.00	0.14	0.00	0.14	0.19
On-site Demand Rate	1.00	0.55	0.55	1.00	0.00	0.70	0.00	0.39	0.00	0.39	0.54

4. Validation	
Estimated Peak On-Site Parking Demand	948
Observed Peak On-Site Parking Demand (May 2023)	935
% Difference	1.4%

5. Estimated 2032 Peak Parking Demand					Patients			Visitors			
	Physicians	Staff	Students	Vendors	Inpatient	Outpatient	ER	Inpatient	Outpatient	ER	Total
On-street Parking Demand	0	296	39	0	0	24	0	6	0	3	368
On-site Parking Demand	249	629	83	22	0	67	0	17	0	9	1,075
Total	249	925	122	22	0	91	0	23	0	12	1,443

6. Estimated Parking Increases	Existing	2032	Net Increase	% Increase
On-site	948	1,075	127	13.4%
On-Street	323	368	45	14.1%
Total	1,271	1,443	172	13.6%

Appendix WSE

Water Supply Evaluation

Water Supply Evaluation for the UCSF Benioff Children's Hospital Oakland New Hospital Building Project

Oakland, CA

October 2023
EKI C30100.00

Water Supply Evaluation

UCSF Benioff Children's Hospital Oakland New Hospital Building Project
University of California - San Francisco

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

FIGURES

TABLES

APPENDICES

1 INTRODUCTION

Included herein is a water supply evaluation (WSE) in support of the proposed University of California – San Francisco (UCSF) Benioff Children's Hospital (BCH) Oakland New Hospital Building Project ("Proposed Project"; **Figure 1**). The Proposed Project site consists of an approximate 5.74-acre portion of the 11-acre UCSF BCH Oakland campus, located in the City of Oakland, California (ESA, 2023a).

The Proposed Project includes the construction of a new hospital building and parking structure, renovation of existing buildings, and demolition and/or removal of other existing buildings located on the campus. The planned improvements will address seismic safety requirements and meet other regulatory requirements and industry standards for contemporary hospitals, increase inpatient beds, accommodate modern technologies, and enhance functionality and efficiency at the campus site (ESA, 2023a). A detailed site plan for the Proposed Project is included in **Appendix A**. The Proposed Project is located within the East Bay Municipal Utility District (EBMUD or District) service area and EBMUD will remain the water service provider for the Proposed Project (**Figure 2**).

The purpose of this WSE is to evaluate whether the identified water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the Proposed Project, during normal and dry hydrologic years over a 20-year time horizon. More specifically, this WSE evaluates supply and demand for the Proposed Project, as well as the for the entire District, under current and future (2045) normal and dry hydrologic scenarios.

The information contained in this WSE is based primarily on EBMUD's 2020 Urban Water Management Plan (2020 UWMP), except where updated with relevant water demand and supply reliability information from the Eastern San Joaquin Groundwater Authority (ESJGWA), the California State Water Resources Control Board (SWRCB), and other information provided by EBMUD.

This WSE concludes that demands associated with the Proposed Project were accounted for within the projected demands included in EBMUD's 2020 UWMP and will not affect water supply reliability within EBMUD's service area. Based on currently available information and conservative estimates of the projected demand of the Proposed Project, EBMUD should be able to meet all future demands within its existing EBMUD service area, inclusive of the Proposed Project in all hydrologic years (normal, single-dry, multi-dry) through 2045. In addition, as described herein and in EBMUD's 2020 UWMP, additional water supplies to improve supply reliability are currently being explored.

Legend

Project Boundary

Country Boundary

N

0 250 500

Feet

Abbreviations

"UCSF" = University of California - San Francisco

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 5 October 2023.

Path: X:\C30100\Maps\2023\10\Fig1_ProjectSiteBoundary_2023_10_05.mxd

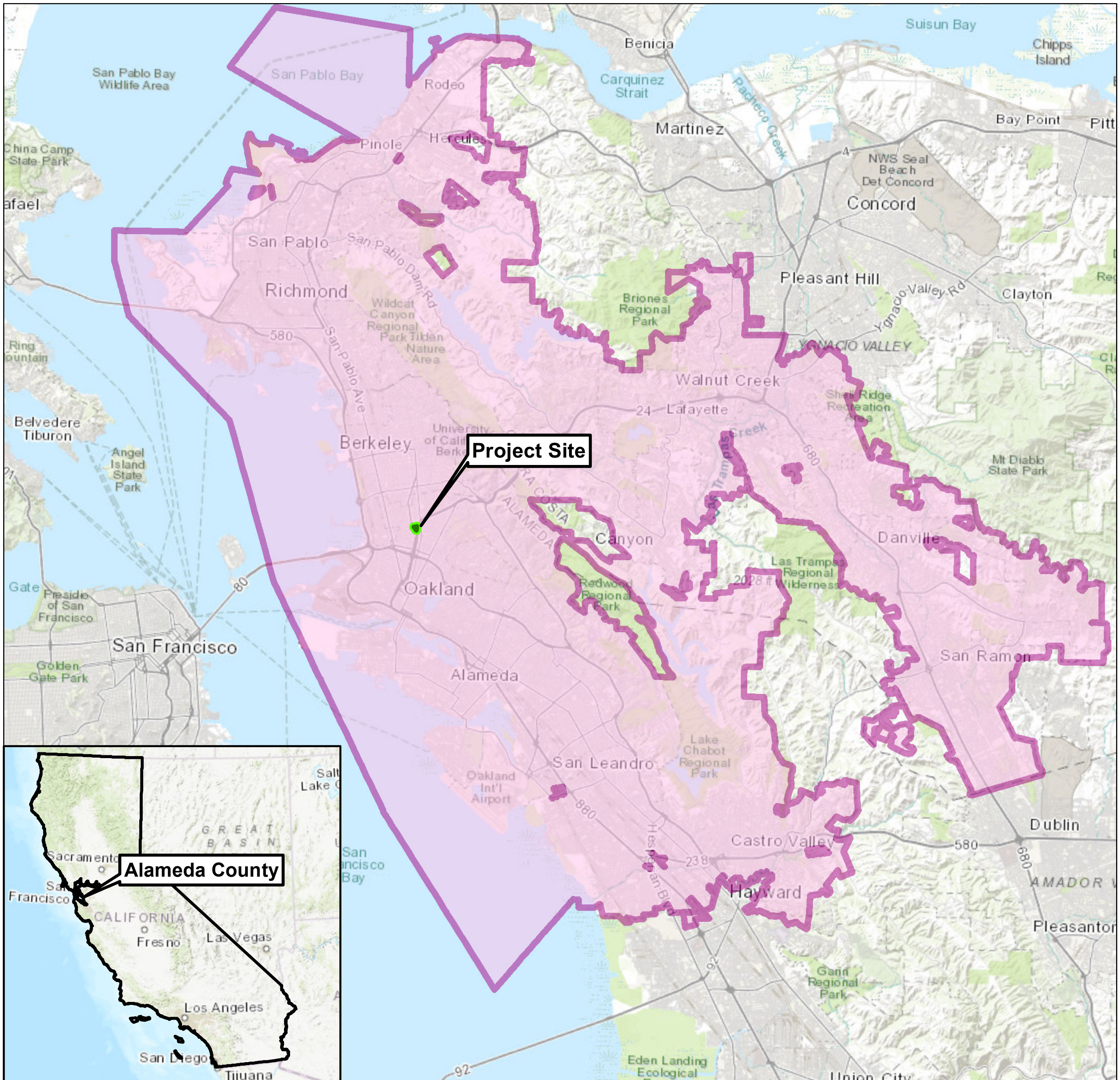
Project Site and Boundary

UCSF Benioff Children's Hospital
Oakland New Hospital Building

Oakland, CA
October 2023
EKI C30100.00

eki environment & water

Figure 1



Legend

- Project Boundary
- East Bay Municipal Utility District

N

0 5 10

(Scale in Miles)

Abbreviations

"UCSF" = Univeristy of California - San Francisco

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 5 October 2023.

Project Location

UCSF Benioff Children's Hospital
Oakland New Hospital Building

Oakland, CA
October 2023
EKI C30100.00

Figure 2

Path: X:\C30100\Maps\2023\10\Fig2_ProjectLocation_2023_10_05.mxd

2 GENERAL OUTLINE FOR THE PREPARATION OF A WATER SUPPLY EVALUATION

In 2015, the City of Oakland certified the Children's Hospital and Research Center Oakland Campus Master Plan Project Final Environmental Impact Report (2015 CHRCO CMP Project FEIR). The Proposed Project is conceptually the same as the Phase 2 development analyzed in the 2015 CHRCO CMP Project FEIR for the portion of the campus located south of 52nd Street but includes some improvements (ESA, 2023a). As such, UCSF, as the lead agency, is preparing a new Environmental Impact Report (EIR). Although Senate Bill (SB) 610 requirements for a Water Supply Assessment (WSA) do not specifically apply to USCF, UCSF has voluntarily elected to prepare this WSE as a WSA-equivalent document, to determine and demonstrate the sufficiency of EBMUD's water supplies to satisfy the demand of the Proposed Project. This WSE has been prepared to be parallel and consistent with the requirements for a WSA per California Water Code (CWC) sections 10910 through 10915.

The primary purpose of this WSE is to evaluate whether the identified water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the Proposed Project, during normal and dry hydrologic years for a 20-year planning horizon.[1] More specifically, this WSE includes:

- A description and analysis of the current water demand at the UCSF BCH Oakland campus and projected future water demands of the campus following the completion of the Proposed Project through the year 2045;
- A description and analysis of the historical and current water demands within EBMUD's service, and projected future water demands for EBMUD's service area through the year 2045;
- A description and analysis of the current and projected future water supplies for EBMUD's service area through the year 2045; and
- A comparison of the water supplies and demands for EBMUD's service area, including the projected water demands associated with the Proposed Project.

[1] The CWC specifies that a WSA must look at supplies and demand on a 20-year horizon (i.e., to 2043), but given the available data, this WSE looks beyond that to 2045.

3 PROJECT DESCRIPTION

The Proposed Project site consists of an approximate 5.74-acre portion of the 11-acre UCSF BCH Oakland campus site, within the City of Oakland, California with Assessor Parcel Numbers (APNs) of 14-1205-19-1, 14-1204-14-5, and 14-1204-15 (ESA, 2023a). The Proposed Project site is located south of 52nd Street, between Martin Luther King Jr. Way and State Route 24 (ESA, 2023a; **Figure 1**).

The Proposed Project would include the construction of a 326,654 square-feet (sq ft), 8-story above grade hospital building plus a full basement; an approximately 150,000 sq ft, 370-stall, 5-story parking structure with a 7,500 sq ft rooftop helistop; a 6,100 sq ft site loading dock building; approximately 30,000 sq ft of renovation and/or structural retrofitting of existing buildings within the Proposed Project site; and a variety of transportation, infrastructure and landscape improvements. As part of the Proposed Project, approximately 110,697 sq ft of temporary and/or permanent buildings and structures would be either demolished or relocated off-site (ESA, 2023a; 2023b; 2023c; 2023d; **Appendix A**). Several structures will remain as part of the Proposed Project, including the Patient Tower (105,371 sq ft), Diagnostics and Treatment (D&T) Center and Cardiac Catheterization Lab (45,958 sq ft), Central Utility Plant (12,217 sq ft), cafeteria (7,779 sq ft), Western Addition (7,715 sq ft), and Chiller Building (1,050 sq ft; **Appendix A**).

The new hospital building will include the following uses: 192,409 sq ft for inpatient hospital use, including 128 inpatient hospital beds; 3,837 sq ft for medical support services; 30,333 sq ft for non-medical general support services; 95,234 sq ft for building infrastructure, circulation, and exterior skin;[2] and 4,841 sq ft for transportation, storage, and loading (ESA, 2023b; 2023c; 2023d). **Table 1** includes a list and descriptions of the new land use types included in the Proposed Project.

[2] Water demands for the building infrastructure, circulation, and exterior skin portions of the new hospital building are considered negligible and are not included in this WSE.

Table 1

Proposed Project Land Use Summary

UCSF BCH Oakland New Hospital Building, Oakland, California

Building Land Use	Land Use	Area (sq ft)	Description
New Construction (a)			
New Hospital Building			
Inpatient Hospital Use	Hospital	192,409	Inpatient services, including NICU and PICU; acute care; respiratory therapy; and physical/occupational/speech therapy
Building Infrastructure, Circulation, and Exterior Skin	Infrastructure	95,234	General building infrastructure, circulation, and exterior skin
General and Clinical Support Services	Office	30,333	Central sterile processing department, biomedical engineering support services, inpatient pharmacy, resident and fellow support services, bed storage and repair, facilities management/engineering, security department, materials management, environmental services, and mailroom
Transportation, Storage, and Loading Dock	O&M	4,841	Transport/lift, emergency food and water storage, and loading dock
Medical Support Services	Medical	3,837	Medical equipment processing and storage; morgue and autopsy
Parking Garage Building	Parking	150,000	Five-story parking garage
Rooftop Helistop Structure	Rooftop Helistop	7,500	Located on top of parking garage
Site Loading Dock Building	O&M	6,100	To be utilized after existing dock is demolish and prior to completion of permanent dock
Total New Construction Area		**490,254**	
Existing Structures (b)			
Patient Tower	Medical Office	105,371	Five-story medical office
D&T Center, Cardiac Catheterization Lab	Medical Office	45,958	Three-story D&T center, lab and medical office
Central Utility Plant	Infrastructure	12,217	Two-story utilities plant
Cafeteria	Restaurant	7,779	Two-story cafeteria
Western Addition	Hospital	7,715	Three-story hospital building
Chiller Building	Infrastructure	1,050	One-story chiller building constructed in 2022
Total Existing Structure Area		**180,090**	
Planned Demolition/Removal (b)			
B/C Wing	Medical Office	33,510	Three-story hospital building
A/B Wing	Medical Office	45,177	Two-story hospital building
Bruce Lyon Memorial Research Laboratory and Addition	Medical Office	17,070	Two-story research laboratory
Temporary Trailers	Office	9,980	Five separate trailers including administration, social services, offices, and facilities uses
Hospital Loading Dock	O&M	637	Loading dock
Helistop Structure	Rooftop Helistop	4,323	Helistop structure
Total Demolition/Removal Area		**110,697**	
Total Net Project Area		**559,647**	

Abbreviations:

"BCH" = Benioff Children's Hospital
"D&T" - Diagnostic and Treatment
"ESA" = Environmental Science Associates
"NICU" - neonatal intensive care unit
"O&M" = Operation and Maintenance
"PICU" - pediatric intensive care unit
"R&D" = Research and Development
"sq ft" = square feet
"UCSF" = University of California, San Francisco

Table 1

Proposed Project Land Use Summary

UCSF BCH Oakland New Hospital Building, Oakland, California

Notes:

(a) New construction land use information for the rooftop helistop structure and parking garage per Reference 1, the site loading dock building, temporary trailers, and helistop structure square footages per Reference 4, and all others per Reference 2. Full buildout is expected to be completed by 2030.

(b) Existing and planned demolition/removal land use information per Reference 3.

References:

1. ESA, 2023a. Request for Information Form, provided by ESA on 12 July 2023.
2. ESA, 2023b. NHB Land Use Program/Space Summary Table, provided by ESA on 7 August 2023.
3. ESA, 2023c. Notice of Preparation of Environmental Impact Report, Notice of Public Scoping Meeting, UCSF Benioff Children's Hospital Oakland New Hospital Building, dated 22 May 2023.
4. ESA, 2023d. Information provided by ESA on 2 October 2023.

4 PROJECT WATER DEMAND

The Proposed Project would comply with the applicable University of California Policy on Sustainable Practices, as well as meet CalGreen and City of Oakland Green Building Ordinance "Sustainable Green Building Requirements for Private Development." The City of Oakland has adopted green building standards and water efficient landscaping ordinances consistent with previous versions of the CalGreen building standards and the California Model Water Efficient Landscape Ordinance (MWELO). As part of state requirements, all new developments must comply with these efficiency standards. As such, the Proposed Project is expected to include a number of water-efficient features, including, but not limited to:

- Use of low-flow lavatory faucets, kitchen faucets, toilets, and urinals in accordance with CalGreen Code; and
- Inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in accordance with MWELO.

As described below, annual water demand for the Proposed Project was estimated using various literature sources. Proposed Project demands are separated into new construction, existing structures, and planned demolition/removal. **Table 2** includes a summary of the water demand projections associated with the proposed land uses under the Proposed Project. Construction of the Proposed Project would begin in Summer 2024 and be completed by early 2031, with the exception of renovations to existing building which would extend into early 2033 (ESA, 2023b).

4.1 New Construction

The Proposed Project consists of several new developments, including a hospital building with a variety of associated water demands and a parking garage with a rooftop helistop. Sections 4.1.1 through 4.1.7 describe the water demands associated with each use type for the new construction.

4.1.1 Inpatient Hospital Use

The proposed new hospital building will include approximately 128 inpatient beds upon buildout (ESA, 2023c).[3] The water demand per inpatient hospital bed is estimated as 350 gallons per day per inpatient hospital bed (GPD/bed), based on information from the St. Joseph's Medical Center WSA (Morton & Pitalo, Inc, 2022). Based on the review of hospital data from other sources, the water demand per inpatient hospital bed of 350 GPD/bed is consistent with other literature

[3] Under the Proposed Project, 95 existing inpatient beds will be relocated from the existing Patient Tower and D&T Building to the proposed new hospital building. Accordingly, the water use associated with the beds that would be relocated to the new hospital buildings are discounted from the existing buildings water demand under Section 4.2.

sources.[4] Based on the demand factor identified above, the total estimated use for the inpatient hospital portion of the new hospital building by full buildout is estimated to be 50 acre-feet per year (AFY).

4.1.2 Medical Support Services Use

The total building square footage for outpatient and medical office use is approximately 3,837 sq ft (ESA, 2023c). The water demands for outpatient and medical office use are estimated based on the medical/dental demand factor of 0.17 GPD/sq ft based on information in the 2020 City of Ventura Water Demand Factor Study (City of Ventura, 2020). Based on the demand factor identified above, the total estimated medical office use for the new hospital building by full buildout is estimated to be 0.72 AFY.

4.1.3 General and Clinical Support Service Use

The Proposed Project includes 30,333 sq ft of non-medical public and administrative office use (ESA, 2023c; 2023d). Water demands for non-medical public and administrative office use are estimated based on an office demand factor of 0.055 GPD/sq ft per the Genentech Campus Master Plan Updated Draft Environmental Impact Report (Genentech, 2019). The resultant water demand associated with the non-medical public and administrative office use portion of the new hospital building by full buildout is estimated to be 1.9 AFY.

4.1.4 Transportation, Storage, and Loading Dock and Site Loading Dock Building Uses

The Proposed Project includes a 6,100 sq ft site loading dock building for hospital loading activities after the demolition of the existing loading dock and prior to the completion of the permanent loading dock. When also accounting for the 3,537 sq ft permanent loading dock attached to the new hospital building, 915 sq ft for transport/lift and 389 sq ft for emergency food and water storage area, this would amount to a total of approximately 10,941 sq ft. The site loading dock may remain and continue to be used as a supplemental facility (ESA, 2023a; 2023d).

The water demands for the loading docks and related uses are estimated based on a warehouse/storage demand factor of 0.0093 GPD/sq ft per the US Energy Information Administration (USEIA) Water Consumption in Large Buildings Summary (USEIA, 2012). The water demand associated with the loading dock and other uses is estimated to be 0.11 AFY at full buildout.

[4] Inpatient hospital use demand for the Proposed Project was compared to the hospital/assisted living demand factor from Irvine Ranch Water District based on information in the 2020 City of Ventura Water Demand Factor Study (City of Ventura, 2020). Based on the study, the hospital/assisted living demand factor is 230 gallons per day per thousand square feet (GPD/ksf). If this demand factor were applied to the inpatient hospital area (192,409 sq ft including both Inpatient Nursing and Support Services and D&T areas [ESA, 2023c]), demands would be estimated as 49.6 AFY.

4.1.5 Parking Garage Building and Rooftop Helistop Structure Water Use

The Proposed Project includes an approximately 150,000 sq ft, five-story parking garage with a 7,500 sq ft helistop landing structure on the 5th level deck (ESA, 2023a; 2023b). Water use associated with this space is anticipated to be minimal, limited to cleaning of the facility. For purposes of this WSE, it is assumed that the garage will be cleaned 12 times per year and that 0.02 gallons per sq ft will be used per each cleaning event (City of Los Angeles Bureau of Engineering, 2012). Thus, it is estimated that by full buildout 0.12 AFY will be used for the purposes of cleaning the parking garage and rooftop helistop structure.

4.1.6 Total New Construction Water Use

Based on the above calculations and assumptions, total indoor water use for the new hospital building, parking garage, and loading dock facilities is estimated to be approximately 53 AFY at full buildout.

4.2 Existing Structures

Six buildings will remain in place as part of the Proposed Project, including the Patient Tower, D&T Center and Cardiac Catheterization Lab, the Cafeteria, the Western Addition, the Central Utility Plant, and the Chiller Building. The following sections describe the estimated water demands associated with each use type for the existing buildings.[5]

Based on metered billing data provided by EBMUD, existing water use at the Proposed Project site ranged from 2.5 AFY to 4.5 AFY over the last five years and averaged 3.4 AFY (EBMUD, 2023c). This data appeared to be significantly lower than what would be expected at an active hospital building and is likely not capturing all recent water use at the Proposed Project site. Additionally, the metered billing data was not separated between buildings planned for demolition and existing structures, making it impossible to calculate water use that would be expected to remain on site and water use that would be removed along with the demolished buildings. This WSE therefore analyzes water use for the existing structures and structures planned for demolition (see Section 4.5) based on the conservative estimates of demands described below, as well as to maintain consistency with new construction demand calculations.

4.2.1 Medical Office Use

The total building square footage for the Patient Tower, Western Addition, D&T Center, and Cardiac Catheterization Lab is 159,044 sq ft. 35,782 sq ft is estimated to be used as medical office use.[6] Water demands for the medical office portion of the Patient Tower, Western Addition, and

[5] It is assumed that the water demand associated with the Central Utility Plant and Chiller Building are negligible and are thus not evaluated in this WSE.

[6] The medical office use sq ft for the existing structures was estimated by applying the hospital bed per sq ft ratio from the new hospital building (1,503 sq ft / bed) to the number of hospital beds in the existing structures (123,262 sq ft), and subtracting that from the total Patient Tower, Western Addition, D&T Center, and Cardiac Lab sq ft (159,044 sq ft), for a total of 35,782 sq ft of medical office use.

D&T Center are estimated based on the Medical/Dental demand factor of 0.17 GPD/sq ft per the 2020 City of Ventura Water Demand Factor Study (City of Ventura, 2020). Based on the demand factor identified above, the total estimated medical office use for the existing structures as part of the Proposed Project is estimated to be 9.2 AFY.

4.2.2 Hospital Use

Under the Proposed Project, the existing buildings would contain a total of 82 hospital beds.[7] The water demand per inpatient hospital bed is estimated as 350 GPD/bed (Morton & Pitalo, Inc, 2022). Based on the inpatient hospital bed demand factor identified above, the total estimated use for the hospital portion of the existing structures is estimated to be 32 AFY.

4.2.3 Cafeteria

The total square footage for the cafeteria is 7,779 sq ft. Water demands for the cafeteria are estimated based on a demand factor of 0.075 GPD/sq ft per the USEIA 2012 Commercial Buildings Energy Consumption Survey for water consumption in large buildings (USEIA, 2012). Based on the above land use and demand factor, total water demand for the cafeteria is estimated to be 0.66 AFY.

4.2.4 Total Existing Structure Demand

Based on the above calculations and assumptions, total indoor water use for the existing structures on the Proposed Project site to remain under the Proposed Project is estimated to be 42 AFY.

4.3 Landscape Irrigation Use

The projected water demand for the landscaped area included as part of the Proposed Project was estimated based on the Maximum Applied Water Allowance (MAWA; DWR, 2015). The MWELO requires that the annual estimated total water use for landscape irrigation does not exceed the MAWA (DWR, 2015). As shown below, the MAWA is calculated based on the regional reference evapotranspiration rate, an evaporation adjustment factor, the total landscaped area, and the area of "special landscaped area."[8] Water use for the Proposed Project landscaping irrigation has been conservatively assumed to be equal to the MAWA, which is the upper limit of annual applied water for established landscaped areas.

The MAWA is calculated using the following equation:

$$\text{MAWA} = \text{ETo} \times [(\text{ETAF} \times \text{LA}) + (1\text{-ETAF}) \times \text{SLA}]$$

[7] As discussed above, 95 existing hospital beds will be relocated to the new hospital building as part of the Proposed Project (ESA, 2023c). Accordingly, the water use associated with the beds that would be relocated to the new hospital buildings is discounted from the existing buildings water demand here. With the proposed relocation of beds, the existing buildings would contain a total of 82 beds under the Proposed Project.

[8] Special Landscaped Area includes landscaping dedicated solely to edible plants, recreational areas, areas irrigated with recycled water, or water features using recycled water.

where:

ETo	=	The regional reference evapotranspiration rate
ETAF	=	Evapotranspiration Adjustment Factor For parks (SLAs) = 1.0 For landscape corridors = 0.45
LA	=	Total Landscape Area (including SLA)
SLA	=	Special Landscape Area

While a landscaping plan has not yet been developed at the time of writing of this WSE, the Proposed Project is estimated to include approximately 12% pervious surfaces (ESA, 2023b). For purposes of this WSE, it is conservatively assumed that all pervious areas would be subject to irrigation. Based on the above methodology and estimated pervious area, the total annual water use for the community landscaping is estimated to be 1.6 AFY at full buildout as shown in **Table 3** (excluding the distribution system losses discussed in Section 4.4).

4.4 Distribution System Losses

Water distribution systems experience a degree of water loss over the course of transmission from the source to the customer. Although distribution system losses from the newly constructed portion of the system's infrastructure associated with the Proposed Project would initially be expected to be minimal, it is conservatively assumed that distribution system losses associated with delivering water for the Proposed Project will ultimately be consistent with the proportion of non-revenue water loss per the 2021 validated water loss audit submitted to the California Department of Water Resources (DWR) for EBMUD (i.e., 12%; EBMUD, 2022a). **Table 2** shows the distribution system losses for the Proposed Project, estimated at a total of 13 AFY at full buildout.

4.5 Planned Demolition and Removal Use

A number of buildings and structures currently on-site would be demolished or removed as part of the Proposed Project, including the B/C Wing (33,510 sq ft), the A/B Wing (45,177 sq ft), the Bruce Lyon Memorial Research Laboratory and Addition (17,070 sq ft), the existing helistop structure (4,323 sq ft) and five temporary trailers which include administration, social services, offices, and facilities uses (total of 9,980 sq ft). Demands for the B/C Wing, the A/B Wing, and the Bruce Lyon Memorial Research Laboratory and Addition were estimated using the medical office demand factor, while the demands for the trailers and helistop structure were estimated using the general office demand factor and the parking structure cleaning demand factor, respectively. Total estimated demand for the demolished or removed structures is approximately 19 AFY.

Demands for the demolished or removed structures are subtracted from total projected water demands for the Proposed Project to show the net increase in water demand.

4.6 Total Project Water Demand

Based on the above methodologies and assumptions, and adjusting for the planned demolished and removed structures at the site, the total water demand associated with the all uses on the project site under the Proposed Project at full buildout and occupancy is estimated to be 91 AFY, as shown in **Table 2**. As a conservative approach, this WSE considers the total water demand on the project site (as opposed to net new Proposed Project demand) when evaluating effects of the Proposed Project on water supply in the following sections.

Table 2

Summary of Estimated Annual Project Water Demand

UCSF BCH Oakland New Hospital Building, Oakland, California

Water Use	Area or # of beds (sq ft)	Land Use Type (a)	Demand Factor	Demand Factor Units	Total Water Demand (AFY) (b)				
					2025	2030	2035	2040	2045
New Construction (c)									
Hospital Building									
Inpatient Hospital Use	128	Hospital	350	GPD/bed	0	50	50	50	50
Medical Support Services	3,837	Medical Office	0.17	GPD/sq ft	0	0.72	0.72	0.72	0.72
General and Clinical Support Services	30,333	General Office	0.055	GPD/sq ft	0	1.9	1.9	1.9	1.9
Transportation, Storage, and Loading Dock	4,841	Warehouse	0.0093	GPD/sq ft	0	0.050	0.050	0.050	0.050
Parking Garage Building and Rooftop Helistop Structure (d)	157,500	Parking	0.02	gal/sq ft/cleaning	0	0.12	0.12	0.12	0.12
Site Loading Dock Building	6,100	Warehouse	0.0093	GPD/sq ft	0	0.064	0.064	0.064	0.064
Total New Construction Demand					**0**	**53**	**53**	**53**	**53**
Existing Structures (e)									
Patient Tower, Western Addition, D&T Center, and Cardiac Catheterization Lab									
Medical Office (f)	35,782	Medical Office	0.23	GPD/sq ft	9.2	9.2	9.2	9.2	9.2
Hospital	82	Hospital	350	GPD/bed	32	32	32	32	32
Cafeteria	7,779	Restaurant	0.075	GPD/sq ft	0.66	0.66	0.66	0.66	0.66
Total Existing Structure Demand					**42**	**42**	**42**	**42**	**42**
Landscape Irrigation (g)	57,499	Irrigation	--	--	1.6	1.6	1.6	1.6	1.6
Distribution System Losses (h)	--	Losses	12%	--	5.9	13	13	13	13
Planned Demolition/Removal (e) (i)									
B/C Wing	33,510	Medical Office	0.17	GPD/sq ft	6.3	6.3	6.3	6.3	6.3
A/B Wing	45,177	Medical Office	0.17	GPD/sq ft	8.5	8.5	8.5	8.5	8.5
Bruce Lyon Memorial Research Laboratory and Addition	17,070	Medical Office	0.17	GPD/sq ft	3.2	3.2	3.2	3.2	3.2
Temporary Trailers	9,980	General Office	0.055	GPD/sq ft	0.61	0.61	0.61	0.61	0.61
Helistop Structure (d)	4,323	Parking	0.020	gal/sq ft/cleaning	0.0032	0.0032	0.0032	0.0032	0.0032
Total Demolition/Removal Demand					**19**	**19**	**19**	**19**	**19**
Net Annual Water Demand (j)					**31**	**91**	**91**	**91**	**91**

Abbreviations:

"AFY" = acre-feet per year
"BCH" = Benioff Children's Hospital
"D&T" - Diagnostic and Treatment
"DWR" = California Department of Water Resources
"EBMUD" = East Bay Municipal Utility District
"gal" = gallon
"GPD" = gallons per day
"Proposed Project" = UCSF BCH Oakland New Hospital Building
"R&D" = Research and Development
"sq ft" = square feet
"UCSF" = University of California - San Francisco
"WSE" = Water Supply Evaluation

Notes:

(a) Water demand factors for the hospital per Reference 1, R&D and general office per Reference 2, medical office per Reference 3, warehouse and restaurant per Reference 4, and parking per Reference 5.
(b) Full buildout is expected to be completed by early 2031 per Reference 6.
(c) New construction land use information for the rooftop helistop structure and parking garage per Reference 7 and all others per Reference 8.
(d) Water use associated with the parking garage and helistop structure is anticipated to be minimal, limited to cleaning of the facility. For purposes of this WSE, it is assumed that the parking garage and helistop structure will be cleaned twelve times per year and that 0.02 gal/sq ft will be used per each cleaning event, per Reference 5.
(e) Land use information for the existing structures and planned demolition/removal per Reference 9.
(f) The medical office use sq ft for the existing structures was estimated by applying the hospital bed per sq ft ratio from the new hospital building (1,503 sq ft / bed) to the number of hospital beds in the existing structures (123,262 sq ft), and subtracting that from the total Patient Tower, Western Addition, D&T Center, and Cardiac Lab sq ft (159,044 sq ft).
(g) Irrigation demands are calculated using the Maximum Allowable Water Allowance, per Reference 10.
(h) Estimated distribution system water loss associated with delivery of water to the Proposed Project is based on a rate of 12% per Reference 11 and includes non-revenue water losses.
(i) Demands associated with buildings planned to be demolished or removed are subtracted from total projected water demands to show that the water demands at the Proposed Project's completion are associated with the new construction and existing structure demands.
(j) Total may not sum due to rounding.

References:

1. Morton & Pitalo, Inc, 2022. St. Joseph's Medical Center Water Supply Assessment, dated October 2022.
2. Genentech Campus Master Plan Update Draft Environmental Impact Report, Prepared by Lamphier-Gregory, dated October 2019.
3. City of Ventura, 2020. Final Water Demand Factor Study, City of Ventura, prepared by Wood Rodgers, dated 8 April 2020.
4. USEIA, 2012. US Energy Information Administration 2012 Commercial Buildings Energy Consumption Survey: Water Consumption in Large Buildings Summary, dated 2012.
5. City of Los Angeles Bureau of Engineering, 2012. City of Los Angeles Bureau of Engineering, City of Los Angeles Bureau of Sanitation, Sewer Generation Rates Table, dated 6 April 2012.
6. ESA, 2023a. Information provided by ESA on 2 October 2023.
7. ESA, 2023b. Request for Information Form, provided by ESA on 12 July 2023.
8. ESA, 2023c. NHB Land Use Program/Space Summary Table, provided by ESA on 7 August 2023.
9. ESA, 2023d. Notice of Preparation of Environmental Impact Report, Notice of Public Scoping Meeting, UCSF Benioff Children's Hospital Oakland New Hospital Building, dated 22 May 2023.
10. California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance, 29 September 2020.
11. DWR, 2021. WUEdata -East Bay Municipal Utility District 2021 Water Audit Data Report, accessed via the WUEdata - Water Audit Report Data website on 24 July 2023, (https://wuedata.water.ca.gov/awwa_plans).

Table 3

Estimated Project Landscaping Water Demand

UCSF BCH Oakland New Hospital Building, Oakland, California

Landscaping Land Use	[A] **Area of Land Use (ac) (a)**	[B] **Annual Reference Evapotranspiration Rate (in) (b)**	[C] **Evapotranspiration Adjustment Factor (ETAF) (c)**	[F] **Maximum Applied Water Allowance (MAWA) (AFY) F = A x B x C (d)**
Landscaped Area	1.3	33	0.45	1.6
Estimated Total Outdoor Water Use for Landscaping				**1.6**

Abbreviations:

"ac" = acre

"AFY" = acre-feet per year

"BCH" = Benioff Children's Hospital

"ETAF" = Evapotranspiration Adjustment Factor

"in" = inches

"MAWA" = Maximum Applied Water Allowance

"UCSF" = University of California - San Francisco

Notes:

(a) Landscaping area per Reference 1.

(b) Annual reference evapotranspiration rate for Zone 1 (City of Oakland) area per Reference 2.

(c) An ETAF of 0.45 was used for non-residential landscaping area per Reference 3.

(d) The MAWA calculations are described in Reference 3.

References:

1. ESA, 2023. Request for Information Form, provided by ESA on 12 July 2023.
2. California Department of Water Resources, 2012. California Irrigation Management Information System Reference Evapotranspiration Zones, January 2012.
3. California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance, 29 November 2019.

5 EBMUD WATER DEMAND

Consistent with the UWMP Act (CWC §10610-10656), EBMUD's 2020 UWMP presents estimates of projected future water demand within EBMUD's service area in five-year increments, between the years 2025 and 2045 (EBMUD, 2021).

The projections include all existing demands within EBMUD's service area, as well as the increase in projected demand based on local and regional long-term planning documents as stipulated in the 2050 Demand Study (EBMUD, 2021).

Based on the 2020 UWMP, commercial, industrial, and institutional (CII) demand in the EBMUD service area is projected to increase by approximately 50% between 2020 and 2045 (EBMUD, 2021). This corresponds to a net CII demand increase of 8,961 AFY. When conservatively considering the total water demand on the Proposed Project site at 91 AFY, the projected Proposed Project demand would account for approximately 1.0% of the projected net CII growth for EBMUD. Additionally, the 2020 UWMP includes an analysis of past, present, existing, pending, and reasonably foreseeable future development projects based on the Association of Bay Area Government's (ABAG's) Plan Bay Area Projections 2040 (ABAG, 2018). Based on the ABAG projections, the 2020 UWMP acknowledges that the City of Oakland is continuing to see revitalization throughout the City and additional redevelopment is forecasted, with the City of Oakland accounting for the largest share of Alameda County's household growth. The 2020 UWMP assumes that over 160,000 persons will be added to the City of Oakland between 2020 and 2040[9] and plans to supply water for such growth. Based on the above information, EBMUD accounted for water demands associated with the Proposed Project within the 2020 UWMP.

5.1 Current and Historical Water Demand Within the EBMUD Service Area

Historical water demand within EBMUD'S service area from 2000 through 2022 is summarized in **Table 4**. The largest proportion of water demand within the EBMUD service area is from single family residential use, which represented approximately 46% of the demand in 2022. The remainder of the demand was split between multi-family residential (MFR; 19% of overall demand), industrial and petroleum (14% of overall demand), commercial (8.4% of overall demand), irrigation (7.7% of total demand), and institutional/government (4.5% of the overall demand; EBMUD, 2023b).

As show in **Table 4**, water use from 2000 to 2007 within EBMUD's service area remained fairly consistent, at an average of 241,698 AFY. A slight decrease in water use occurred from 2008 to 2009, which generally corresponds with the 2007 to 2009 drought and the economic downturn. Then, a significant drop in water demand occurred in 2014 and 2015, corresponding with the drought and mandatory statewide water use restrictions and water conservation targets enacted at the time. Water use between 2016 and 2020 slightly increased at an average of 186,892 AFY

[9] Based on ABAG Plan Bay Area Projections 2040 for the City of Oakland (ABAG, 2018).

but decreased in 2021 and 2022 due to the 2021 drought and Statewide adoption of water use restrictions in 2022.

5.2 EBMUD Water Demand Projections

Projected water demands for EBMUD are documented in the 2020 UWMP and presented in **Table 5** in five-year increments. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, water demand within EBMUD's service area is projected to increase to 256,218 AFY by 2045, an increase of 37% over the 2018-2022 average.

5.3 Planned Development Projects within the EBMUD Service Area

The 2020 UWMP water demand projections account for growth within the EBMUD service area through 2045. The 2020 UWMP projections are based on EBMUD's 2050 Demand Study which forecasts water demand based on dwelling units, employment from land use agencies, long-term planning documents, in-person meetings with relevant agencies, and planned land-use changes and redevelopment projects (EBMUD, 2021).

Since preparation of the 2020 UWMP, a number of WSAs have been prepared by EBMUD for other large developments within its service area. These include WSAs for the Gilman Gateway Rezone Project, Toyota Walnut Creek Mixed-Use Special District Project, and El Cerrito San Pablo Avenue Specific Plan Update. Demands analyzed in all recent WSAs were determined to be within the anticipated growth of EBMUD. Similarly, while the Proposed Project is not explicitly included in EBMUD's 2020 UWMP projections, as discussed above, the water demand associated with the Proposed Project is within the CII growth anticipated for EBMUD and is accounted for in the 2020 UWMP demand projections. This WSE therefore considers demands for all existing and planned future uses within EMBUD's service area.

5.4 Total Projected EBMUD Water Demand (Inclusive of the Proposed Project)

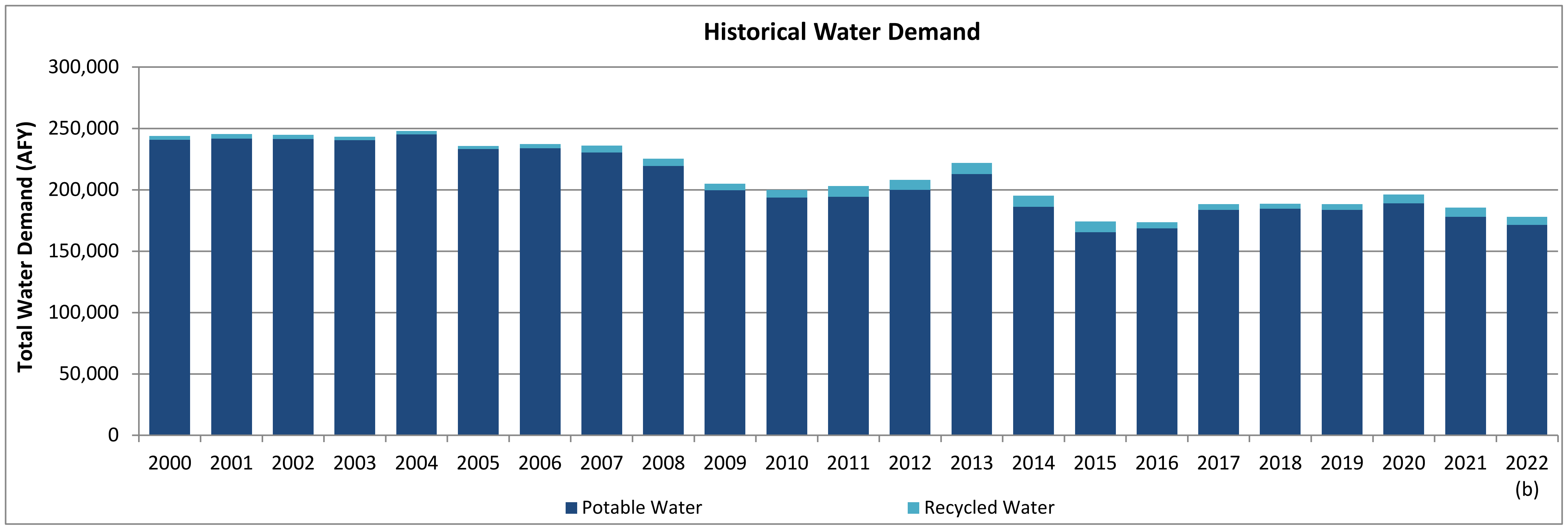
Table 5 shows the projected water demands for the EBMUD inclusive of the estimated Proposed Project water demands. As shown, the Proposed Project demands were included within EBMUD's projections, and thus are not additive to EBMUD's projected demands.

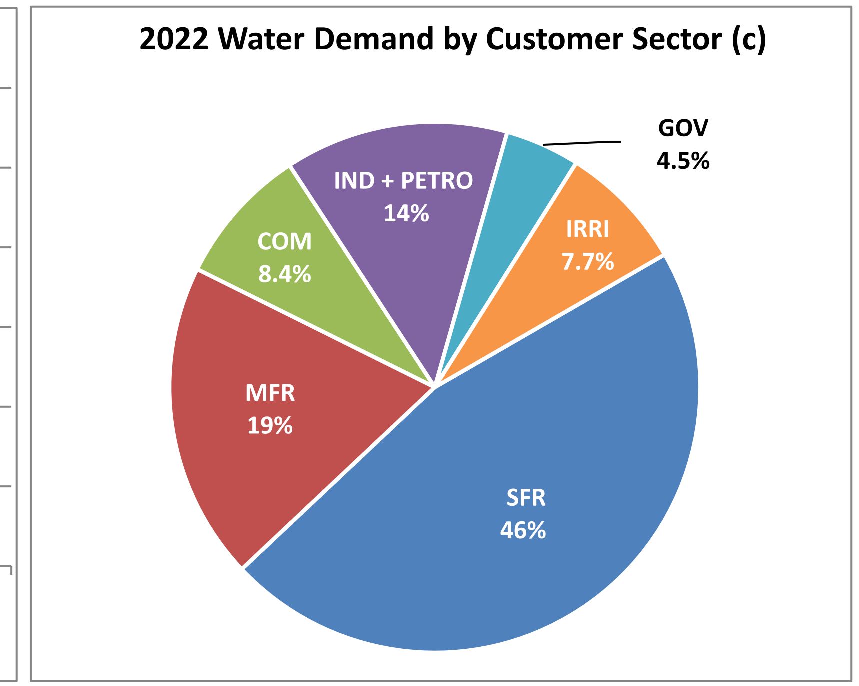
Table 4

Historical Water Demand for East Bay Municipal Utility District

UCSF BCH Oakland New Hospital Building, Oakland, California

Category	EBMUD Annual Water Demand (a) (AFY)																						
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022 (b)**
Potable Water	240,608	241,905	241,189	240,172	245,042	233,288	233,819	230,157	219,579	199,646	193,981	194,313	200,194	212,812	186,256	165,560	168,670	183,559	184,489	183,811	189,112	178,112	171,382
Recycled Water	3,149	3,631	3,598	2,967	2,665	2,361	3,359	5,675	5,924	5,229	6,028	8,627	7,974	9,013	8,945	8,559	4,811	4,718	3,989	4,404	6,896	7,145	6,384
Total Water Demand	**243,757**	**245,536**	**244,787**	**243,138**	**247,707**	**235,648**	**237,177**	**235,832**	**225,503**	**204,876**	**200,009**	**202,940**	**208,168**	**221,824**	**195,201**	**174,120**	**173,481**	**188,277**	**188,479**	**188,215**	**196,007**	**185,257**	**177,766**





Abbreviations:

"AFY" = acre feet per year
"BCH" = Benioff Children's Hospital
"COM" = Commercial
"EBMUD" = East Bay Municipal Utility District
"GOV" = Institutional/Government
"IND" = Industrial
"IRRI" = Irrigation
"MFR" = Multi-Family Residential
"PETRO" = Petroleum
"SFR" = Single-Family Residential
"UCSF" = University of California - San Francisco

Notes:

(a) Historical water demands and 2022 water use by customer sector per Reference 1.
(b) 2022 demand values are provisional.
(c) Does not include recycled water.

References:

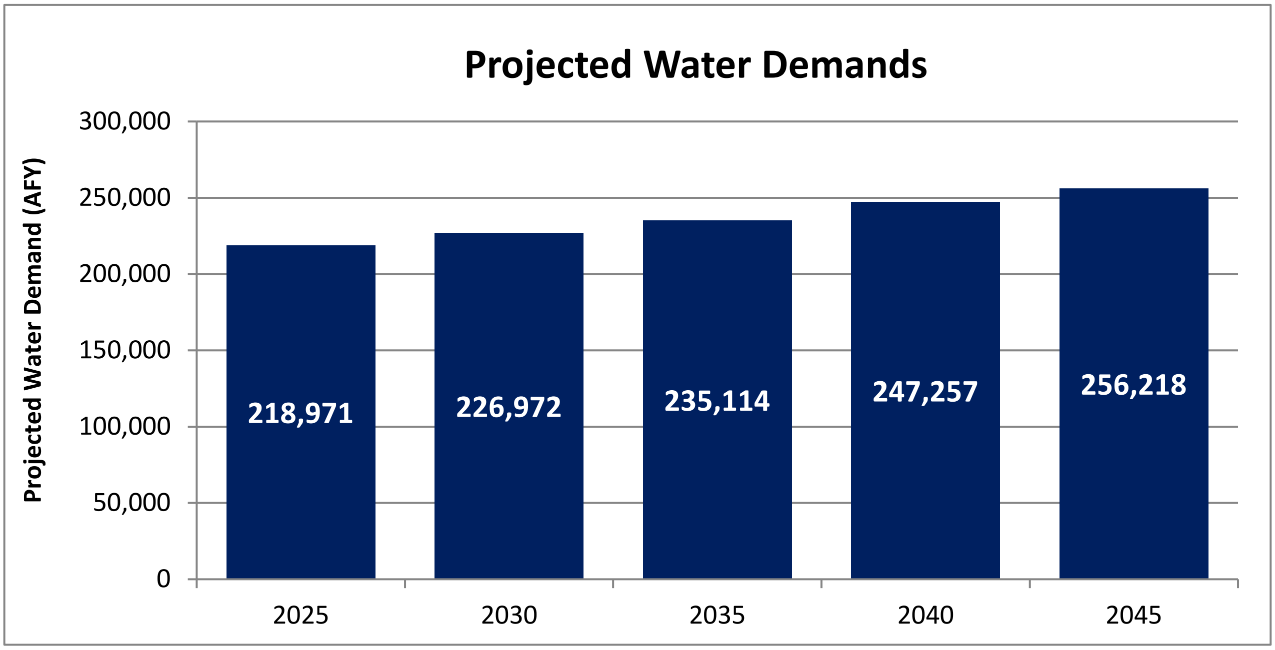
1. EBMUD, 2023. Historical Demand and Production Data Provided by EBMUD on 26 September 2023.

Table 5

Projected Future Water Demand for the East Bay Municipal Utility District

UCSF BCH Oakland New Hospital Building, Oakland, California

Water Demand	Projected Annual Water Demand (AFY)				
	2025	**2030**	**2035**	**2040**	**2045**
EBMUD 2020 UWMP (a)	218,971	226,972	235,114	247,257	256,218
Proposed Project	Included in EBMUD Demand Projections (b)				
Total Water Demand	**218,971**	**226,972**	**235,114**	**247,257**	**256,218**



Abbreviations:

"AFY" = acre feet per year

"BCH" = Benioff Children's Hospital

"EBMUD" = East Bay Municipal Utility District

"Proposed Project" = UCSF BCH Oakland New Hospital Building

"UCSF" = University of California - San Francisco

"UWMP" = Urban Water Management Plan

Notes:

(a) Water demand projections for EBMUD were updated in 2021, and are presented per Reference 1.

(b) The demands associated with the Proposed Project are within the growth anticipated for EBMUD and are accounted for in the demand projections.

References:

1. EBMUD, 2021. East Bay Municipal Utility District 2020 Urban Water Management Plan, prepared by EBMUD, dated June 2021.

6 EBMUD WATER SUPPLY

This section identifies EBMUD's water supplies and discusses the vulnerability of the various supplies to drought and other factors affecting water supply reliability. Unless otherwise noted, the source of the information included in this section is EBMUD's 2020 UWMP. The water supply for EBMUD is a combination of the following sources:

- Potable water including surface water from the Mokelumne River, local runoff into one of five terminal EBMUD reservoirs, and Central Valley Project (CVP) water (Section 6.1.1); and
- Recycled wastewater produced by EBMUD at EBMUD's Main Wastewater Treatment Plant (WWTP; Section 6.1.3), and by partner agencies at their respective facilities including San Leandro Reclamation Facility's San Leandro Water Pollution Control Plant, West County Wastewater District's North Richmond Water Recycling Plant, Dublin San Ramon Services District, and City of San Leandro.

While the Proposed Project is considering several recycled water uses (see Section 6.1.3), these have not been confirmed or quantified, and it is conservatively assumed that the Proposed Project will be served solely by potable water for purposes of this WSE.

6.1 Identification of Water Supply Rights

This WSE includes identification of the water supply entitlements, water rights, and water service contracts relevant to the identified water supply for the Proposed Project. This WSE includes a summary of EBMUD's water supply sources in the EBMUD service area.

6.1.1 Surface Water Supply

Surface water supplies the majority of EBMUD's water demands. As shown in **Table 6**, surface water supplied 171,382 AFY, or 96% of total supplies in 2022 (EBMUD, 2023b). Surface water is collected from the Mokelumne River and conveyed from the Pardee Reservoir to EBMUD's customers through a system of reservoirs, pipelines, pumping plants, water treatment plants (WTPs) and other distribution facilities prior to use. Surface water supply also includes runoff from the protected watershed lands in the East Bay Area into the five EBMUD terminal reservoirs.

6.1.1.1 <u>Mokelumne River Supply</u>

EBMUD holds water rights for a maximum of 325 million gallons per day (MGD) of surface water from the Mokelumne River. Actual surface water supply available from the Mokelumne River to EBMUD are governed by: (1) hydrology, (2) water rights priorities, (3) Amador County's pre-1914 water rights to 15 thousand acre-feet (TAF), (4) agreements with State and Federal regulatory agencies, (5) 1998 Joint Settlement Agreement with the United States Department of Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) flow commitment to protect lower Mokelumne River with in-stream flow releases (maximum of 165.9 TAF; dry year maximum of 65 TAF), (6) California SWRCB order and decisions, (7) federal directives, (8) court decrees, and (9) agreements with local Mokelumne River water users including:

- Amador and Calaveras Counties (maximum of 47.0 TAF, dry year maximum of 13.1 TAF);
- Jackson Valley Irrigation District (maximum of 3.85 TAF, dry year maximum of 0 TAF);
- North San Joaquin Water Conservation District (maximum of 20 TAF, dry year maximum of 0 TAF);
- Riparian and Senior Appropriators;
    - Above Woodland Irrigation District [(WID); maximum of 14.4 TAF, dry year maximum of 11.2 TAF]; and
    - Below WID (maximum of 6.2 TAF, dry year maximum of 4.8 TAF).

EBMUD's Mokelumne River supply is stored in the 2,260 acre-feet (AF) surface area, 209,950 AFY permitted capacity Pardee Reservoir, located 38 miles northeast of the City of Stockton. The Pardee Reservoir is impounded by the 345-foot, concrete gravity arch Pardee Dam. From the Pardee Reservoir, water from the Mokelumne River travels 10 miles downstream to the Camanche Reservoir. The 7,470-acre surface area, 431,500 AFY permitted capacity Camanche Reservoir is impounded by the zoned earthen Camanche Dam, which is jointly operated with the Pardee Reservoir to maintain stream flows for fisheries, riparian habitat, flood control, and obligations discussed above. Water is then transported to the Pardee Tunnel for further transportation across the Sacramento-San Joaquin Delta (Delta).

The 2.2-mile-long, 8-foot-tall Pardee tunnel carries raw, untreated Mokelumne River water from the Pardee Reservoir to the Mokelumne Aqueduct System. Mokelumne River water then travels through one of the Mokelumne Aqueducts' three 82-mile-long pipelines across the Delta to the City of Walnut Creek. The Mokelumne Aqueducts have a gravity flow capacity of 202 MGD. An additional 325 MGD capacity is achieved with one of EBMUD's three raw water pumping plants. Water then enters the Lafayette Aqueduct System.

Both Lafayette Aqueducts (No. 1 and No. 2) are 2.8 miles long and 108 inches in diameter. Lafayette Aqueduct No. 1 is a cast-in-place, horseshoe shaped pipe while Lafayette No. 2 is a mortar lined and coated pipeline. Water transfers from the Lafayette Aqueduct System to one of the three inline filtration WTPs (Orinda WTP: 175 MGD capacity, Walnut Creek WTP: 115 MGD capacity, and Lafayette WTP: 35 MGD capacity) or one of EBMUD's five terminal reservoirs (Briones: 58,960 AF capacity, Upper San Leandro: 38,905 AF capacity, San Pablo: 38,600 AF capacity, Chabot: 10,350 AF capacity, and Lafayette: 4,250 AF capacity) for later treatment at one of EBMUD's conventional water treatment plants (Sobrante: 60 MGD capacity, San Pablo WTP: 50 MGD capacity, and Upper San Leandro WTP: 60 MGD capacity).

Water treated at the three inline WTPs undergo coagulation, filtration, and disinfection. Water from the inline WTPs is served to customers east of the Oakland-Berkeley Hills (Walnut Creek and Lafayette WTP) and the central parts of the area west of the Oakland-Berkeley Hills (Orinda WTP). Water at the three conventional WTPs undergoes rapid mixing, flocculation, sedimentation, filtration, and free chlorine disinfection. At Sobrante WTP and Upper San Leandro WTP, water is treated for taste and odor control with ozone and peroxide. Water from the conventional WTPs services EBMUD customers in the northern and southern parts west of the Oakland-Berkeley Hills.

6.1.1.2 Local Runoff

EBMUD's secondary water supply source is local runoff from the East Bay area watersheds, which is stored in the five terminal reservoirs within EBMUD's service area. The availability of water from local runoff depends on two factors: hydrologic conditions and terminal reservoir storage availability. In dry and critically dry years, evaporation can exceed runoff, resulting in net loss of local supply. Local runoff supplies the East Bay, on average, 23 MGD during normal hydrologic years.

6.1.1.3 United States Bureau of Reclamation (USBR) CVP Supply

During multi-year droughts, the Mokelumne River and local runoff alone cannot meet EBMUD's projected customer demands, even with mandatory water use restrictions. Furthermore, EBMUD's Mokelumne River supply is expected to be reduced as demands on the Mokelumne River increase from the growing needs of riparian users and a small number of senior appropriators with water rights senior to those of EBMUD's in Amador, Calaveras, and San Joaquin counties.

In 1970, EBMUD executed a contract with the USBR for delivery of CVP water from the American River. In 2000, USBR, EBMUD, and Sacramento region parties reached an agreement to modify the contract and develop a joint water supply intake on the Sacramento River, rather than the American River.

In 2006, EBMUD signed a Long-Term Renewal water service contract with USBR that modified its original 1970 contract for CVP supplies. The contract provided for delivery of up to 133,000 AF in a single qualifying year, not to exceed a total of 165,000 AF in three consecutive qualifying years. Qualifying years for obtaining CVP deliveries are those in which EBMUD's total stored water supply is forecast as of 1 March, updated monthly through 1 May, to be below 500 TAF on 30 September of that year. Because EBMUD relies on CVP deliveries during dry and critically dry periods, the CVP supply constitutes a critical component of EBMUD's water supply reliability. EBMUD exercised its contract and received CVP water during the 2014-2015 drought period. In 2014 EBMUD received 18,641 AF of CVP water, and in 2015 EBMUD received 33,250 AF of CVP water, approximately 25% of EBMUD's allocation.

On 28 February 2020 EBMUD signed a Contract with USBR which "converted" its 2006 water service contract to a permanent repayment contract pursuant to the 2016 Water Infrastructure Improvements for the Nation (WIIN) Act. The converted contract superseded the 2006 contract and removes the requirement to periodically renew the contract while retaining the other essential water service terms and conditions. Conversion to a permanent repayment contract is intended to protect EBMUD's water supply reliability from the uncertainty of regulatory requirements that may exist in year 2046, when the 2006 Long-Term Renewal water service contract was set to expire.[10]

[10] USBR's approval of conversion of several CVP contracts to permanent repayment contracts, including EBMUD's contract, has been challenged in pending litigation.

6.1.1.4 Surface Water Constraints

Factors that will affect future reliability of EBMUD's surface water supplies are discussed below. Detailed information regarding factors that impact EBMUD's supply reliability is provided in the 2020 UWMP, unless otherwise stated.

6.1.1.4.1 Mokelumne River

EBMUD's surface water supplies from the Mokelumne River (approximately 90% of surface water supply) and from local runoff (approximately 10% of surface water supply) are constrained by hydrologic variability, climate change, regulatory constraints (water rights, Federal hydropower licenses), water supply quality, earthquakes, and Delta floods. To combat these vulnerabilities, EBMUD is committed to making necessary improvements to its supply system through: (1) Raw Water Master Plan, (2) Levee Improvements, (3) Delta Interconnection Project, (4) Large Diameter Pipeline Master Plan, (5) WTP Improvements, (6) Pipeline Rebuild Program, and (7) Dam Safety Program.

There are also institutional parameters that allocate the water supply of the Mokelumne River that affect future supply reliability for EBMUD. For example, the SWRCB is considering updates to the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan (Bay-Delta Plan) focused on the Sacramento/Delta watershed, which includes the Sacramento River and its tributaries, Delta eastside tributaries (including the Calaveras, Cosumnes, and Mokelumne Rivers), interior Delta flows, and Delta outflows, and includes consideration of proposed voluntary agreements (SWRCB, 2023a). The updated Bay-Delta plan will identify: (1) beneficial uses of water, such as municipal and industrial (M&I) use, fisheries use, and agricultural uses of water; (2) water quality objectives to protect those beneficial uses; and (3) a program of implementation to achieve the water quality objectives. The last comprehensive update of the Bay-Delta Plan was conducted by the SWRCB in 1995, with minor amendments in 2006 (EBMUD, 2021).

On 28 September 2023, the SWRCB released a draft Staff Report/Substitute Environmental Document (SED, also referred to as the Sacramento/Delta update to the Bay-Delta Plan) in support of potential updates to the Bay-Delta Plan focused on the reasonable protection of fish and wildlife in the Sacramenta/Delta watershed. The SED provides scientific information to support possible updates and information on the potential benefits and environmental, economic, and other impacts and associated mitigation measures for possible alternatives for updating the Sacramento/Delta portions of the Bay-Delta Plan and assesses a range of alternatives that may be considered for adoption by SWRCB. After considering the comments received on this draft SED, SWRCB staff will develop and circulate draft regulatory text proposed Sacramento/Delta changes to the Bay-Delta Plan, including the program of implementation. The input received on this draft SED and the draft Bay-Delta Plan amendments will inform the final Staff Report and final proposed Bay-Delta Plan amendments, which will be brought before the SWRCB Board for consideration at a future meeting (SWRCB, 2023b).

EBMUD is participating in the Bay-Delta update process to ensure that any proposed changes affecting the Mokelumne River do not undermine the fisheries' success attained under the existing Joint Settlement Agreement on the Mokelumne River, and do not adversely affect the continued viability of the EBMUD Mokelumne River supply that provides vital water to its service area (EBMUD, 2021).

In August 2022, EBMUD, in partnership with other key stakeholders, signed a Memorandum of Understanding (MOU) with the SWRCB to develop a voluntary agreement to improve water flows and habitat in the Sacramento-San Joaquin Delta (EBMUD, 2022b). Some of the key aspects of the newly signed MOU for the Mokelumne River are:

1. Enhancement of the already successful EBMUD Mokelumne salmon program by providing additional flows on top of what EBMUD already releases for fish, timed around the salmon life cycle, and will also contribute to improved conditions for Delta fish.
2. Help to resolve a regulatory process that had the potential for significant water supply impacts for the people, communities, and economy of the East Bay. The additional Mokelumne River flows in the MOU will help the Bay-Delta while enabling EBMUD to achieve its water supply reliability goals for the East Bay.
3. Clear definition of EBMUD's contribution of water and funding that is fair and equitable for the size of the river. The contributions will support the Bay-Delta, which is critical to the entire state.
4. A significant first step in a long-term process. The MOU defines appropriate contributions to the environment and provides an equitable basis from which to craft a final approach.

There are currently over a dozen active lawsuits challenging the SWRCB's adoption of the Bay-Delta Plan Amendment. This litigation is in the early stages and there have been no dispositive court rulings as of this date.

6.1.1.4.2 CVP Supplies

Additionally, in some dry years, there may not be sufficient water supplies for all CVP contractors to receive their full requested amount, and USBR may limit allocations. In August 2015, USBR released the final version of its M&I Water Shortage Policy outlining how it will allocate water during years when there is not enough water to meet all CVP contractor requests. The policy provides for reduced allocations for M&I contractors in comparison to the contractually specified quantity. The USBR indicated in the M&I Water Shortage Policy that, depending on CVP water supply conditions and operational constraints, it is possible for M&I deliveries to be reduced to below 50%. In 2015, EBMUD only received 25% allocation. Whether allocations are reduced, and the extent of any reductions, depends on the quantity of water available to the CVP. The M&I Water Shortage Policy also states that USBR may increase the amount of water that the contractor receives above the reduced allocation to the extent needed to ensure that the contractor has enough supply to maintain a "Public Health and Safety" (PHS) level calculated in the manner described in the M&I Water Shortage Policy Implementation Guidelines and Procedures dated August 2015 and 1 February 2017 (USBR, 2017).

6.1.2 Groundwater Supply

At the time of writing this WSE, EBMUD does not use groundwater as a water supply source within its service area. However, EBMUD is currently exploring various conjunctive use and groundwater banking programs, including the Bayside Groundwater Project in the Santa Clara Valley Groundwater Basin - East Bay Plain Subbasin (EBP Basin) and the Eastern San Joaquin County Groundwater Banking/Exchange in the San Joaquin Valley Groundwater Basin – Eastern San Joaquin Subbasin (ESJ Basin; see Section 6.1.2.3). Additional details regarding basin description and groundwater management for each basin are included below.

6.1.2.1 Basin Description

The following is a description of the groundwater basins in which EBMUD is participating in regional water supply projects. The discussion is based on a review of relevant information within the 2020 UWMP, as well as other sources, such as the respective Groundwater Sustainability Plans (GSPs).

6.1.2.1.1 East Bay Plain

The EBP Basin, DWR Basin No. 2-009.04, underlies the Proposed Project and a portion of the EBMUD service area, as shown on **Figure 3**. The EBP Basin encompasses approximately 71,040 acres at the northern end of the Santa Clara Valley Groundwater Basin within Alameda and Contra Costa counties (LSCE, 2022). It is bounded to the East by contact with the Franciscan Basement rock of the East Bay Hills, San Pablo Bay to the North, San Francisco Bay to the West, and Santa Clara Valley Basin - Niles Cone Subbasin to the South (EBMUD, 2021; LSCE, 2022). The EBP Basin is not adjudicated and, in its recent evaluation of California groundwater basins, DWR determined that the EBP Basin is not in a condition of critical overdraft and designated the EBP Basin as “medium priority” (DWR, 2019).

6.1.2.1.2 Eastern San Joaquin

The ESJ Basin, DWR Basin No. 5-022.01, is the site of a potential groundwater banking project for EBMUD and is shown in relation to the EBMUD service area on **Figure 3**. The ESJ Basin encompasses approximately 764,800 acres at the northern end of the San Joaquin Valley Groundwater Basin within San Joaquin County (ESJGWA, 2022). It is bounded to the East by contact with the crystalline rocks of the basement complex Sierra Nevada Foothills, to the North by Dry Creek, the Cosumnes Groundwater Subbasin, the South American Subbasin, and the Solano Subbasin, to the West by the Sacramento-San Joaquin River Delta (Delta), the Tracy Subbasin, and the East Contra Costa Subbasin, and to the South by the Stanislaus River and Modesto Subbasin (EBMUD 2021; ESJGWA 2022). The ESJ Basin is not adjudicated; however, in its recent evaluation of California groundwater basins, DWR determined that the ESJ Basin is in a condition of critical overdraft and designated the ESJ Basin as “high priority” (DWR, 2019).

Legend

Project Boundary

Groundwater Basin

Santa Clara Valley - East Bay Plain

San Joaquin Valley - Eastern San Joaquin

Livermore Valley Basin

N

0 15 30

(Scale in Miles)

Abbreviations

"DWR" = California Department of Water Resources

"UCSF" = University of California - San Francisco

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 5 October 2023.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118-2019 Update.

Regional Setting and Groundwater Basin

UCSF Benioff Children's Hospital
Oakland New Hospital Building

Oakland, CA
October 2023
EKI C30100.00

eki environment & water

Figure 3

Path: X:\C30100\Maps\2023\10\Fig3_DWRGWBasinLocation_2023_10_05.mxd

6.1.2.2 Groundwater Management

Prior to the passage of the Sustainable Groundwater Management Act (SGMA) in 2014, the EBP Basin cooperated in the San Francisco Bay Area Integrated Regional Water Management Plan (IRWMP) and the South East Bay Plain Basin Groundwater Management Plan (GMP), and the ESJ Basin cooperated in the Eastern San Joaquin IRWMP and the Eastern San Joaquin Groundwater Basin GMP. The GSPs discussed in the following section supersede the pre-existing GMPs and IRWMPs as the groundwater management plan for each respective basin.

In 2014, the California State Legislature enacted SGMA, with subsequent amendments in 2015. SGMA requires the formation of Groundwater Sustainability Agencies (GSAs) and the development and implementation of GSPs for groundwater basins that are designated by DWR as medium or high priority. Therefore, as medium- and high- priority basins, the EBP Basin and ESJ Basin, respectively, are subject to the requirements of SGMA.

East Bay Plain

Two GSAs were formed to collectively assume responsibility for sustainable groundwater management of the EBP Basin. EBMUD falls within the jurisdiction of the EBMUD GSA. Together with the City of Hayward GSA, the EBMUD GSA developed the GSP for the EBP Basin and submitted it to DWR in January 2022. The GSP was approved by DWR in July 2023 and DWR has recommended Corrective Actions to be addressed in the 2027 update (DWR, 2023b).

As defined under SGMA, sustainable yield means “the maximum quantity of water, calculated over a base period representative of long-term conditions in a basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing undesirable results.” Based on development and application of a numerical groundwater flow model for the EBP Basin, previous studies by Muir in 1996 and Norfleet in 1998, and the water balance analysis presented in the GSP, the sustainable yield of the EBP Basin is estimated to be approximately 12,500 AFY (LSCE, 2022). The current rate of groundwater use in the EBP Basin is estimated to be approximately 3,600 AFY, well below the estimated sustainable yield of the basin.

The GSP for the EBP Basin includes various projects and management actions (PMAs) to support continued sustainable management of the EBP Basin. As reported in the Water Year 2022 Annual Report for the EBP Basin, though progress has not yet started on the proposed PMAs, based on an assessment of groundwater levels, all Representative Monitoring Wells (RMWs) remain above their minimum thresholds (MTs), with many above their interim milestones (IMs) and/or measurable objectives (MOs) indicating sustainable groundwater management continues in the EBP Basin (LSCE, 2023).

Eastern San Joaquin

As stated above, EBMUD’s service area does not fall within the jurisdiction of the ESJ Basin; however, information about the ESJ Basin is included for completeness, given that EBMUD is evaluating groundwater banking opportunities within the ESJ Basin. The ESJ Basin is managed under one GSP, which was developed by the Eastern San Joaquin Groundwater Authority (ESJGWA), a joint powers authority formed by 16 GSAs. The ESJ GSP was designated “incomplete” with Corrective Actions in January 2022. Following GSP revisions, the GSP was approved by DWR in March 2023 and DWR has recommended Corrective Actions to be addressed in the 2025 update (DWR, 2023a).

Based on development and application of a numerical groundwater flow model for the ESJ Basin and the water balance analysis presented in the GSP, the sustainable yield of the ESJ Basin is estimated to be approximately 715,000 AFY (ESJGWA, 2022).

As stated above, SGMA requires implementation of various PMAs to assist in the sustainable management of a basin. The ESJ GSP contains detailed information on the 23 PMAs the GSAs proposed. Based on an evaluation of current groundwater use in the GSP, the ESJ Basin would reach sustainability once approximately 16,000 AFY of pumping is offset and/or recharged.

As reported in the Water Year 2022 Annual Report for the ESJ Basin, progress has been made on numerous PMAs since the release of the GSP (ESJGWA, 2023). Additional detail regarding implementation of PMAs within the ESJ Basin are included in the Eastern San Joaquin Annual Report Water Year 2022 (ESJGWA, 2023).

6.1.2.3 Participation in Groundwater Supply Projects

EBMUD's long-term water supply goals include improving its water supply reliability and the District is exploring several conjunctive use and groundwater banking/exchange programs to diversify EBMUD's supply portfolio.

6.1.2.3.1 Bayside Groundwater Project

The Bayside Groundwater Project is being developed in phases to provide a diverse and robust water supply using a conjunctive water management approach that sustainably manages the EBP Basin. Construction of the Bayside Groundwater Project Phase 1 facilities was completed in 2010, with construction of a facility that enables EBMUD to inject potable drinking water into the deep aquifer of the EBP Basin during wet years and also to extract, treat, and use groundwater as a supplemental supply during times of drought. Future phases will expand on this operation.

The Phase 1 facility consists of an injection/extraction well for aquifer storage and recovery (ASR), a water treatment plant and distribution pipelines connecting the treatment plant to the well, a subsidence monitoring system, and a network of groundwater monitoring wells. The injection/extraction system uses an approximately 650-foot deep well located on Oro Loma Sanitary District property in San Lorenzo. When operated in injection mode, treated water from EBMUD's distribution system is directed through the injection/extraction well into the deep aquifers of the EBP Basin. EBMUD operated in injection mode during wet years (2018 and 2019) when surplus water was available for storage. During droughts periods, water may be extracted and will be treated to meet all federal and state drinking water standards prior to distribution to customers.

Except for groundwater sampling and maintenance operations, no groundwater pumping has been conducted from the Phase 1 facility. A drinking water supply permit is required to extract groundwater for public water supply. EBMUD evaluated future project phases and associated yield as part of the development of the GSP (LSCE, 2022):

> *Future phases of Bayside would involve constructing additional ASR wells. Data collected as part of the proposed management actions will be used to make science-based decisions regarding whether future phases are feasible. ASR well locations and diameter/depth of ASR wells would be selected to maximize recharge efficiency and benefits to the EBP Subbasin to maintain sustainability and avoid undesirable results.*
>
> *If Bayside Phases 2 and 3 are developed, these projects will probably not occur until late in the GSP Implementation Period or during the Sustainability Period after 2042. Studies for Phase 2 and/or Phase 3 ASR facilities would include: identify sites that are good locations and conduct feasibility studies for construction of ASR wells, initiate permitting and environmental documentation, and identify and secure financing for construction. It can be anticipated that if additional ASR phases are developed in the future, the overall process will require about 10 years to complete for each phase.*

The Phase 1 facility well has an operational injection capacity of approximately 0.35 MGD and an extraction capacity of 2 MGD. Between 2009 – 2011, a total of about 29 million gallons (MG) of potable water was injected into the Deep Aquifer of the EBP Basin as part of startup testing of the facility. Between 2017-2019, a total of 18 MG or 55 acre-feet (AF) has been injected into the Deep Aquifer of the EBP Basin (LSCE, 2022).

6.1.2.3.2 Demonstration Recharge Extraction and Aquifer Management Pilot Project

EBMUD is investigating long-range options for the combined use of groundwater and surface water sources beyond the EBMUD service area. In addition to providing a dry-year supply for EBMUD, groundwater banking can help address over-drafted groundwater basins. Over drafting can lead to seawater intrusion, land subsidence, and lowered groundwater levels.

Groundwater banking efforts are currently focused on the Eastern San Joaquin County where the Demonstration Recharge Extraction and Aquifer Management (DREAM) Pilot Project is underway. Pending further evaluation of the results of the DREAM Pilot Project, EBMUD, North San Joaquin Water Conservation District (NSJCWCD), San Joaquin County, and the Eastern Water Alliance may pursue a larger, longer term groundwater banking project. The results of the pilot will also inform projected recharge and groundwater pumping for the potential larger project.

The DREAM Pilot Project provides NSJWCD with up to 1,000 AF of EBMUD surface water from the Mokelumne River that participating landowners use for irrigation in lieu of pumping groundwater from the ESJ Basin thereby storing groundwater for future use. During dry years, EBMUD can recover up to half of the banked groundwater for use within its service area. The DREAM Project provides multiple benefits, including replenishment of the critically-over drafted ESJ Basin and dry year supplemental water supply for EBMUD.

In 2017, San Joaquin County issued the DREAM groundwater export permit, which allows up to 500 AF of groundwater to be extracted from a well in the NSJWCD service area and conveyed to

EBMUD's Mokelumne Aqueducts for use in EBMUD's service area. In 2018 and 2019, SWRCB granted EBMUD permits to transfer water to NSJWCD for the DREAM Project and to enhance fish and wildlife in the stretch of the Mokelumne River from Camanche Dam downstream to NSJWCD's South Pump Station. Over those two years, a total of 342 AF of the 1,000 AF of Mokelumne River was released to NSJWCD.

Additional facilities required to convey groundwater nearly three miles from the NSJWCD well and into EBMUD's Mokelumne Aqueducts were constructed in 2022. Groundwater extraction took place for approximately two weeks in February 2023 to test the facilities that brought San Joaquin County groundwater into EBMUD's raw water system for the first time. About 40 AF of groundwater was incorporated with EBMUD's Mokelumne water supply. After the remainder of the DREAM recharge water is released by EBMUD to NSJWCD in a future year, groundwater extraction will occur for one or two longer periods to complete the pilot test (EBMUD, 2023a).

EBMUD and NSJWCD have started the preliminary planning for the longer-term banking project. The longer-term banking project may use the same concept as the pilot project but will involve larger quantities of water and potential additional facilities to deliver and use the water for in-lieu recharge within NSJWCD, and to extract and return banked water credits to EBMUD. The longer-term project contemplates EBMUD providing surface water supplies of 3,000 AFY to 6,000 AFY in dry years and 8,000 AFY in wet years to NSJWCD. These surface water supplies would come from EBMUD's water rights on the Mokelumne River and would be in addition to surface water available under NSJWCD's water right. EBMUD would receive a banked water credit for 50% of the additional supplies provided, leaving a net surface/groundwater increase to the NSJWCD area of 50% of all additional supplies provided. The net water gain to NSJWCD may increase if EBMUD does not extract its banked supplies regularly because of the 5% annual loss factor in the San Joaquin County export ordinance. The project is expected to be 50% built out by 2028 and fully built out by 2035. EBMUD will receive a banked water credit of 50% of amount recharged, not to exceed 500 AF (ESJGWA, 2022).

6.1.3 Non-Potable and Recycled Water

Rainwater capture and reuse is under consideration for the Proposed Project, as well as using graywater from mechanical equipment condensate and/or lavatories for landscape irrigation or toilet flushing. However, these have not been confirmed or quantified, and it is assumed that all demands for the Proposed Project will be met by potable water for purposes of this WSE. However, recycled water represents a source of supply for EBMUD and is discussed below for completeness.

Recycled water is used for several purposes including: (1) landscape irrigation (including golf courses), (2) commercial toilet flushing, (3) feed water for cooling towers and industrial boilers, and (4) dust control, soil compaction, power washing, landscape irrigation, street washing and sewer flushing to permitted commercial truck customers (EBMUD, 2019; EBMUD, 2021). Water is recycled at the EBMUD Main WWTP, or at various partner agency facilities such as:

- San Leandro Reclamation Facility for Chuck Corica Golf Complex and Harbor Bay Parkway irrigation;

- West County Wastewater District's North Richmond Water Recycling Project for Chevron refinery cooling tower use;
- Dublin San Ramon Services District for San Ramon Valley landscape irrigation; and
- City of San Leandro for golf course and City landscape irrigation.

Recycled water is considered a "drought-proof" source and is therefore projected to remain reliable as shown in the 2020 UWMP. In 2020, 4% (7,055 AF) of the EBMUD's total demands were met by recycled water. Through 2045, it is projected that recycled water will meet an additional 5% of EBMUD demand for a total of 9% of EBMUD's demands (i.e., 22,403 AFY; EBMUD, 2021).

6.2 Total Potable Supply in Normal, Single Dry, and Multiple Dry Years

The projected water supply sources, as described above, are surface water from the Mokelumne River, local runoff into EBMUD's terminal reservoirs, and recycled water. Historical supplies from 2018 through 2022 and projected normal year supplies through 2045 for each source are shown in **Table 7**. **Table 8** shows the projected demand for EBMUD, with the inclusion of the Proposed Project, and the total available supply through 2045. The current and planned future water supply within the EBMUD service area is 256,513 AFY through 2045.

The anticipated dry-year supply estimates presented below are based on the delivery estimates provided by EBMUD as part of the 2020 UWMP (EBMUD, 2021). During single dry years, the annual supply will be reduced to 228,509 AFY by 2045. With associated demand reduction actions and conservation, no supply shortfalls are expected (see **Table 9**). During multiple dry years, the 2020 UWMP estimates that annual supply will be reduced to 208,347 AFY in 2025 during the first year of a drought, and 201,626 AFY, 204,986 AFY, 208,347 AFY, and 206,107 AFY in 2025 in the second, third, fourth, and fifth years of drought. The 2020 UWMP further estimates that in 2045, annual supply will be reduced to 234,110 AFY during the first year of drought, 226,269 AFY in the second year of drought, 229,630 AFY in the third year of drought, 224,029 AFY in fourth year of drought, and 200,567 AFY in the fifth year of drought. EBMUD projects that with demand reduction actions and conservation, there will be no supply shortfalls (see **Table 10**).

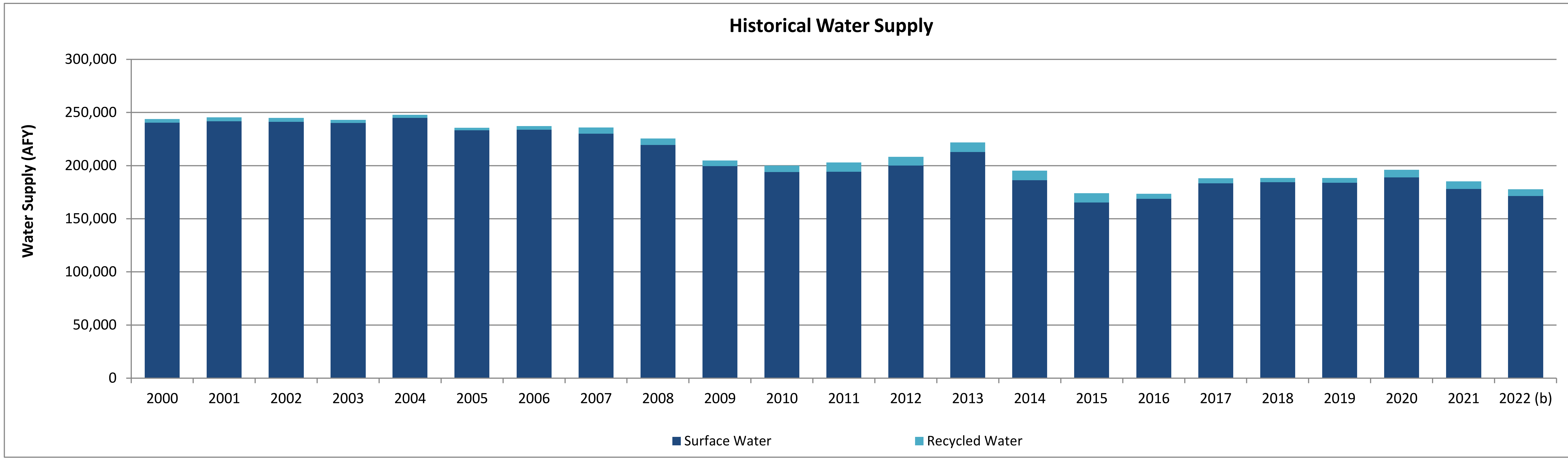
In the event of a drought, EBMUD plans to enact its Water Shortage Contingency Plan (WSCP), which includes Mandatory Staged Restrictions of Water Use. The WSCP systematically identifies ways in which EBMUD can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages and address water demand reductions over 50%. The WSCP for EBMUD was revised as part of the 2020 UWMP update process and includes detailed information about how drought risks are evaluated by EBMUD on an annual basis to determine the potential need for reductions. However, as mentioned in Section 6.1.1.3, during multi-year droughts the Mokelumne River and local runoff alone cannot meet EBMUD's projected customer demands, even with mandatory water use restrictions, and therefore EBMUD would need to rely on CVP deliveries during dry and critically dry periods. EBMUD exercised its CVP contract during the 2014-2015 drought period and received 18,641 AF and 33,250 AF of CVP water in 2014 and 2015, respectively, demonstrating EBMUD's ability to meet demands during periods of drought.

Table 6

Historical Water Supply for the East Bay Municipal Utility District

UCSF BCH Oakland New Hospital Building, Oakland, California

Water Supply Source	EBMUD Historical Water Supply (a) (AFY)																						
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022 (b)**
Surface Water	240,608	241,905	241,189	240,172	245,042	233,288	233,819	230,157	219,579	199,646	193,981	194,313	200,194	212,812	186,256	165,560	168,670	183,559	184,489	183,811	189,112	178,112	171,382
Recycled Water	3,149	3,631	3,598	2,967	2,665	2,361	3,359	5,675	5,924	5,229	6,028	8,627	7,974	9,013	8,945	8,559	4,811	4,718	3,989	4,404	6,896	7,145	6,384
Total Water Supply	**243,757**	**245,536**	**244,787**	**243,138**	**247,707**	**235,648**	**237,177**	**235,832**	**225,503**	**204,876**	**200,009**	**202,940**	**208,168**	**221,824**	**195,201**	**174,120**	**173,481**	**188,277**	**188,479**	**188,215**	**196,007**	**185,257**	**177,766**



Abbreviations:

"AFY" = acre feet per year

"BCH" = Benioff Children's Hospital

"EBMUD" = East Bay Municipal Utility District

"UCSF" = University of California - San Francisco

Notes:

(a) Historical water supply for per Reference 1.

(b) 2022 supply values are provisional.

References:

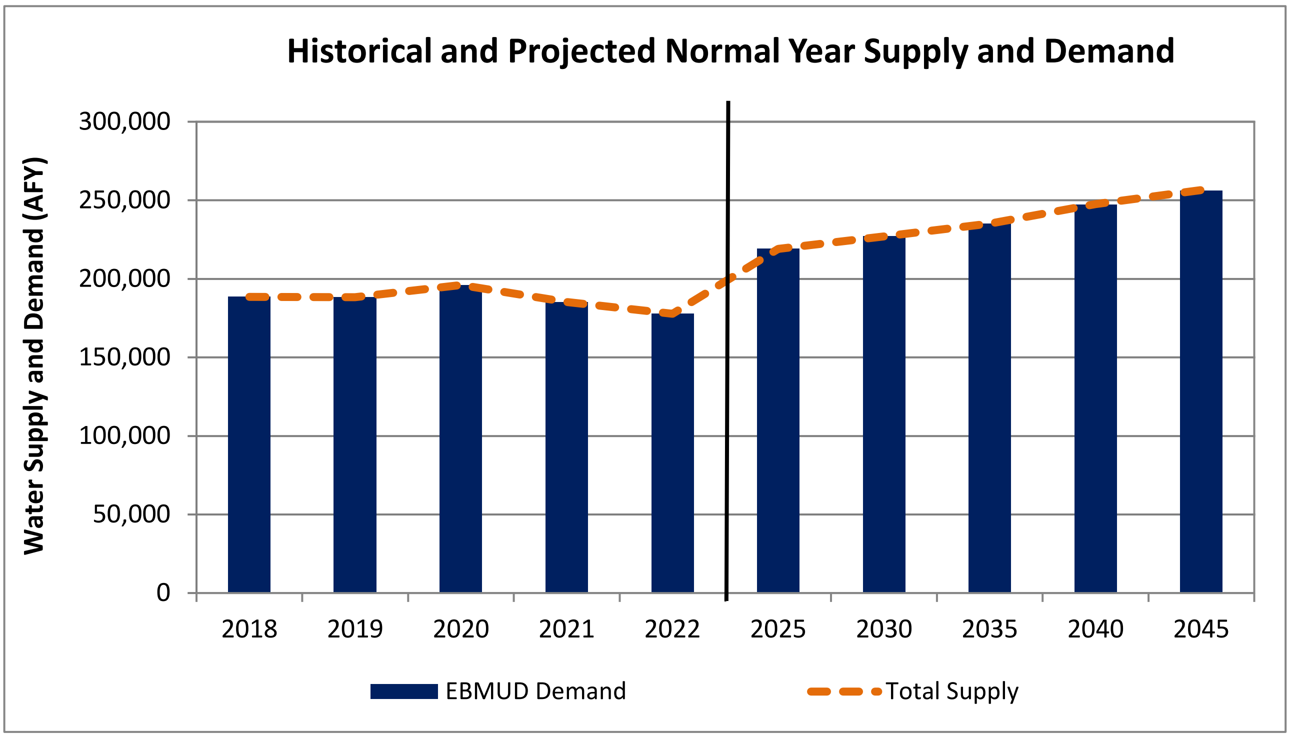
1. EBMUD, 2023. Historical Demand and Production Data Provided by EBMUD on 26 September 2023.

Table 7

Historical and Projected Water Supply and Demand by Source

UCSF BCH Oakland New Hospital Building, Oakland, California

Supply and Demand	Historical Supply and Demand (AFY)					Projected Supply and Demand (AFY)				
	2018	**2019**	**2020**	**2021**	**2022**	**2025**	**2030**	**2035**	**2040**	**2045**
Historical and Projected Demand										
EBMUD (a)	188,479	188,215	196,007	185,257	177,766	218,971	226,972	235,114	247,257	256,218
Proposed Project (b)	--	--	--	--	--	Included in EBMUD Demand Projections (c)				
Total Demand	**188,479**	**188,215**	**196,007**	**185,257**	**177,766**	**218,971**	**226,972**	**235,114**	**247,257**	**256,218**
Historical and Projected Supply (d)										
Surface Water	184,489	183,811	189,112	178,112	171,382	208,347	212,827	217,308	225,149	234,110
Recycled Water	3,989	4,404	6,896	7,145	6,384	10,640	14,157	17,922	22,403	22,403
Total Supply	**188,479**	**188,215**	**196,007**	**185,257**	**177,766**	**218,987**	**226,984**	**235,230**	**247,552**	**256,513**
Supply Minus Demand	***0***	***0***	***0***	***0***	***0***	***15***	***12***	***117***	***295***	***295***



Abbreviations:

"AFY" = acre-feet per year

"BCH" = Benioff Children's Hospital

"EBMUD" = East Bay Municipal Utility District

"Proposed Project" = UCSF BCH Oakland New Hospital Building

"UCSF" = University of California - San Francisco

"UWMP" = Urban Water Management Plan

Table 7

Historical and Projected Water Supply and Demand by Source

UCSF BCH Oakland New Hospital Building, Oakland, California

Notes:

(a) Historical demand per Reference 1 and projected demand per Reference 2.

(b) Rainwater capture and reuse is under consideration for the Proposed Project, as well as using graywater from mechanical equipment condensate and/or lavatories for landscape irrigation or toilet flushing. However, these have not been confirmed or quantified, and it is assumed that all demands for the Proposed Project will be met by potable water for purposes of this Water Supply Evaluation.

(c) The demands associated with the Proposed Project are within the growth anticipated for EBMUD and are accounted for in the 2020 UWMP demand projections.

(d) Historical supplies per Reference 1 and projected supplies per Reference 2.

References:

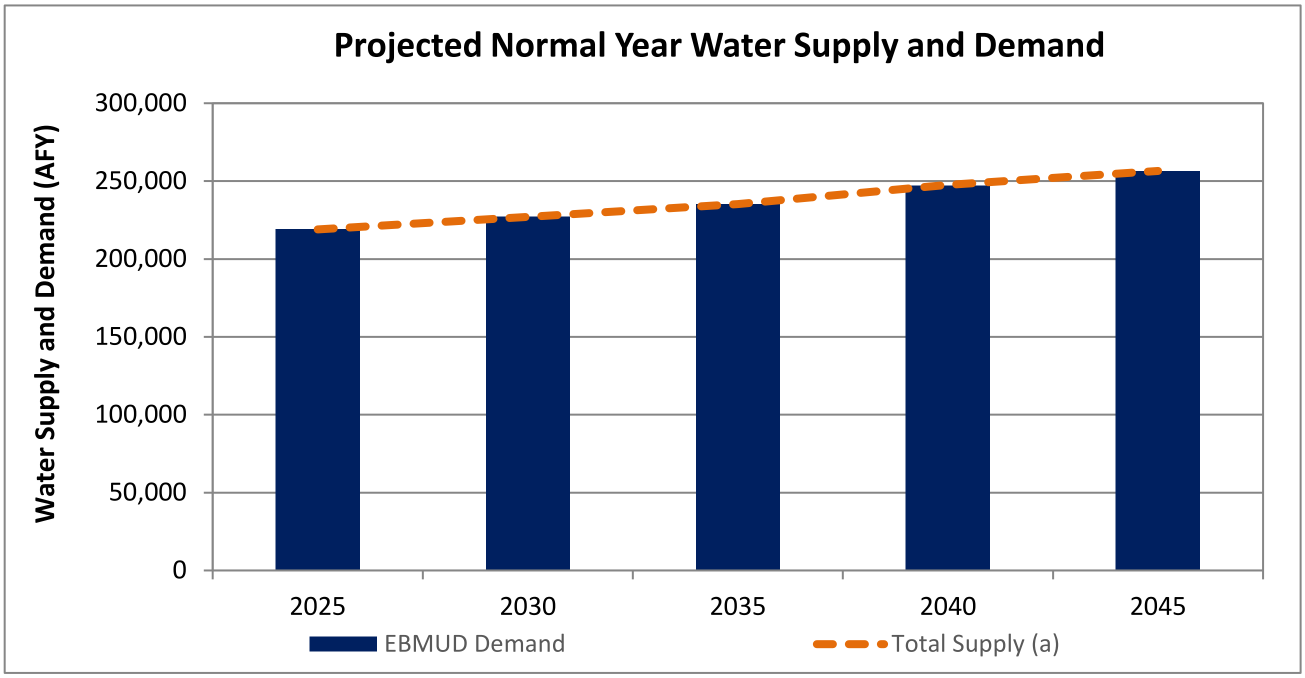
1. EBMUD, 2023. Historical Demand and Production Data Provided by EBMUD on 26 September 2023.
2. EBMUD, 2021. East Bay Municipal Utility District 2020 Urban Water Management Plan, prepared by EBMUD, dated June 2021.

Table 8

Projected Normal Year Water Supply and Demand

UCSF BCH Oakland New Hospital Building, Oakland, California

Supply and Demand	Projected Normal Year Supply and Demand (AFY)				
	2025	**2030**	**2035**	**2040**	**2045**
Total Supply (a)	218,987	226,984	235,230	247,552	256,513
Demand					
EBMUD	218,971	226,972	235,114	247,257	256,218
Proposed Project	Included in EBMUD Demand Projections (b)				
Total Potable Water Demand Inclusive of Project	**218,971**	**226,972**	**235,114**	**247,257**	**256,218**
Supply Shortfall (% demand)	***None***	***None***	***None***	***None***	***None***



Abbreviations:

"AFY" = acre-feet per year

"BCH" = Benioff Children's Hospital

"EBMUD" = East Bay Municipal Utility District

"Proposed Project" = UCSF BCH Oakland New Hospital Building

"UCSF" = University of California - San Francisco

"UWMP" = Urban Water Management Plan

Notes:

(a) Projected supplies and demands for EBMUD are per Reference 1.

(b) The demands associated with the Proposed Project are within the growth anticipated for EBMUD and are accounted for in the 2020 UWMP demand projections.

References:

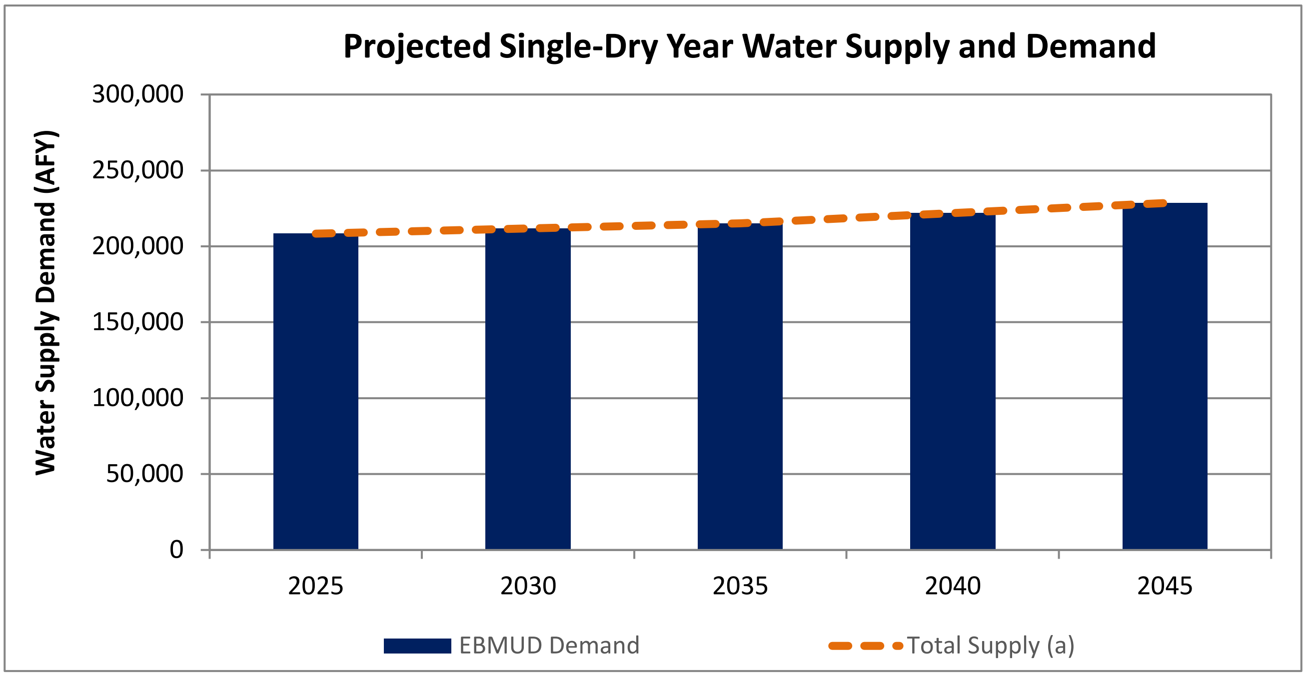
1. EBMUD, 2021. East Bay Municipal Utility District 2020 Urban Water Management Plan, prepared by EBMUD, dated June 2021.

Table 9

Projected Single Dry Year Water Supply and Demand

UCSF BCH Oakland New Hospital Building, Oakland, California

Supply and Demand	Projected Dry Year Supply and Demand (AFY)				
	2025	**2030**	**2035**	**2040**	**2045**
Total Supply (a)	208,347	211,707	215,068	221,789	228,509
Demand					
EBMUD	208,347	211,707	215,068	221,789	228,509
Proposed Project	Included in EBMUD Demand Projections (b)				
Total Potable Water Demand Inclusive of Project	**208,347**	**211,707**	**215,068**	**221,789**	**228,509**
Supply Shortfall (% demand)	***None***	***None***	***None***	***None***	***None***



Abbreviations:

"AFY" = acre-feet per year

"BCH" = Benioff Children's Hospital

"EBMUD" = East Bay Municipal Utility District

"Proposed Project" = UCSF BCH Oakland New Hospital Building

"UCSF" = University of California - San Francisco

"UWMP" = Urban Water Management Plan

Notes:

(a) Projected supplies for EBMUD are per Reference 1.

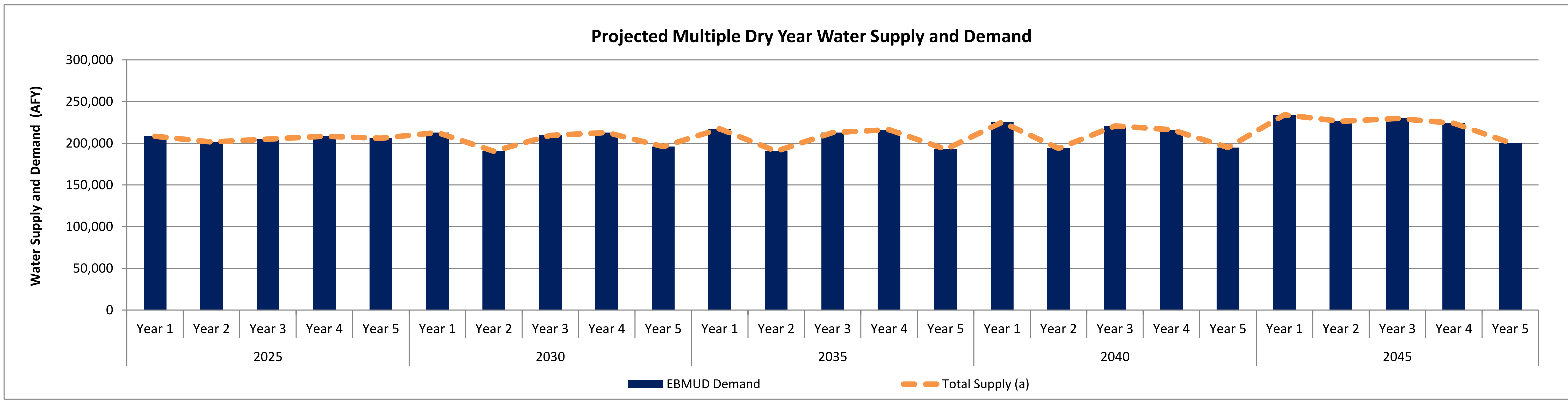
(b) The demands associated with the Proposed Project are within the growth anticipated for EBMUD and are accounted for in the 2020 UWMP demand projections.

References:

1. EBMUD, 2021. East Bay Municipal Utility District 2020 Urban Water Management Plan, prepared by EBMUD, dated June 2021.

Table 10
Projected Multiple Dry Year Water Supply and Demand
UCSF BCH Oakland New Hospital Building, Oakland, California

Supply and Demand	Projected Water Supply and Demand During Multiple Dry Years (AFY)																								
	2025					2030					2035					2040					2045				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Total Supply (a)	208,347	201,626	204,986	208,347	206,107	212,827	190,424	209,467	212,827	196,025	217,308	190,424	212,827	216,188	192,665	225,149	193,785	220,668	216,188	194,905	234,110	226,269	229,630	224,029	200,567
Demand																									
EBMUD	208,347	201,626	204,986	208,347	206,107	212,827	190,424	209,467	212,827	196,025	217,308	190,424	212,827	216,188	192,665	225,149	193,785	220,668	216,188	194,905	234,110	226,269	229,630	224,029	200,567
Proposed Project	Included in EBMUD Demand Projections (b)																								
Total Potable Water Demand Inclusive of Project	**208,347**	**201,626**	**204,986**	**208,347**	**206,107**	**212,827**	**190,424**	**209,467**	**212,827**	**196,025**	**217,308**	**190,424**	**212,827**	**216,188**	**192,665**	**225,149**	**193,785**	**220,668**	**216,188**	**194,905**	**234,110**	**226,269**	**229,630**	**224,029**	**200,567**
Supply Shortfall (% demand)	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***	***None***



Abbreviations:

"AFY" = acre-feet per year
"BCH" = Benioff Children's Hospital
"EBMUD" = East Bay Municipal Utility District
"Proposed Project" = UCSF BCH Oakland New Hospital Building
"UCSF" = University of California - San Francisco
"UWMP" = Urban Water Management Plan

Notes:

(a) Projected supplies for EBMUD are per Reference 1.
(b) The demands associated with the Proposed Project are within the growth anticipated for EBMUD and are accounted for in the 2020 UWMP demand projections.

References:

1. EBMUD, 2021. East Bay Municipal Utility District 2020 Urban Water Management Plan, prepared by EBMUD, dated June 2021.

7 COMPARISON OF SUPPLY AND DEMAND

This WSE includes an estimate of the projected water supplies available to the EBMUD service area under normal, single dry, and multiple dry years, and a discussion of whether those supplies will meet the projected demand associated with the Proposed Project, in addition to EBMUD's existing and planned future uses. As discussed in Section 5, the Proposed Project is not expected to result in an increase in water demands to EBMUD.

Table 8 through **Table 10** provide a comparison of the demands and supplies in normal year, single-dry year, and multiple dry year hydrologic scenarios for EBMUD. It is projected that available water supplies will be sufficient to meet the demands under normal year, single dry, and multiple dry year hydrologic conditions through 2045, inclusive of the Proposed Project.

As described in Section 6, in response to anticipated future dry-year shortfalls, EBMUD has developed a WSCP that systematically identifies ways in which EBMUD can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages ranging from 10% to greater than 50% shortfalls.

In 2016, Governor Brown signed Executive Order (EO) B-37-16 Making Water Conservation a California Way of Life and subsequently SB 606 and Assembly Bill (AB) 1668 were passed. SB 606/AB 1688 set new requirements for urban water agencies to continue to increase water efficiency beyond the 2020 water use targets developed under the Water Conservation Act of 2009 (SB X7-7). Beginning in 2023, agencies will be required to report on and comply with "annual water use objectives." The specific standards that will be used to determine an agency's annual water use objectives are currently under development but are expected to result in continued increases in efficiency for all urban water suppliers in the state. In addition, SB 606/AB 1668 add new requirements related to drought planning and WSCPs, including requirements for agencies to: (1) conduct a drought risk assessments part of their future UWMPs to assess water supply reliability for a period of drought lasting five consecutive water years (CWC §10635(b)), and (2) conduct annual water supply and demand assessments to determine its water supply reliability for the current year and one dry year (CWC §10632(a)). These elements are included in EBMUD's 2020 WSCP. During the 2015/2016 drought, EBMUD was subject to the SWRCB's mandatory water reduction target at 20% between June 2015 and June 2016.[11] During this period, EBMUD surpassed its reduction targets and achieved an average water demand reduction of 24% compared to its water use in 2013 (EBMUD, 2016; SWRCB, 2016).

[11] On 5 May 2015, the SWRCB adopted Resolution 2015-0032 that mandates minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation goal to each water supplier based on their R-GPCD. The Resolution was adopted pursuant to EO B-29-15 that directed SWRCB to impose mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage to address California's severe drought conditions. Based on its R-GPCD, EBMUD was required to reduce water use by 16% relative to its 2013 water use; however, EBMUD decided to adopt a 20% reduction standard instead (EBMUD, 2016). EBMUD exceeded their mandatory savings targets by June 2016.

On 26 April 2022, in response to Governor Newsom's EO N-7-22 and calls for water conservation from the SWRCB, EBMUD entered into Shortage Level 2 of its WSCP and implemented a Drought Stage 2 surcharge on 10 May 2022 (8% on each unit of potable water delivered on or after 1 July 2022). In 2022, EBMUD's average water use reduced by 8.0% compared to EBMUD's water use in 2020.

EBMUD is also striving to increase the water supply portfolio through: (1) investment in water conservation, (2) conjunctive use and groundwater banking (i.e., Bayside Groundwater Project and Eastern San Joaquin County Groundwater Banking/Exchange), (3) water transfers with various agencies (i.e., Placer County Water Agency, Yuba County Water Agency, Sycamore Mutual Water Company), (4) expansion of surface water storage, (5) the Bay Area Regional Desalination Project, (5) Bay Area Regional Partnerships (i.e., Bay Area Regional Reliability Project), and (6) infrastructure improvements (i.e., Upper San Leandro Water Treatment Plan [WTP] Reliability Project, Orinda WTP Disinfection Improvements, Sobrante WTP Reliability Project, Walnut Creek WTP Pre-Treatment Project, and Interties with Other Agencies).

Therefore, based on: (1) the projected reliability of the supply sources available to EBMUD, (2) the demonstrated effectiveness of EBMUD's WSCP in the case of supply shortages, (3) the increasing efficiency and drought planning requirements from the State, and (4) EBMUD's engagement in planned projects to increase its water supply portfolio and thus increase its water supply reliability, sufficient water supply is estimated to be available to EBMUD to meet future demands within the EBMUD's service area including those associated with the Proposed Project.

8 CONCLUSIONS

The primary purpose of this WSE is to evaluate whether sufficient water supply is available to meet all future water demands within the identified water supplier's service area, including those associated with the Proposed Project, during normal and dry hydrologic years for a 20-year time horizon.

As described in Section 4, the water demand of the Proposed Project (i.e., estimated at 91 AFY at full buildout) has been conservatively estimated, and as discussed in Section 5.3, the Proposed Project is considered to be within growth projected in EBMUD's 2020 UWMP and is not expected to result in a net increase in water demands for EBMUD.

This WSE concludes that demands associated with the Proposed Project were accounted for within the projected demands included in EBMUD's 2020 UWMP and will not affect water supply reliability within EBMUD's service area. Based on currently available information and conservative estimates of the projected demand of the Proposed Project, EBMUD should be able to meet all future demands within its existing EBMUD service area, inclusive of the Proposed Project in all hydrologic years (normal, single-dry, multi-dry) through 2045. In addition, as described herein and in EBMUD's 2020 UWMP, additional water supplies to improve supply reliability are currently being explored.

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Appendix A

Tables and Figures from the UCSF BCH New Hospital Building Project EIR Notice of Preparation

TABLE 1
EXISTING BUILDINGS AND STRUCTURES ON NHB PROJECT SITE

Reference No.[a]	Building/Structure	Construction Date	Number of Stories	Area (sq. ft.)
1.	Patient Tower	1980	5 stories	105,371
2.	Ford Diagnostic and Treatment (D&T) Center and Cardiac Catheterization Lab	1961	3 stories	45,958
3.	Cafeteria	1988	2 stories	7,779
4.	Western Addition	2009	3 stories	7,715
5.	Central Utility Plant	1982; improved in 1987	2 stories	12,217
6.	Chiller Building	2022	1 story	1,050
7.	Hospital Loading Dock	1982	1 story	637
8.	B/C Wing	1946	3 stories	33,510
9.	A/B Wing	1928	4 stories	45,177
10.	Bruce Lyon Memorial Research Laboratory	1958	2 stories	12,570
11.	Bruce Lyon Addition (Hematology/Oncology Administrative offices)	1992	3 stories	4,500
12	Temporary Trailer (MRI)	--	1 story	1,065
13.	Temporary Trailer (Facilities Design and Construction)	--	1 story	480
14.	Temporary Trailer (Ed Administration)	--	1 story	2,108
15.	Temporary Trailer (Social Services)	--	1 story	1,772
16.	Temporary Trailer (Center for Vulnerable Children [CVC])	--	1 story	4,555
17.	Temporary Trailer (Education/HIS)	--	1 story	1,779
18.	Temporary Trailer (Offices)	--	1 story	628
19.	Helistop Structure	2000	--	--

NOTE:
[a] Refer to Figure 2 for location of existing buildings/structures.

SOURCE: UCSF, 2023

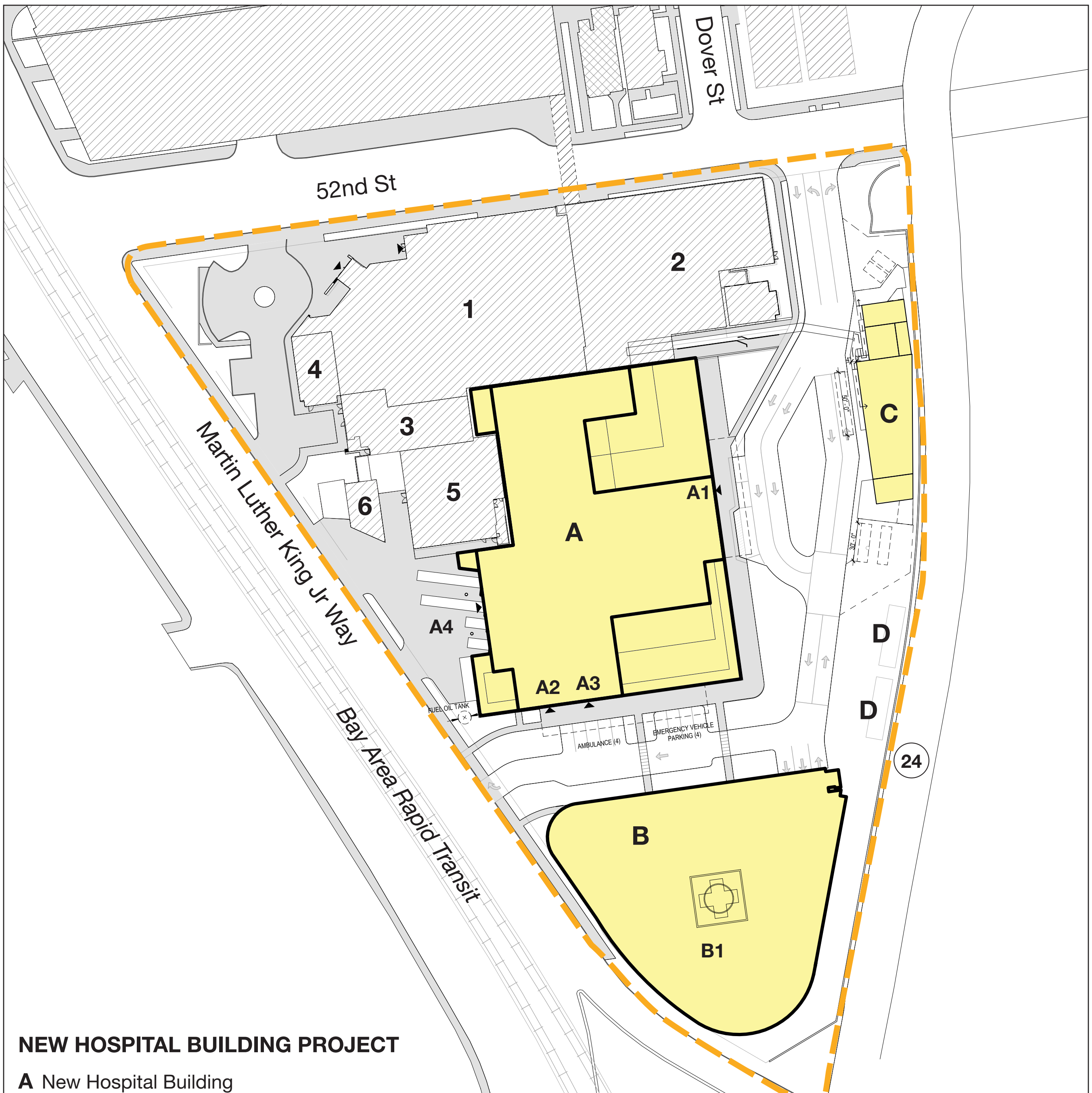
2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: ESA, 2023; Google Earth, 2023

UCSF BCH Oakland NHB Project

Figure 2
New Hospital Building Project Site

ESA



NEW HOSPITAL BUILDING PROJECT

A New Hospital Building

- **A1** New Emergency Department Entrance
- **A2** New Staff Entrance
- **A3** New Ambulance Dropoff
- **A4** New Loading Dock

B New Parking Garage

- **B1** Rooftop Helistop

C New Interim Loading Dock

D Generator Location

EXISTING BUILDINGS

1 Patient Tower

2 Ford Diagnostic and Treatment (D&T) and Cardiac Catheterization Lab

3 Cafeteria

4 Western Addition

5 Central Utility Plant

6 Chiller Building

New Buildings/ Structures

Existing Buildings

New Hospital Building Project Site

N

0 100

Feet

2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: SmithGroup, 2023; ESA, 2023

UCSF BCH Oakland NHB Project

Figure 3
New Hospital Building Project Site Plan

ESA

SOURCE: SmithGroup, 2023

UCSF BCH Oakland NHB Project

ESA

Figure 4
Conceptual Massing of Proposed Buildings under NHB Project

Trailers to be Demolished Separate from NHB Project

- Refer to Table 3-1 for Use

New Hospital Building Project Site

Building Demolition under NHB Project

Trailer to be Removed and Relocated Off-Site under NHB Project

N

0 100

Feet

2022/D202201057.00 - UCSF BCH Oakland/02 Graphics/Illustrator

SOURCE: ESA, 2023; Google Earth, 2023

Figure 3-5
Proposed Demolition Under New Hospital Building Project

ESA