600 ADDISON STREET PROJECT
INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

LSA

February 2021

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ZONING ADJUSTMENTS BOARD

Notice of Public Hearing – Project Preview and Intent to Adopt a Mitigated Negative Declaration

600 Addison Street

Project Preview and Notice of Intent to Adopt a Mitigated Negative Declaration for Use Permit #ZP2019-0215 to demolish buildings and structures on an industrial site of approximately 8.4 acres, and to construct a research and development (R&D) campus containing two buildings totaling 461,822 square feet of gross floor area and 924 parking spaces.

The Zoning Adjustments Board of the City of Berkeley will hold a public hearing on the above matter, pursuant to Zoning Ordinance Section 23B.32.020, on **February 25, 2021, conducted via Zoom, see the Agenda for details at:** ***https://www.cityofberkeley.info/uploadedFiles/Planning_and_Development/Level_3_-_ZAB/2021-02-25_Draft_ZAB_Agenda.pdf***.The meeting starts at 7:00 p.m. The purpose of this meeting is to solicit ZAB and community input on the project and Draft Initial Study/Mitigated Negative Declaration (Draft IS/MND), and the ZAB will not take any formal action on the project at this time.

PUBLIC ADVISORY: This meeting will be conducted exclusively through videoconference and teleconference. Pursuant to Section 3 of Executive Order N-29-20, issued by Governor Newsom on March 17, 2020, and the Shelter-in-Place Order, and to ensure the health and safety of the public by limiting human contact that could spread the COVID-19 virus, there will not be a physical meeting location available.

A. Land Use Designations:

- General Plan: Manufacturing
- West Berkeley Plan: Mixed Use-Light Industrial (MULI)
- Zoning: Mixed Use-Light Industrial (MULI)

B. Zoning Permits Required:

- Use Permit, under BMC Section 23C.08.050, to allow demolition of non-residential buildings
- Use Permit, under BMC Section 23E.80.050.C, to allow construction of 20,000 or more gross square feet of new floor area

- Use Permit, under BMC Section 23E.80.030, to establish more than 30,000 square feet of Office use
- Use Permit, under BMC Section 23E.80.045.B, to change more than 25 percent of the space used for manufacturing to another protected use
- Administrative Use Permit, under BMC Section 23E.80.045.A.2, to change up to 20,000 square feet of Warehouse to R&D use
- Administrative Use Permit, under BMC Section 23E.80.030, to establish more than 30,000 square feet of R&D use
- Administrative Use Permit, per BMC Section 23E.04.020, to allow rooftop projections to exceed the height limit up to 15 percent of the building footprint

C. CEQA Determination: Because an Initial Study identified potentially significant effects on the environment, but project revisions agreed to by the applicant would avoid or mitigate these effects to a point where clearly no significant effects could occur, a Draft Mitigated Negative Declaration was prepared. The project site is not on a list of sites as described by Government Code 65962.5 (Cleanup Program Site, State Water Resources Control Board). The Initial Study and Draft Mitigated Negative Declaration are available for public review at https://www.cityofberkeley.info/Planning_and_Development/Zoning_Adjustment_Board/600_Addison_-_ZP2019-0215.aspx. The City will receive comments on the Draft IS/MND from **Wednesday, February 10, 2021 through Thursday, March 11, 2021**.

D. Parties Involved:

- Applicant: Scott Smithers, Managing Principal, Berkeley Commons, LLC, 644 Menlo Avenue, Menlo Park, CA 94025
- Property Owner: Jason Jones Managing Member, Aquatic Park Science Center II, LLC, P.O. Box 183, Corte Madera, CA 94976

Further Information:
All application materials are available online at: https://www.cityofberkeley.info/zoningapplications/. The Zoning Adjustments Board final agenda and staff reports will be available online 6 days prior to this meeting at: https://www.cityofberkeley.info/zoningadjustmentsboard/.

Questions about the project should be directed to the project planner, Leslie Mendez, at (510) 981-7246 or LMendez@cityofberkeley.info.

Written comments or a request for a Notice of Decision should be directed to the Zoning Adjustments Board Secretary at zab@cityofberkeley.info.

Communication Disclaimer:
Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board, commission, or committee, will become part of the public record.** If you do not want your e-mail address or

any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission or committee for further information.

Communications and Reports:
Written comments must be directed to the ZAB Secretary at the Land Use Planning Division (Attn: ZAB Secretary), or via email to: zab@cityofberkeley.info. All materials will be made available via the Zoning Adjustments Board Agenda page online at this address: https://www.cityofberkeley.info/zoningadjustmentsboard/.

Communications and Reports:
Written comments must be directed to the ZAB Secretary at the Land Use Planning Division (Attn: ZAB Secretary), or via e-mail to: zab@cityofberkeley.info. All materials will be made available via the Zoning Adjustments Board Agenda page online at this address: https://www.cityofberkeley.info/zoningadjustmentboard/.

All persons are welcome to attend the virtual hearing and will be given an opportunity to address the Board. Comments may be made verbally at the public hearing and/or in writing before the hearing. The Board may limit the time granted to each speaker.

Correspondence received by 5:00 PM, eight days before this public hearing, will be provided with the agenda materials provided to the Board. Note that if you submit a hard copy document of more than 10 pages, or in color, or with photos, you must provide 15 copies. Correspondence received after this deadline will be conveyed to the Board in the following manner:

- **Correspondence received by 5:00 PM two days before** this public hearing, will be conveyed to the Board in a Supplemental Communications and Reports, which is released around noon one day before the public hearing; or
- **Correspondence received after 5:00 PM two days before** this public hearing will be saved in the project administrative record.

It will not be possible to submit written comments at the meeting.

Accessibility Information / ADA Disclaimer
To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6342 (V) or 981-6345 (TDD) at least three business days before the meeting date.

SB 343 Disclaimer
Any writings or documents provided to a majority of the Commission regarding any item on this agenda will be made available to the public. Please contact the Land Use Planning Division (zab@cityofberkeley.info) to request hard-copies or electronic copies.

Notice Concerning Your Legal Rights

If you object to a decision by the Zoning Adjustments Board regarding a land use permit project, the following requirements and restrictions apply:

1. If you challenge the decision of the City in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Zoning Adjustments Board at, or prior to, the public hearing.
2. You must appeal to the City Council within fourteen (14) days after the Notice of Decision of the action of the Zoning Adjustments Board is mailed. It is your obligation to notify the Land Use Planning Division in writing of your desire to receive a Notice of Decision when it is completed.
3. Pursuant to Code of Civil Procedure Section 1094.6(b) and Government Code Section 65009(c)(1), no lawsuit challenging a City Council decision, as defined by Code of Civil Procedure Section 1094.6(e), regarding a use permit, variance or other permit may be filed more than ninety (90) days after the date the decision becomes final, as defined in Code of Civil Procedure Section 1094.6(b). Any lawsuit not filed within that ninety (90) day period will be barred.
4. Pursuant to Government Code Section 66020(d)(1), notice is hereby given to the applicant that the 90-day protest period for any fees, dedications, reservations, or other exactions included in any permit approval begins upon final action by the City, and that any challenge must be filed within this 90-day period.
5. If you believe that this decision or any condition attached to it denies you any reasonable economic use of the subject property, was not sufficiently related to a legitimate public purpose, was not sufficiently proportional to any impact of the project, or for any other reason constitutes a “taking” of property for public use without just compensation under the California or United States Constitutions, the following requirements apply:
   A. That this belief is a basis of your appeal.
   B. Why you believe that the decision or condition constitutes a "taking" of property as set forth above.
   C. All evidence and argument in support of your belief that the decision or condition constitutes a “taking” as set forth above.

   If you do not do so, you will waive any legal right to claim that your property has been taken, both before the City Council and in court.

600 ADDISON STREET PROJECT
INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

Submitted to:

City of Berkeley
Planning and Development Department
Land Use Planning Division
1947 Center Street, 2nd Floor
Berkeley, California 94704

Prepared by:

LSA
157 Park Place
Pt. Richmond, California 94801
510.236.6810

Project No. CBE1906.01

LSA

February 2021

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LIST OF ABBREVIATIONS AND ACRONYMS

AC Transit	Alameda-Contra Costa County Transit District
ACMs	asbestos-containing materials
ACTC	Alameda County Transportation Commission
ACTC Model	Alameda County Transportation Commission Countywide Travel Demand Model
ACWMA	Alameda County Waste Management Authority
APN	Assessor's Parcel Number
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin Plan	San Francisco RWQCB Water Quality Control Plan
Bay Trail	San Francisco Bay Trail
BMC	Berkeley Municipal Code
BMP	Best Management Practices
BORP	Bay Area Outreach and Recreation Program
BUSD	Berkeley Unified School District
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	City of Berkeley Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations

CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CGP	Statewide Stormwater Construction General Permit
CGS	California Geological Survey
CH_4	methane
City	City of Berkeley
Clean Air Plan	Bay Area Air Quality Management District 2017 Clean Air Plan
CLOMR-F	Conditional Letter of Map Revision based on fill
CMP	Corrective Measures Plan
CNDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
COA	Condition of Approval
Corps	U.S. Army Corps of Engineers
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CWA	Federal Clean Water Act
dB	decibel
dBA	A-weighted sound level
dbh	diameters at breast height

DDT	dichlorodiphenyltrichloroethane
DIR	California Department of Industrial Relations
DOSH	Division of Occupational Safety and Health
DRC	Design Review Committee
DTSC	Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EMA	Environmental Management Area
EV	electric vehicle
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FHWA RD-77-108	Federal Highway Administration Highway Traffic Noise Prediction Model
FIRM	Flood Insurance Rate Map
GHG	greenhouse gas
GWP	Global Warming Potential
HASP	Health and Safety Plan
HFC	hydrofluorocarbon
HMBP	Hazardous Materials Business Plan
I-580	Interstate 580
I-80	Interstate 80, aka Bayshore Highway
IS/MND	Initial Study/Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
LBP	lead-based paints
L_{dn}	day-night average level
LEED	Leadership in Energy and Environmental Design

L_{eq}	equivalent continuous sound level
Lisjan Tribe	Confederated Villages of Lisjan
L_{max}	maximum sound level during a measurement period or a noise event
LOMR-F	Letter of Map Revision based on fill
LOS	level of service
LUST	leaking underground storage tank
MEI	maximally exposed individual
mgd	million gallons per day
MLD	Most Likely Descendent
mpg	miles per gallon
MRP	Municipal Regional Permit
MTC	Metropolitan Transportation Commission
MULI	Mixed Use-Light Industrial
MWWTP	Main Wastewater Treatment Plant
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_x	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
OCP	organochlorine pesticide
OEHHA	Office of Environmental Health Hazard Assessment
OPR	State of California Office of Planning and Research

Orinda WTP	East Bay Municipal Utility District Orinda Water Treatment Plant
OSHA	U.S. Department of Labor, Occupational Safety and Health Administration
PAHs	polycyclic aromatic hydrocarbons
Pb	lead
PCB	polychlorinated biphenyl
PCE	tetrachloroethane
PEA	Preliminary Endangerment Assessment
PFC	perfluorocarbon
PGA	peak ground acceleration
Phase I ESA	Phase I Environmental Site Assessment
PM_{10}, $PM_{2.5}$	particulate matter
POTWs	publicly owned treatment works
PRC	Public Resources Code
Project	600 Addison Street Project
PRW	Parks, Recreation and Waterfront Department
PV	photovoltaic
R&D	research and development
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
rms	root mean square
ROG	reactive organic gas
RWQCB	San Francisco Regional Water Quality Control Board
SB50	Senate Bill 50
SDS	Safety Data Sheet

SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SGMP	Soil and Groundwater Management Plan
Shellmound	West Berkeley Shellmound
SO_2	sulfur dioxide
SRA	State Responsibility Area
State Water Board	State Water Resources Control Board
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminant
TDM	Transportation Demand Management
TIA	Transportation Impact Analysis
TMD	City of Berkeley Toxics Management Division
TMDL	Total Maximum Daily Load
TPA	Transit Priority Area
TPF	Tree Protection Fencing
TPH	total petroleum hydrocarbon
$\mu g/m^3$	micrograms per cubic meter
UC Berkeley	University of California, Berkeley
UPRR	Union Pacific Railroad
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VdB	vibration levels from noise
VDECS	Verified Diesel Emission Control Strategies

VMT	vehicle miles traveled
VOC	volatile organic compound
WSMP	Water Supply Management Program
ZAB	Zoning Adjustments Board
Zoning Ordinance	City of Berkeley Zoning Ordinance (Berkeley Municipal Code Title 23)

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CITY OF BERKELEY
LAND USE PLANNING
I N I T I A L
S T U D Y

1.0 PROJECT INFORMATION

The following is a Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the proposed 600 Addison Street Project (Project). An overview of the Project site location and existing characteristics is followed by a description of the proposed development and a summary of requested approvals and entitlements. Copies of all materials referenced in this report are available for review on the City's website at: https://www.cityofberkeley.info/Planning_and_Development/Zoning_Adjustment_Board/600_Addison_-_ZP2019-0215.aspx.

1. **Project Title:**

   600 Addison Street Project

2. **Lead Agency Name and Address:**

   City of Berkeley (City)
   1947 Center Street, 2nd Floor
   Berkeley, California 94704

3. **Contact Person and Phone Number:**

   Leslie Mendez, Senior Planner
   Planning and Development Department
   Land Use Planning Division
   Phone: (510) 981-7426
   Email: lmendez@cityofberkeley.info

4. **Project Sponsor's Name and Address:**

   Berkeley Commons, LLC
   644 Menlo Avenue
   Menlo Park, California 94025

5. **General Plan Designation:**

   City of Berkeley General Plan: Manufacturing
   West Berkeley Plan: Mixed Use-Light Industrial (MULI)

6. **Zoning:**

   Mixed Use-Light Industrial (MULI)

7. Project Location:

The approximately 8.4-acre Project site is located in the City of Berkeley in Alameda County. The site is bounded by Addison Street to the north, the Union Pacific Railroad (UPRR) tracks to the east, Bancroft Way to the south, and Bolivar Drive and Aquatic Park to the west.

Regional vehicular access to the Project site is provided by Interstate 80 (I-80) and Interstate 580 (I-580), access to which is provided approximately one block north via the University Avenue overpass. Local access is primarily via University Avenue, which is an arterial roadway with direct access from I-80, and Addison Street and Bancroft Way, which are both local streets. Transit in the Project vicinity includes the Berkeley Amtrak Station and extensive bus transit service provided by Alameda-Contra Costa County Transit (AC Transit); the Amtrak Station and closest bus stops are each located approximately one block north of the site on University Avenue.

Figure 1-1 depicts the site's regional and local context.

8. Description of Project:

The existing site conditions and the proposed Project are described below.

Site Characteristics and Current Site Conditions. The generally rectangular Project site is comprised of six parcels of land under a single parcel number (Assessor's Parcel Number [APN] 056-1952-000201), with elevations that range between 5 and 25 feet above sea level. The topography of the site generally slopes upwards from west to east with gentle slopes occurring over most of the site and a more moderate slope at the southern portion of the site. The majority of the site is elevated between approximately 10 and 15 feet above Bolivar Drive. The site is developed with three buildings totaling approximately 55,000 square feet, an outdoor soil/mulch stockpiling and transfer facility, and associated surface parking, utility infrastructure, and landscaping. Currently, a total of 87 employees work on site.

Vehicular access to the site is currently via three driveways located on Addison Street and one on Bolivar Drive. A private driveway is also located on Bancroft Way and provides through access to Addison Street and along the eastern border of the site (this private driveway is also known as Third Street). A total of 130 existing surface parking spaces are located on the site and are shared by building tenants. Vegetation within the boundaries of the Project site consists of ornamental landscaping, ruderal grasses and shrubs, and approximately 61 trees. The entirety of the Project site is fenced, and public access is prohibited by gate closures during non-business hours.

Figure 1-2 depicts an aerial view of the Project site and Figure 1-3 depicts existing site conditions. Existing uses on the site are described in greater detail below by property address and photos of existing site conditions are depicted in Figures 1-4 and 1-5; viewpoint locations are shown in Figure 1-2.

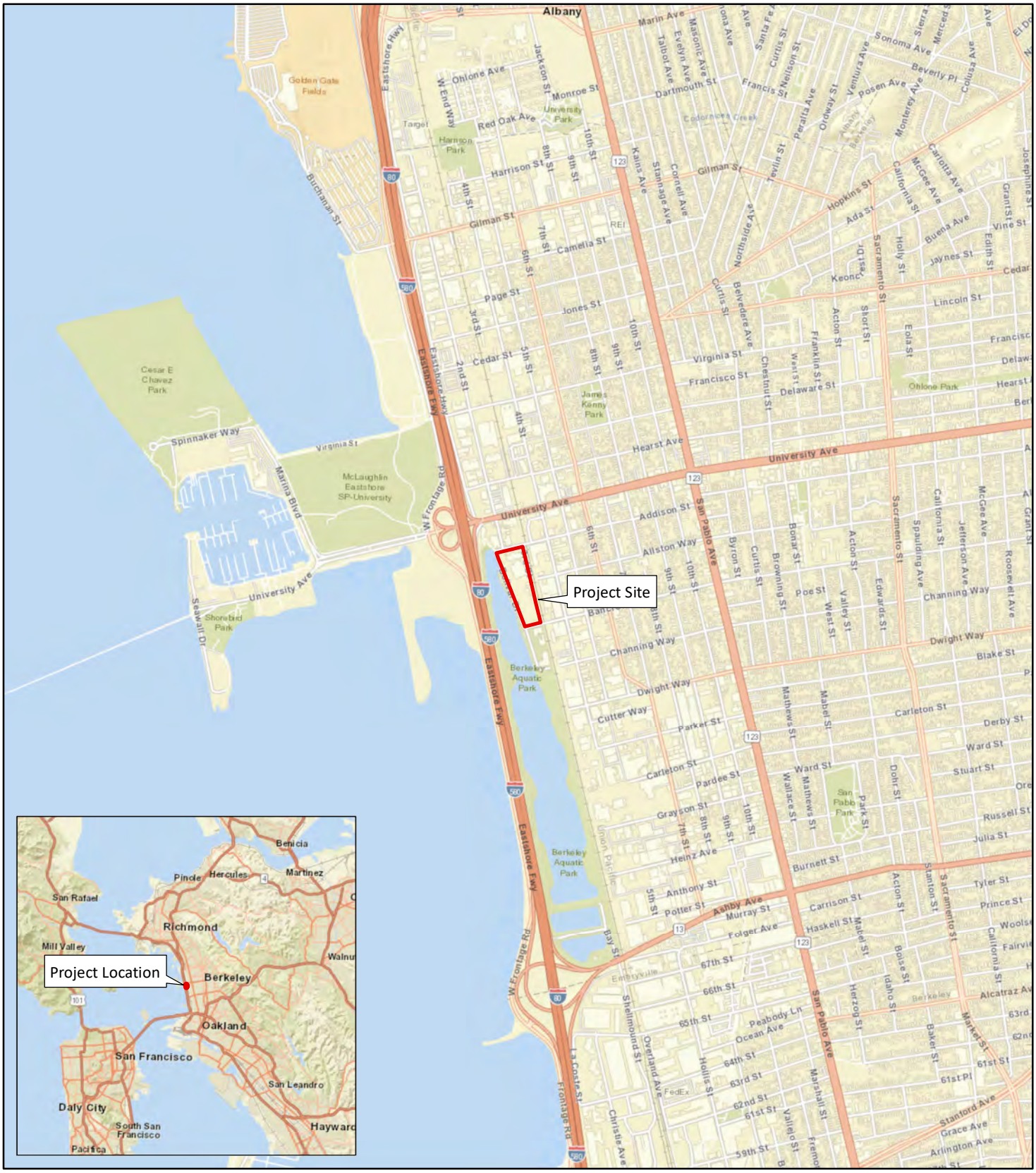

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FIGURE 1-1

N

0 1000 2000
FEET

SOURCE: ESRI StreetMap North America, National Geographic.

600 Addison Street Project IS/MND

Project Location and Regional Vicinity

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\Figure 1-1_Project Location and Regional Vicinity Map.pdf (1/27/2021)

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FIGURE 1-2

0 250 500
FEET

PROJECT TRUE N

Project Site

7 Photo Locations
(see Figures 1-4 and 1-5)

600 Addison Street Project IS/MND

Aerial Photograph of the Project Site and Photo Locations

SOURCES: GOOGLE EARTH, 3/29/18; LSA, 2020.

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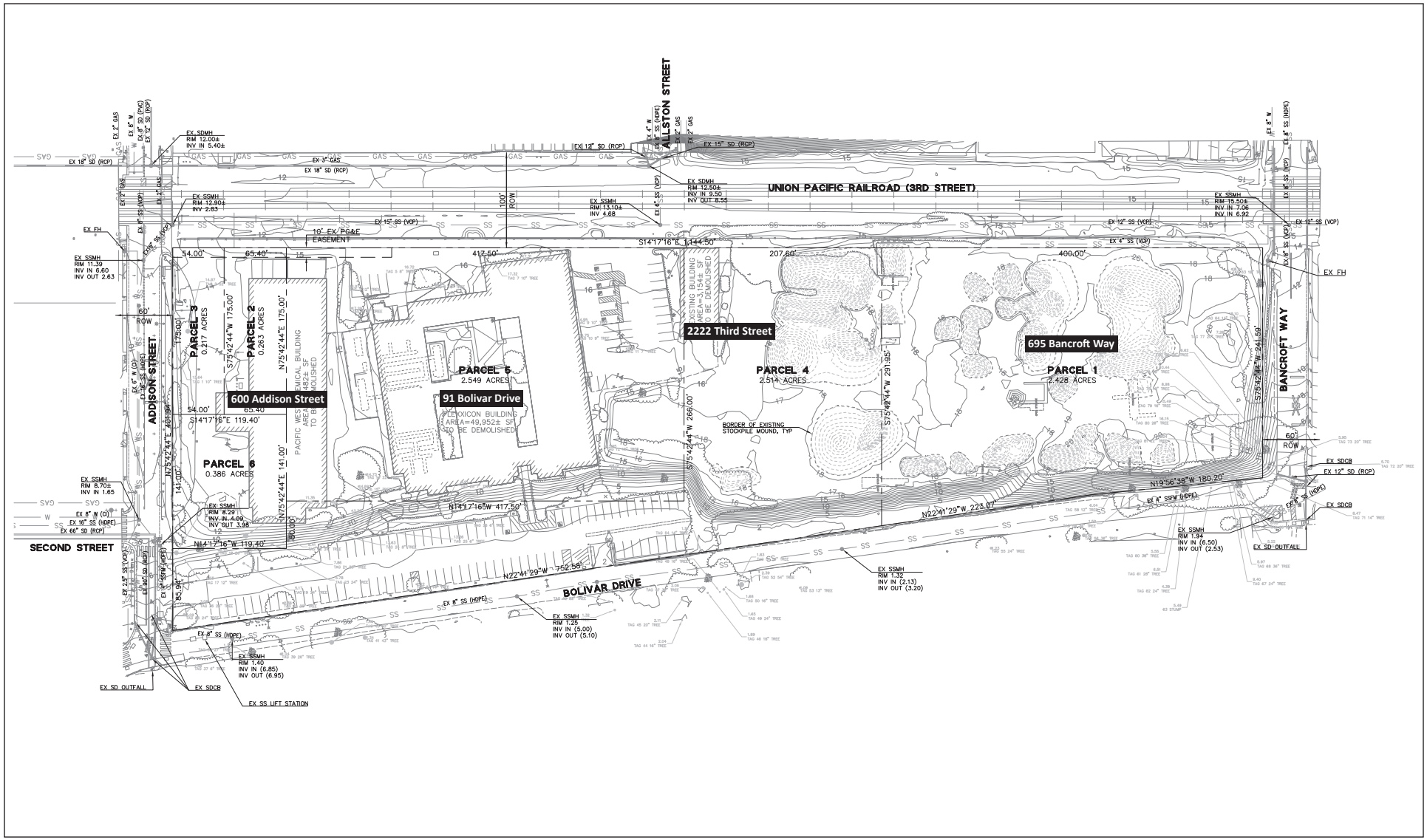

LSA

FIGURE 1-3

0 50 100
FEET

N

600 Addison Street Project IS/MND

Existing Site Conditions

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2019.

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Photo 1: Existing warehouse building on the 600 Addison Street property, as seen from Addison Street / UPRR tracks

Photo 2: Existing research and development building on the 91 Bolivar Drive property, as seen from Bolivar Drive

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FIGURE 1-4

600 Addison Street Project IS/MND

Existing Site Photos

SOURCE: LSA, 2020.

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Photo 3: Existing warehouse building on the 2222 Third Street property, as seen from the site interior

Photo 4: Existing soil and mulch storage facility on the 2222 Third Street property, as seen from Bancroft Way / UPRR tracks

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FIGURE 1-5

600 Addison Street Project IS/MND

Existing Site Photos

SOURCE: LSA, 2020.

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600 Addison Street. The 600 Addison Street property is located at the northernmost portion of the site and consists of a single-story, approximately 36-foot-tall, 20,000-square-foot building constructed in 1981 (refer to Photo 1 in Figure 1-4). The building faces Addison Street and an interior surface parking lot. Landscaping is located along the northern property line, along the length of Addison Street and also along the western portion of the property. Access to this property is primarily via the onsite private driveway (Third Street) located at the intersection of Addison Street and the UPRR corridor. A second driveway is located further west on Addison Street.

The 600 Addison Street building was occupied by Audubon Wine Cellars until 2005 and is currently occupied by research and development (R&D) uses, including the Berkeley Research Company (approximately 10,000 square feet) and Fathom Engineering (approximately 7,000 square feet). The remaining office spaces are occupied by the property owner.

91 Bolivar Drive. The 91 Bolivar Drive property occupies the center of the site, immediately south of the 600 Addison Street building. This property consists of a single-story, approximately 15-foot-tall, 32,000-square-foot building originally constructed in 1969 (refer to Photo 2 in Figure 1-4). Subsequent building additions occurred in 1979 and 1987. The building faces Bolivar Drive and an internal surface parking lot. Approximately 13 outdoor lights mounted on poles provide exterior lighting for the parking lot. Landscaping is located along the entire building frontage, which is elevated above the adjacent surface parking lot. A narrow strip of landscaping also runs the length of the property along Bolivar Drive. Access to the parking lot is via a two-way driveway on Addison Street and an ingress-only driveway on Bolivar Drive. The Bolivar Drive entry is controlled by a mechanical gate and key-card entry.

The 91 Bolivar Drive building was occupied by Lawrence Berkeley National Laboratory from approximately 1980 to 1999. The building is currently occupied by Plexxicon, an R&D laboratory.

2222 Third Street/695 Bancroft Way. The 2222 Third Street/695 Bancroft Way property occupies the southern half of the site, immediately south of the 91 Bolivar Drive building. This property consists of a single-story, 19-foot-tall, 3,000-square-foot warehouse building constructed in approximately 1921 (refer to Photo 3 on Figure 1-5) and an outdoor soil/mulch stockpiling and transfer facility (refer to Photo 4 on Figure 1-5). The warehouse building is located adjacent to the UPRR tracks and faces an internal parking lot and driveway located to the north and south of the building. The soil/mulch stockpiling facility occupies the remaining 4 acres of the site and the outdoor stock pile areas are underlain by a concrete pad. Vegetation on this property consists of ruderal grasses and mature trees along the Bolivar Drive and Bancroft Way frontages, including one protected oak tree at the southeast corner of the site, adjacent to Bancroft Way. Access to the warehouse building is via the site entrance at Addison Street near the UPRR tracks. Access to the soil facility is generally via the entrance at Bancroft Way.

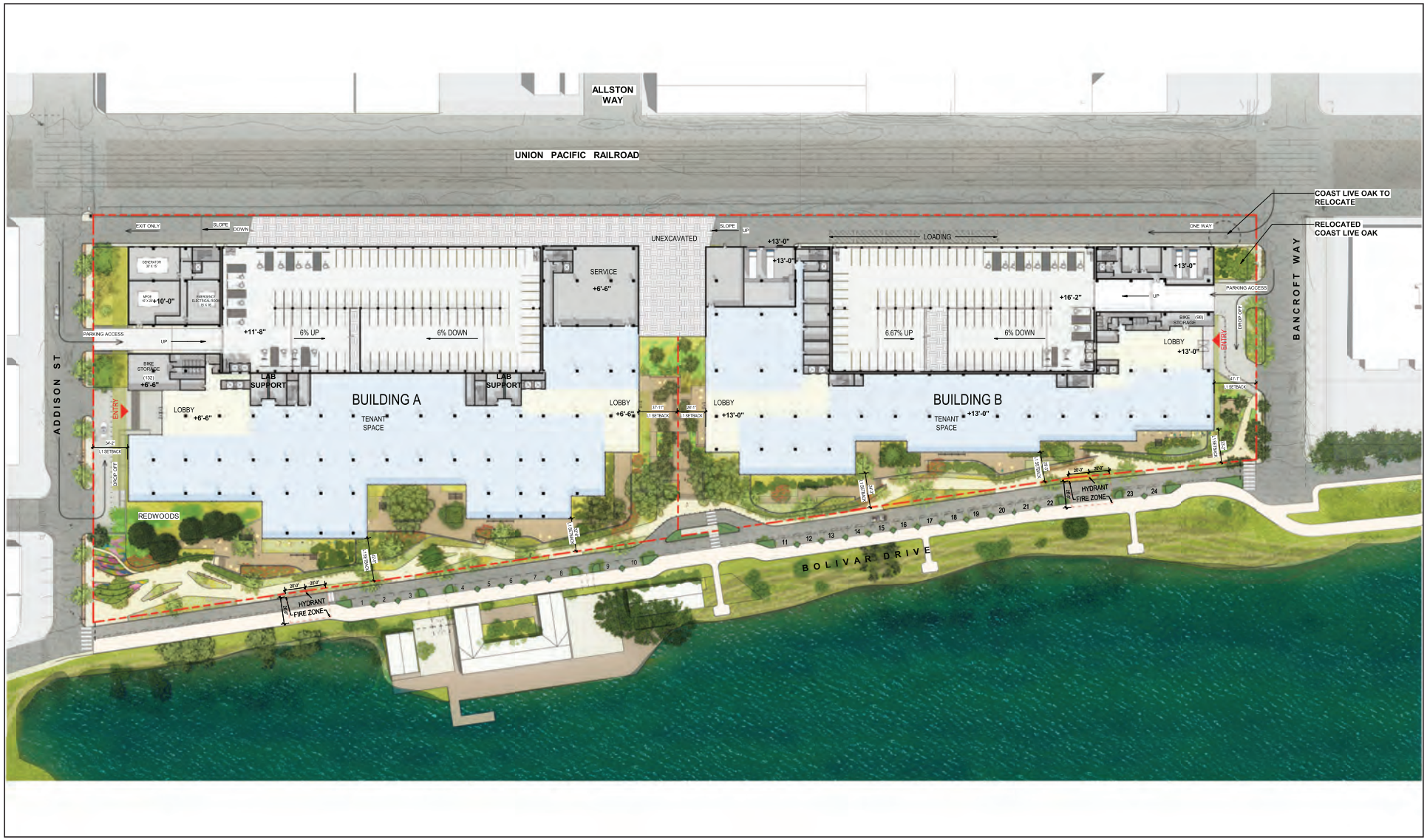
The 2222 Third Street warehouse building is occupied by OpenROV, an R&D/manufacturing business and the soil facility located at 2222 Third Street and 695 Bancroft Way has been occupied by American Soil Products since the early 1990s.

Proposed Project. This section provides a description of the proposed Project as identified in the Project application materials submitted to the City of Berkeley and dated November 5, 2020, with supplemental project materials provided January 25, 2021. The Project applicant is proposing to reconfigure the Project site into two parcels and redevelop the site with a R&D and Office campus that would accommodate research, innovation, lab, and/or office uses depending on the needs of the building tenant(s), which have not yet been identified. The proposed Project would consist of two separate R&D/Office buildings, referred to as Buildings A and B, totaling approximately 461,822 gross square feet, each with their own separate, four-story parking structure that would provide a total of 924 parking spaces. In addition, the proposed Project would include off-site streetscape enhancements to Bolivar Drive along the Project site frontage and continuing south to where the roadway ends.

Figure 1-6 depicts the conceptual ground level site plan for the proposed Project. Figures 1-7 through 1-9 depict the second, third, and roof levels, respectively. Figures 1-10 through 1-13 depict conceptual elevations for both buildings and Figures 1-14 and 1-15 depict typical conceptual building sections. Individual Project components are described in detail below.

Building Program. As described above, the proposed Project would result in redevelopment of the site with an R&D campus consisting of two buildings, both of which would front Bolivar Drive, as well as two separate parking structures that would be located at the rear of the site, adjacent to the UPRR tracks. Building A, which would be located in the northern portion of the Project site on an approximately 4.8-acre parcel, would be a three-story building with an average height of approximately 45 feet and a gross floor area of approximately 264,947 square feet. Building A would have a floor area ratio (FAR) of approximately 1.28, and 45,538 square feet of common outdoor and landscaped area. The parking structure for Building A (Parking Structure A) would also have an average height of 45 feet and would contain 530 automobile parking spaces across 4 stories. Building setbacks would vary, with a minimum setback of approximately 20 feet, 1 inch from Bolivar Drive (averaging 25 feet); 17 feet, 9 inches from Addison Street; and 30 feet, 6 inches from the eastern border of the Project site adjacent to the UPRR tracks. It is estimated that proposed projections (e.g., elevator overruns or mechanical features) would extend approximately 17 feet beyond the roofline of Building A. Parking Structure A would also include rooftop solar equipment that would extend beyond its roofline.

Building B, which would be located in the southern portion of the Project site on an approximately 3.6-acre parcel, would also be a three-story building with an average height of approximately 45 feet, but would be slightly smaller than Building A, with a total of approximately 196,875 square feet of gross floor area. Building B would have an FAR of approximately 1.25 and 29,299 square feet of common outdoor and landscaped area. The parking structure for Building B (Parking Structure B) would also have an average height of 45 feet and would contain 394 parking spaces across four stories. Building setbacks would vary, with a minimum setback of approximately 16 feet, 9 inches from Bolivar Drive (averaging 25 feet); 35 feet, 5 inches from Bancroft Way; and 28 feet, 1 inch from the eastern border of the project site adjacent to the UPRR tracks. It is estimated that proposed projections (e.g., elevator overruns or mechanical features) would extend approximately 17 feet beyond the roofline of Building B. Parking Structure B would also include rooftop solar equipment that would extend beyond its roofline.



LSA

FIGURE 1-6

0 50 100
FEET

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021

600 Addison Street Project IS/MND

Conceptual Ground Level Site Plan

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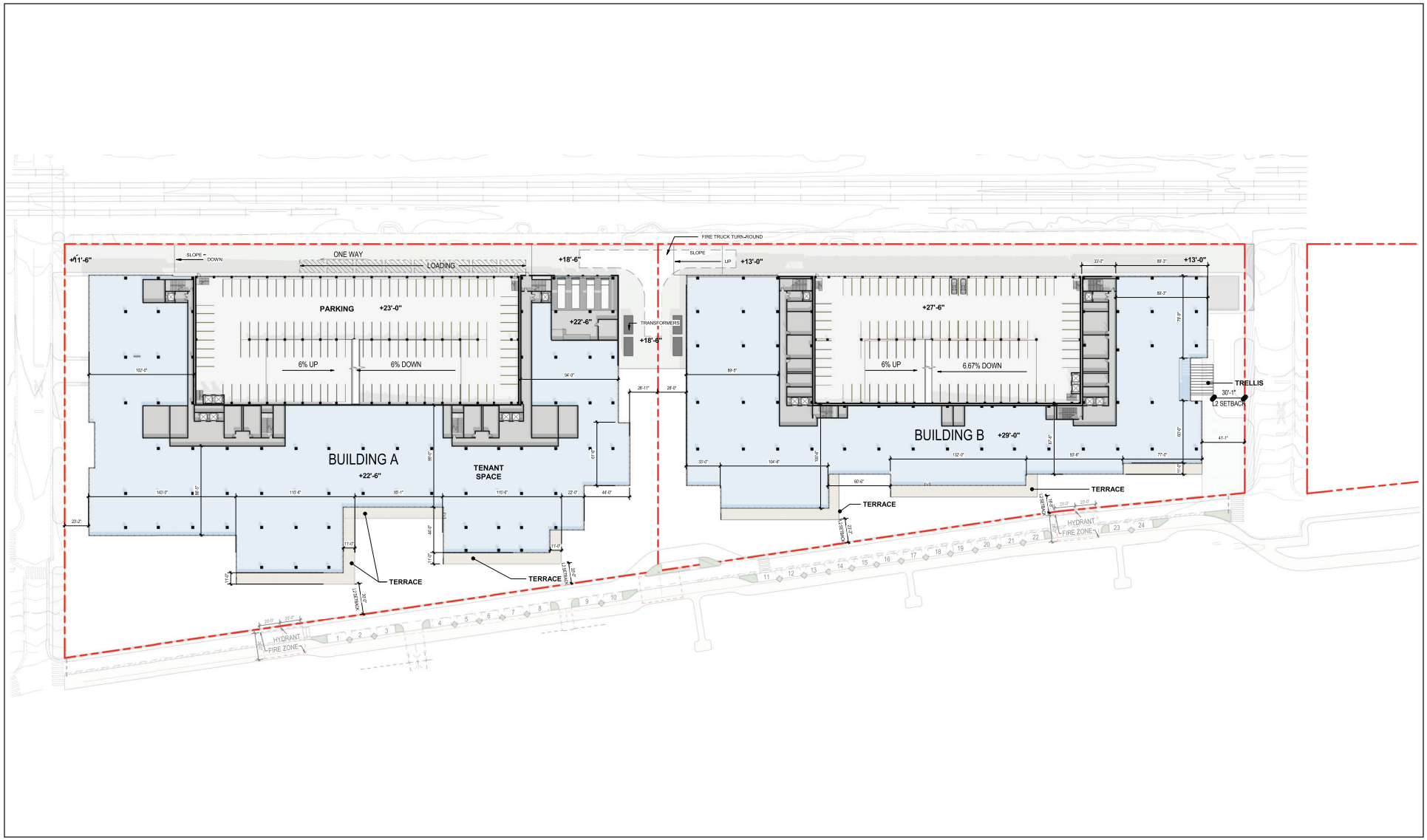

LSA

FIGURE 1-7

N

0 50 100
FEET

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021

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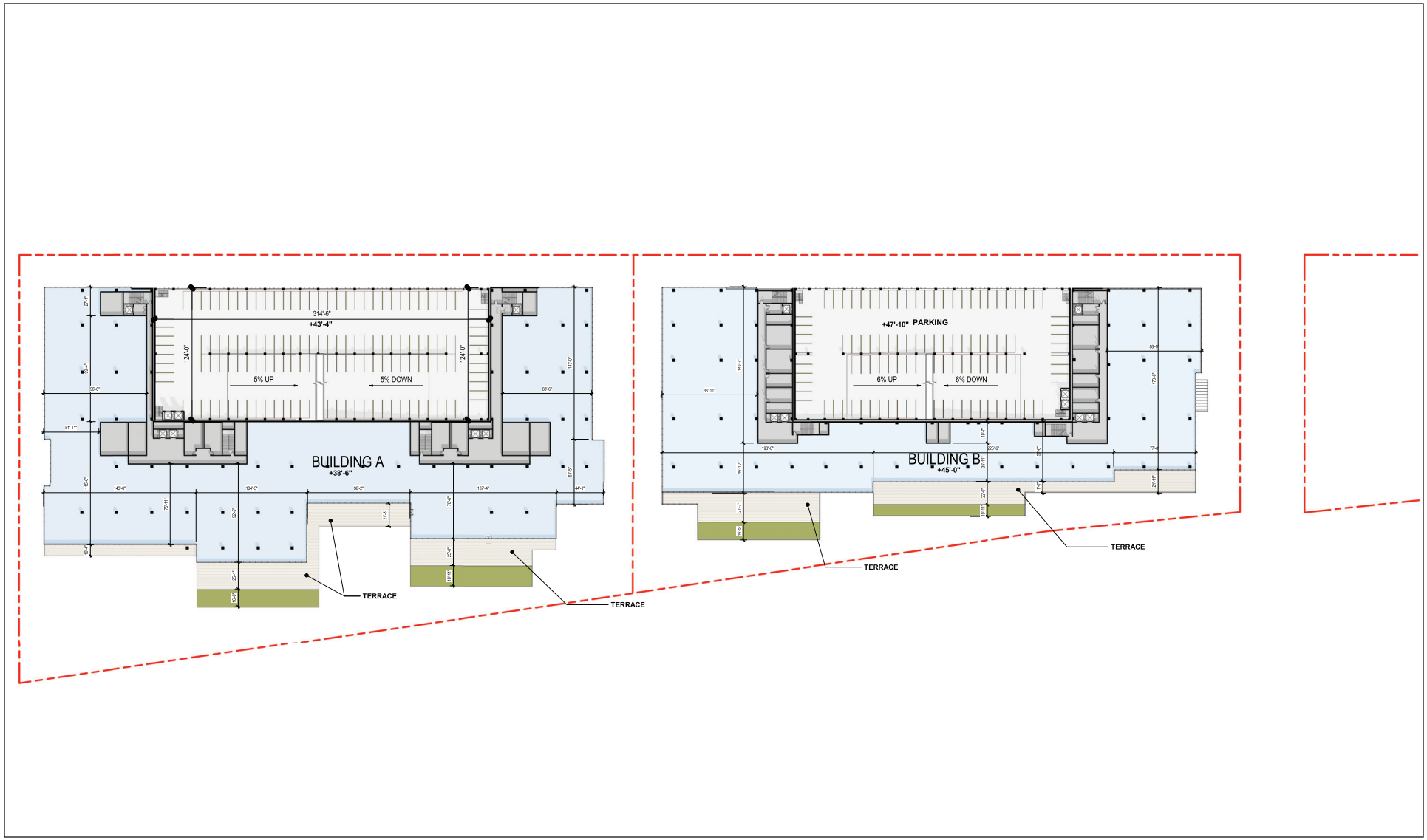
600 Addison Street Project IS/MND

Conceptual Second Level Plan



LSA

FIGURE 1-8

N

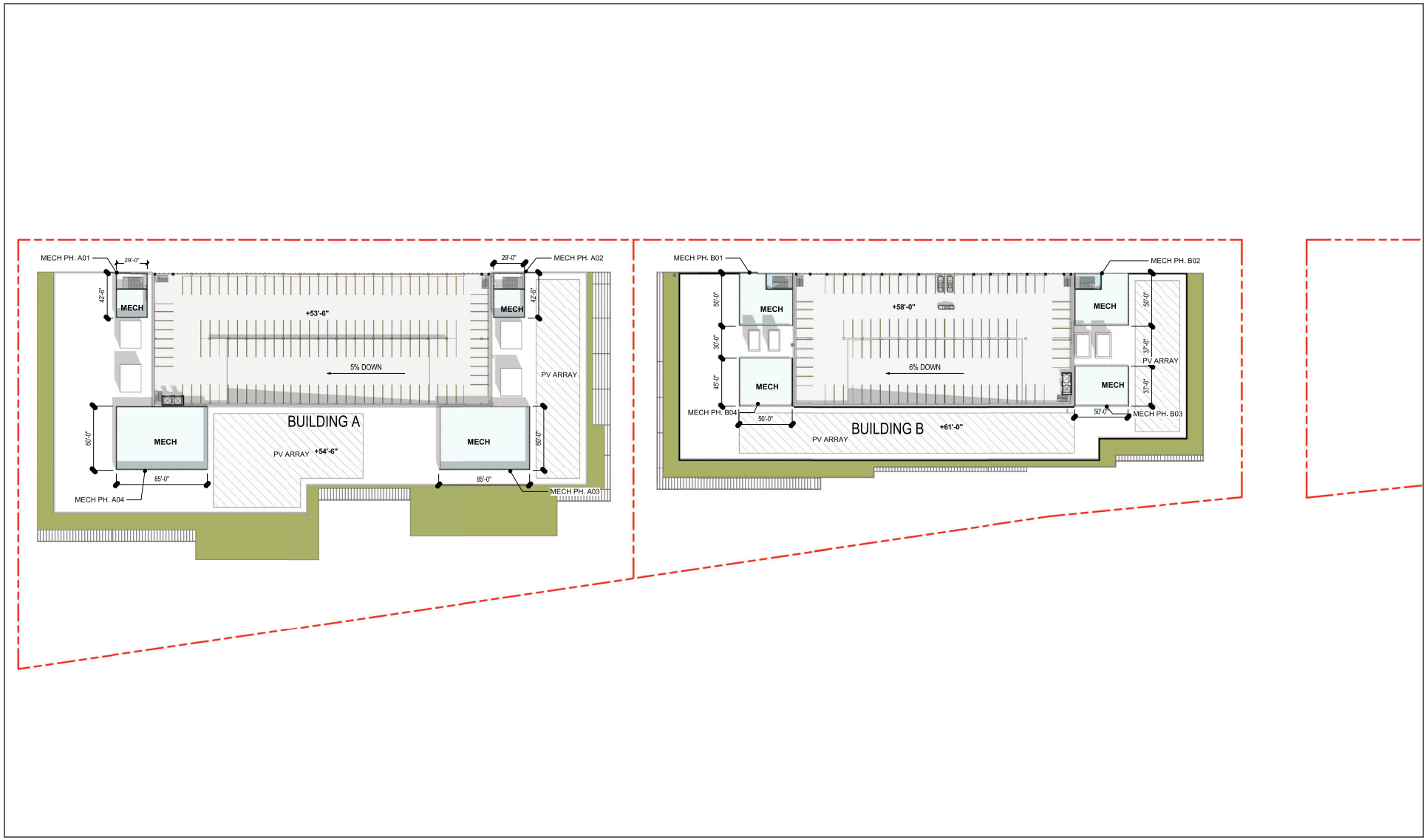
0 50 100
FEET

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021

600 Addison Street Project IS/MND

Conceptual Third Level Plan

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\\Figure_1-8.ai (2/1/2021)



LSA

FIGURE 1-9

N

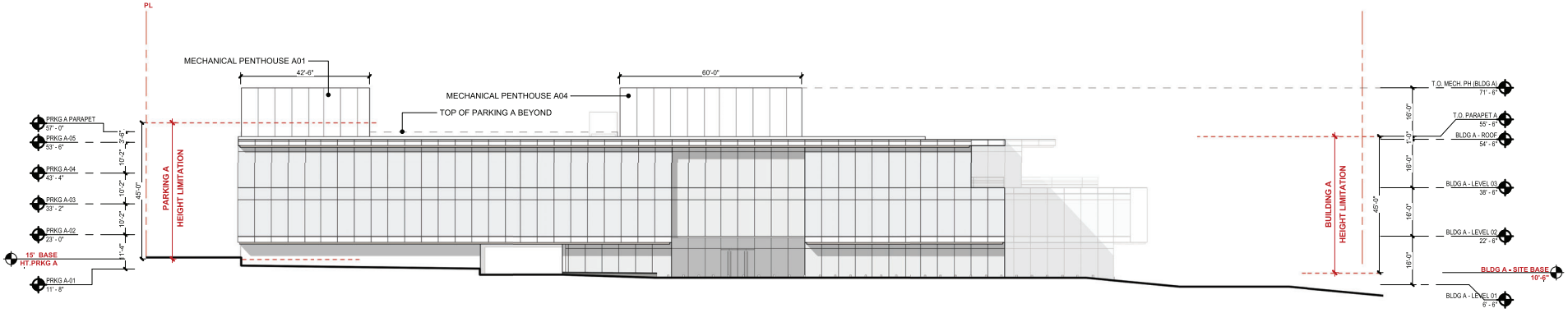
0 50 100
FEET

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

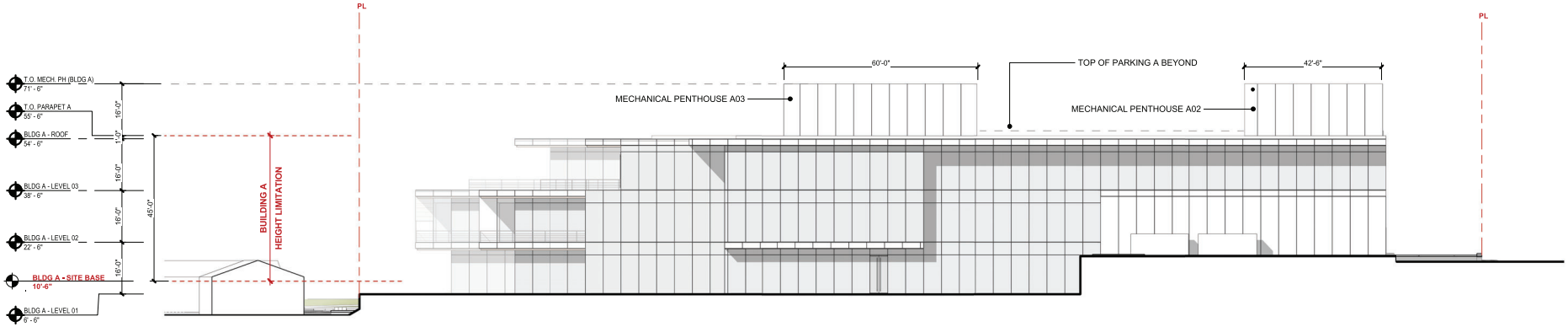
600 Addison Street Project IS/MND

Conceptual Roof Plan

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\\Figure_1-9.ai (2/1/2021)



BUILDING A - NORTH ELEVATION



BUILDING A - SOUTH ELEVATION

LSA

FIGURE 1-10

NOT TO SCALE

600 Addison Street Project IS/MND

Conceptual Building A Elevations - North and South

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

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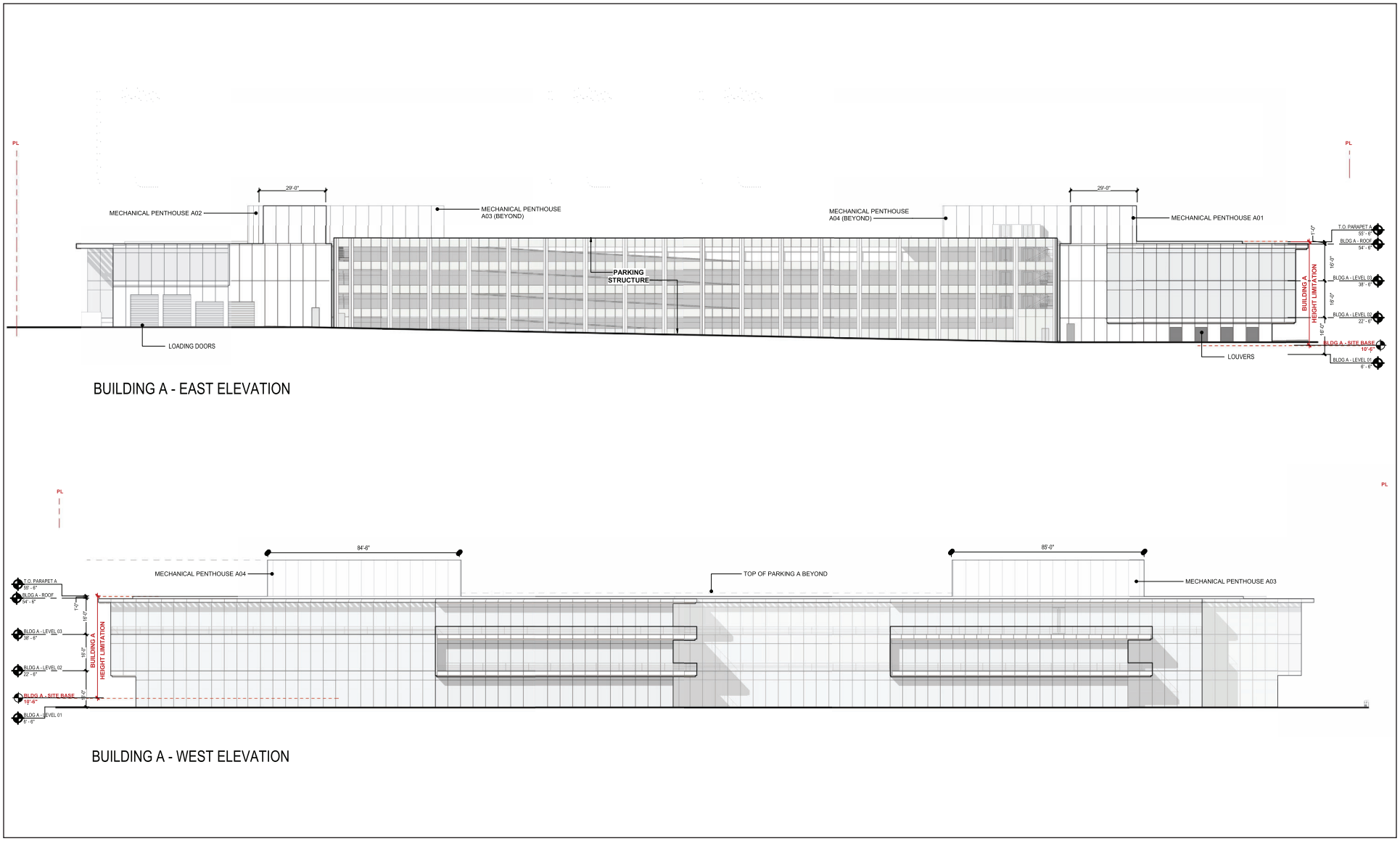


LSA

FIGURE 1-11

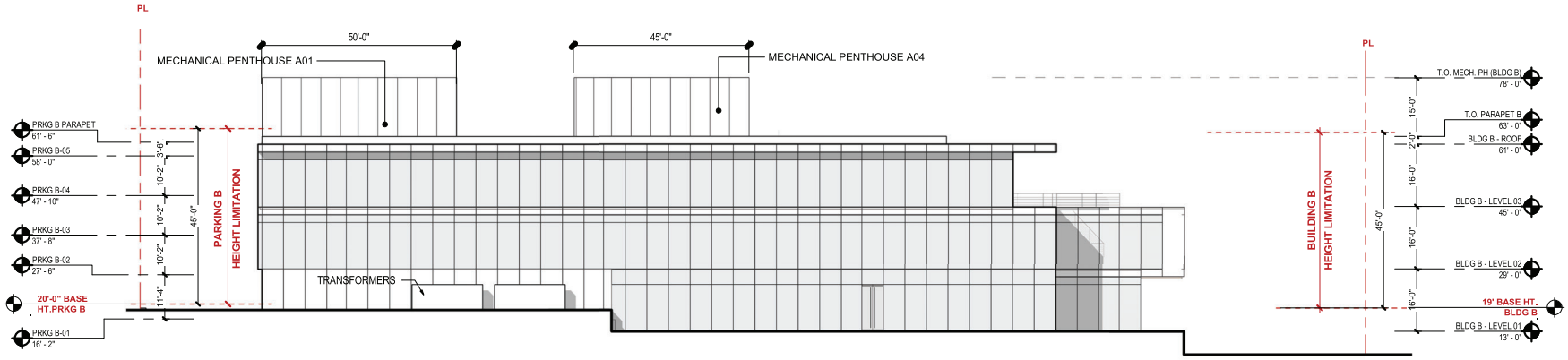
NOT TO SCALE

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

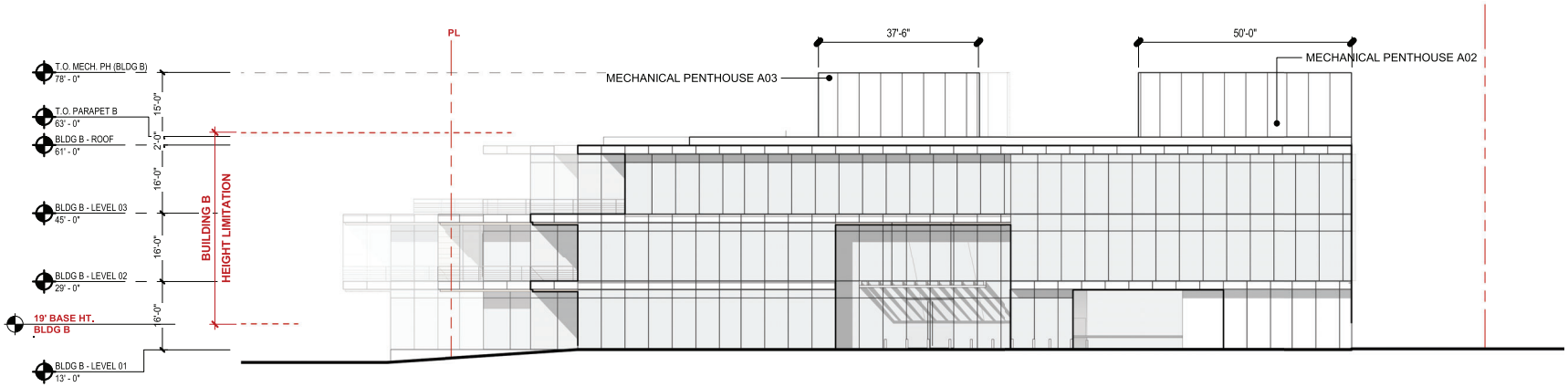
600 Addison Street Project IS/MND

Conceptual Building A Elevations - East and West

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\\Figure_1-11.ai (2/1//2021)



BUILDING B - NORTH ELEVATION



BUILDING B - SOUTH ELEVATION

LSA

FIGURE 1-12

NOT TO SCALE

600 Addison Street Project IS/MND

Conceptual Building B Elevations - North and South

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

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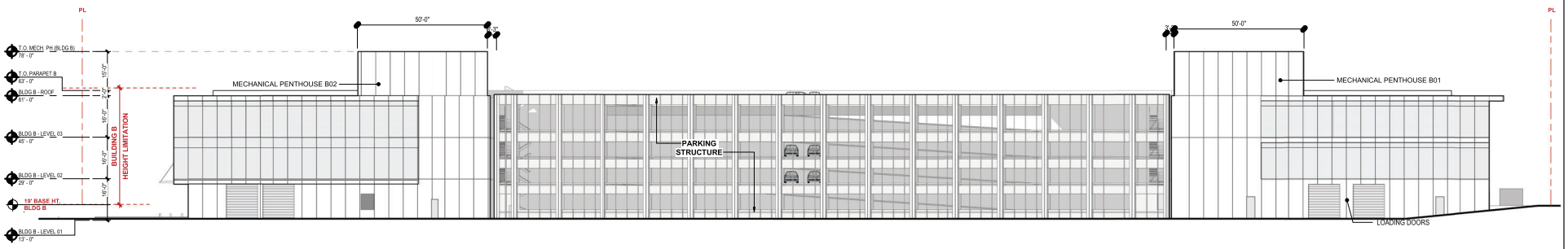
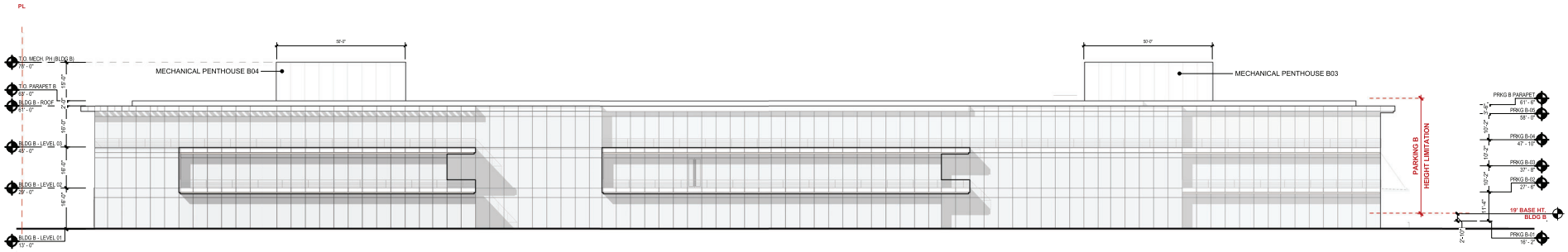


BUILDING B - EAST ELEVATION



BUILDING B - WEST ELEVATION

LSA

FIGURE 1-13

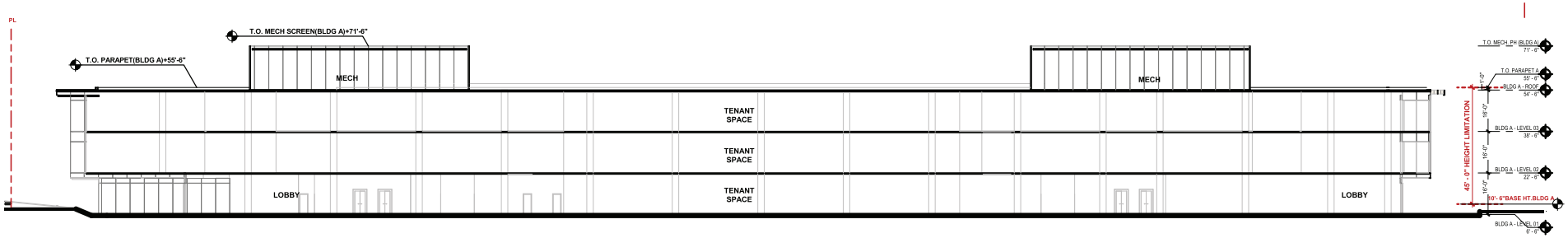
NOT TO SCALE

600 Addison Street Project IS/MND

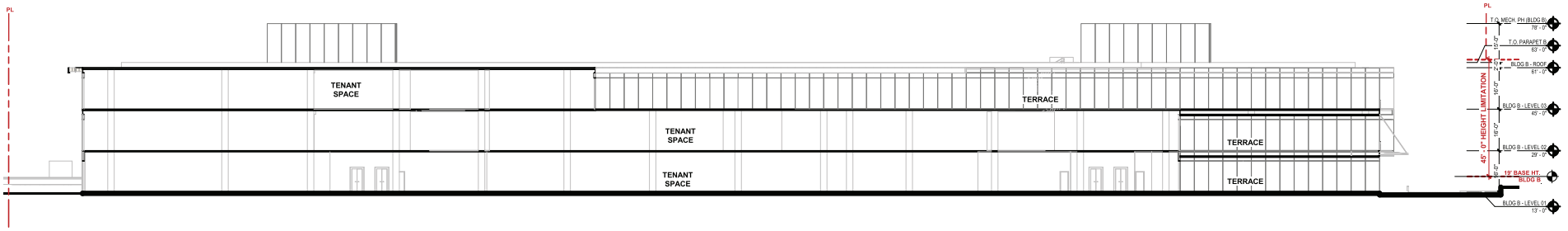
Conceptual Building B Elevations - East and West

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\Figure_1-13.ai (2/1/2021)



SECTION - BUILDING A NORTH - SOUTH



SECTION - BUILDING B NORTH - SOUTH

LSA

FIGURE 1-14

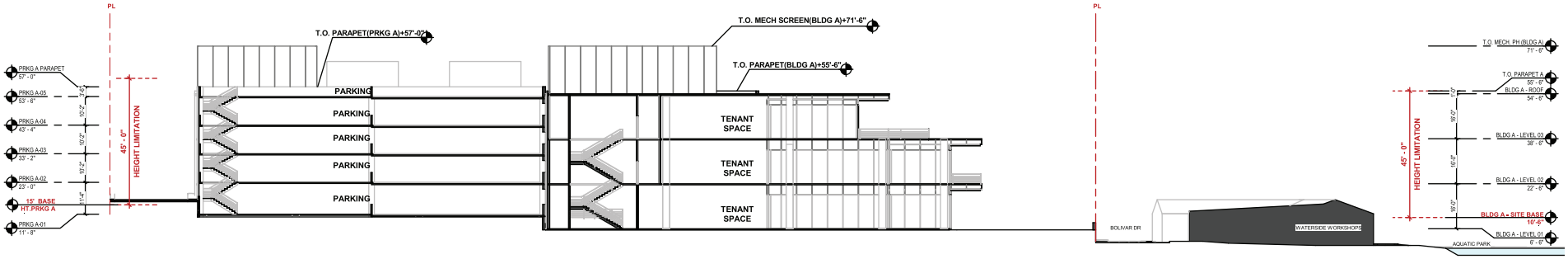
NOT TO SCALE

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

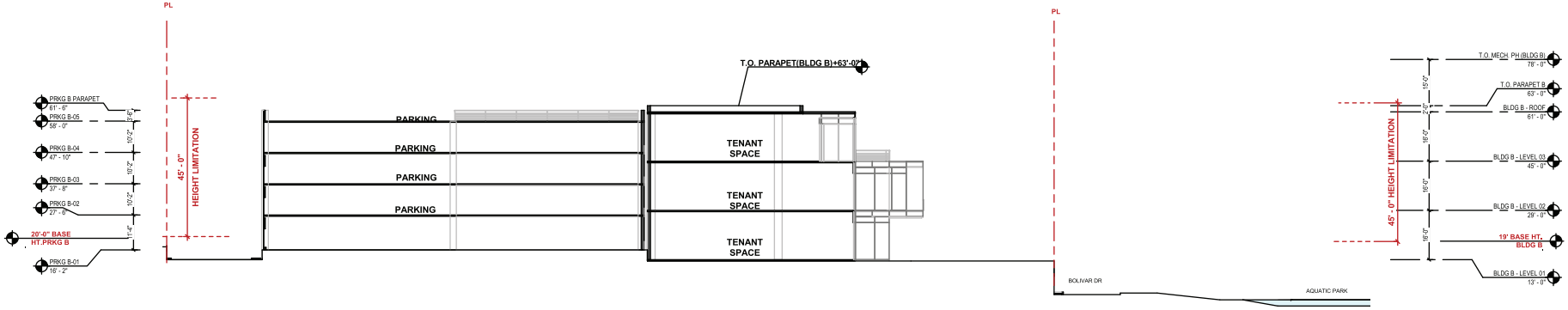
600 Addison Street Project IS/MND

Conceptual Building Sections - North and South

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\Figure_1-14.ai (2/1/2021)



SECTION - BUILDING A WEST - EAST



SECTION - BUILDING B WEST - EAST

LSA

FIGURE 1-15

NOT TO SCALE

600 Addison Street Project IS/MND

Conceptual Building Sections - East and West

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

P:\CBE1906.01 600 Addison\PRODUCTS\Graphics\Figure_1-15.ai (2/1/2021)

Approximately 56 percent (approximately 258,620 square feet) of the space would be R&D use; the remaining 44 percent (approximately 205,202 square feet) may be Office use or R&D use, to be determined at the time that individual building tenants are identified and depending on the needs of the occupant(s). It is estimated that the proposed uses would generate an estimated maximum of 1,600 full time employees on the site, for an increase of approximately 1,513 employees compared to existing conditions.

Both buildings have been designed to include layering and recessed glazed surfaces, projecting terraces, overhangs and awnings, and placement of landscaping away from the exterior façades to reduce the potential for bird collisions (refer to Section 3.4, Biological Resources, for additional discussion).

Access, Circulation and Parking. Primary vehicular access to the Project site would be via new driveways located along Addison Street, which would provide access to Parking Structure A, and Bancroft Way, which would provide access to Parking Structure B. As noted above, Parking Structure A would include 530 parking spaces and 11 loading spaces and Parking Structure B would include 394 parking spaces and 9 loading spaces, for a total of 924 parking spaces across the Project site. In addition, drop-off loops would be provided off of Addison Street and Bancroft Way. Secondary access to the parking, loading, and maintenance areas at the rear of the proposed parking garages would be on a one-way service road, via Bancroft Way, adjacent to the railroad tracks. A total of 270 bicycle parking spaces would also be provided throughout the Project site, including 246 long-term spaces and 24 short-term spaces.

Common Outdoor Space and Landscaping. A total of approximately 74,837 square feet of private and publicly-accessible common outdoor and landscaped area would be provided on the site, including approximately 40,000 square feet of “green” roof and terrace areas. All landscaping would be planted and irrigated compliant with the State’s Water Efficiency Landscape Ordinance and Bay-friendly landscape requirements.

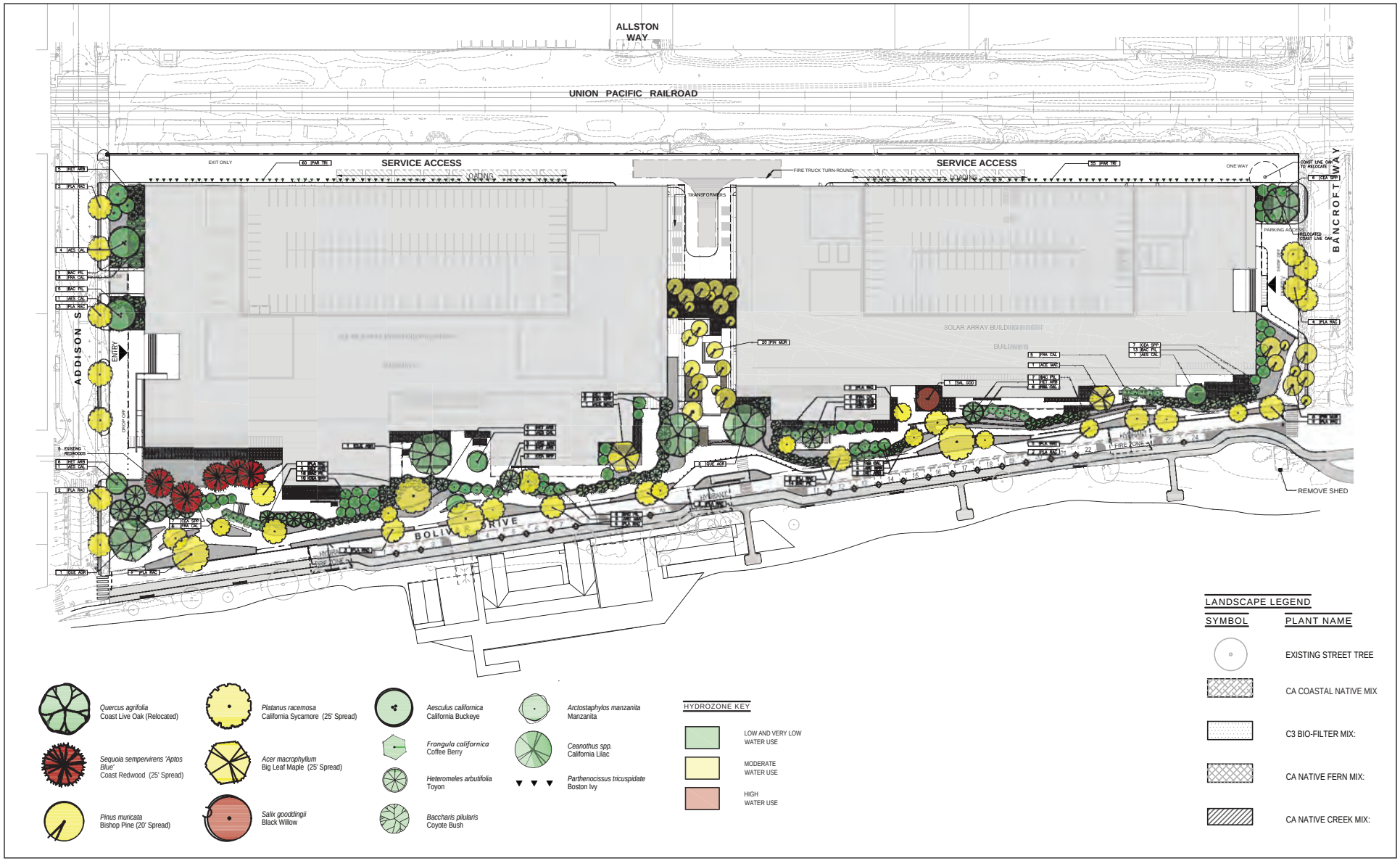
Private common outdoor and landscaped areas would be provided at the ground level, including a plaza located at the center of the site between the two buildings and within exterior balconies located at the second and third levels of the buildings. Publicly-accessible outdoor and landscaped areas would consist of a ground level public plaza/deck area with seating that would be located on Bancroft Way near the intersection with Bolivar Drive. This area would provide views towards the Bay. A publicly-accessible native plant garden would also be located along the entirety of the Bolivar Drive frontage.

A total of 56 of the existing 61 trees on the Project site would be removed. However, five large redwood trees located near the corner of Addison Street and Bolivar Drive would be retained. In addition, the existing coast live oak, which is classified as a protected tree by the City of Berkeley and located near Bancroft Way and the UPRR tracks, is proposed to be relocated just a few feet south of its current location, as shown in Figure 1-16 (refer to Section 3.4, Biological Resources, for additional information). Approximately 84 new trees would be planted on the Project site, including along the Addison Street, Bancroft Way, and Bolivar Drive frontages, as well as throughout the Project site interior. New trees would be a minimum of 24-inch box size.

Utilities and Infrastructure. The proposed Project is located in an urban area with existing utilities and infrastructure. The proposed Project would be required to install the following utility connections to the satisfaction of the applicable utility providers: water; wastewater; stormwater drainage; power; and telecommunications services. Connections to existing infrastructure would occur within the adjacent public rights-of-way. All existing and new electrical lines on and serving the site, including the overheard poles along the Project site frontage on Bolivar Drive, would be undergrounded as part of the proposed Project.

Approximately 3.17 acres (138,143 square feet), or 38 percent, of the approximately 8.4-acre (365,904-square-foot) Project site are currently covered by existing buildings and paved impervious surfaces. The existing soils facility and other unpaved surfaces within the site (approximately 4.6 acres or 200,376 square feet) consist of compacted soils and previous foundations that limit stormwater infiltration and also function as impervious surfaces (for a total of 91 percent of the site). Development of the proposed Project would result in an increase of pervious surfaces on the site from approximately 0.59 acres (25,700 square feet) of existing pervious surface coverage to approximately 0.79 acres (34,412 square feet) of pervious surface coverage. These calculations do not include the proposed green roof, which at this time is not included in the stormwater treatment plans. Runoff would be treated in accordance with the terms of the applicable Municipal Regional Permit (MRP) and C.3 requirements, before flowing to the City's storm drain.

The proposed Project would be designed to achieve Leadership in Energy and Environmental Design (LEED) Gold equivalence and would use all-electric building construction to comply with the City of Berkeley's Reach Code (a local amendment to the 2019 Energy Code, also known as Title 24 standards). The proposed Project would include photovoltaic (PV) solar panels on the rooftops of the proposed buildings, exterior shading to respond to solar exposure, enhanced ventilation (including advanced filtration of outdoor air, increased outdoor air ventilation rates, carbon dioxide monitoring, and pollution source control), ultra-low flow indoor water fixtures, and various other sustainable features. Additionally, the proposed buildings would be designed to be all-electric, would include infrastructure for electric vehicle (EV) charging in compliance with Berkeley Municipal Code Section 19.37, and would not include the use of any traditional gas systems. Space within the interior of each building is designated for back-up generators and/or back-up battery power generation, depending on the needs of building tenants.



LSA

FIGURE 1-16

NOT TO SCALE

SOURCES: LANE PARTNERS | LB2 PARTNERS, 2021.

600 Addison Street Project IS/MND

Conceptual Landscape Plan

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Off-Site Improvements. The proposed Project also may include a number off-site improvements within and immediately adjacent to the western edge of Bolivar Drive along the Project site frontage, which is under the jurisdiction of the City's Parks, Recreation and Waterfront Department (PRW). The timing and specifics of each improvement would be coordinated with PRW and could include the following elements, which are evaluated as part of the proposed Project in this Initial Study, but are subject to change:

- Installation of an 8-inch water main within Bolivar Drive for connection to additional fire hydrants;
- Restriping and reconfiguration of Bolivar Drive from a two-way roadway to a one-way roadway traveling in the southbound direction between Addison Street and Bancroft Way;
- Reconstruction of Bolivar Drive with new curbs and asphalt paving to provide code-compliant fire access;
- Installation of a new accessible, approximately 14-foot-wide bicycle and pedestrian pathway (sidewalk or other) immediately adjacent to and west of Bolivar Drive, and primarily within the existing roadway right-of-way;
- Installation of a raised pedestrian crosswalk located midblock between Addison Street and Bancroft Way;
- Landscaping improvements, off site along the west side of Bolivar Drive, may include enhancements and native plantings along the Main Lagoon edge adjacent to the site; existing trees along Bolivar Drive are currently anticipated to be retained; and
- Striping for approximately 12 vehicle parking spaces parallel to Bolivar Drive.

The above-noted improvements are part of a larger design concept for improvements to Bolivar Drive, extending from Addison Street to Bancroft Way along the Project site frontage, and then further south to where Bolivar Drive terminates and the Aquatic Park Path continues through the open space area adjacent to the Aquatic Park lagoon, as contemplated by the PRW. The following potential improvements from Bancroft Way to the end of Bolivar Drive are also considered in this analysis, although these improvements would likely be implemented by the PRW either in coordination with the proposed Project improvements or at a later date:

- Reconstruction of Bolivar Drive with new curb cuts and asphalt paving;
- Rebuilding/paving of the existing 12-foot-wide bicycle and pedestrian pathway along the Aquatic Park shoreline; and
- Striping for approximately 26 vehicle parking spaces perpendicular to Bolivar Drive.

In addition to the above improvements, the proposed Project would also include funding for the installation of a traffic signal at the intersection of Bancroft Way and Sixth Street to reduce

roadway congestion in the vicinity. The traffic signal would be funded by the applicant and installed in coordination with the City's Public Works Department. Additionally, the following off-site improvements would occur within the public right-of-way, in coordination with the Public Works Department:

- On-street parking on the south side of Addison Street would be prohibited between the railroad tracks and Second Street prior to Project occupancy to provide adequate sight distance for vehicles exiting the Project driveways.
- On-street parking on the north side of Bancroft Way between the railroad tracks and just west of the westernmost Project driveway would be prohibited prior to Project occupancy to provide adequate sight distance for vehicles exiting the Project driveways.
- A marked crosswalk would be installed across the east approach of the Second Street/Addison Street intersection prior to Project occupancy to discourage pedestrians from crossing Addison Street at the at-grade railroad crossing.

Demolition, Grading and Construction. The proposed Project would result in demolition of the existing buildings, surface pavements, and parking lots on the site. Construction debris, such as old foundations, pavements, and structures, would be collected and off-hauled. The existing topography of the site would generally be maintained, with a maximum of 20 feet of site soils excavated for elevator pits and an average of 6 to 12 feet of soils excavated across the elevated portions of the site to support building foundations. Up to 74,000 cubic yards of soils would be excavated from the site and off-hauled. It is anticipated that building loads would be adequately supported by spread footings and slab-on-grade foundation systems; no pile driving would be required.

Demolition and construction activities are anticipated to begin once entitlements are obtained, currently anticipated by late 2021. Buildout would occur over an approximately two-year period, from site preparation to full site occupancy.

Discretionary Actions. The proposed Project is subject to action by the City of Berkeley's Zoning Adjustments Board (ZAB). The Project would require the following discretionary entitlements from the City of Berkeley, per the City of Berkeley Municipal Code (BMC):

- Use Permit, under BMC Section 23C.08.050, to allow demolition of non-residential buildings;
- Use Permit, under BMC Section 23E.80.050.C, to allow construction of 20,000 or more gross square feet of new floor area;
- Use Permit, under BMC Section 23E.80.030, to establish more than 30,000 square feet of Office use;
- Use Permit, under BMC Section 23E.80.045.B, to change more than 25 percent of the space used for manufacturing to another protected use;

- Administrative Use Permit, under BMC Section 23E.80.045.A.2, to change up to 20,000 square feet of Warehouse to R&D use;
- Administrative Use Permit, under BMC Section 23E.80.030, to establish more than 30,000 square feet of R&D use; and
- Administrative Use Permit, per BMC Section 23E.04.020, to allow rooftop projections to exceed the height limit up to 15 percent of the building footprint.

In addition, the City's Design Review Committee (DRC) will be responsible for reviewing the proposed Project for Preliminary and Final Design Review and providing a recommendation to the ZAB.

Development of the proposed Project, if approved, would be subject to the City of Berkeley's standard Conditions of Approval (COA), pursuant to BMC 23B.32.040.D and consistent with the findings made by ZAB for approval of the Project and issuance of the requested Use Permits. Applicable COAs are identified in Chapter 3.0 of this Initial Study. Each COA is titled pursuant to the subject area it addresses.

9. Surrounding Land Uses and Setting:

The Project site is located in West Berkeley, which is characterized by a mix of uses, including manufacturing, light industrial, office, residential, recreational, regional transportation, and commercial/restaurant uses. Figure 1-2 depicts an aerial view of the site and surrounding land uses, which are further described below. Figures 1-13 through 1-15 include photos of select land uses that surround the site; Figure 1-2 shows the viewpoint locations for each photo.

North of the Project Site. The Project site bordered immediately to the north by Addison Street, a two-lane roadway that runs east-west through the City, terminating at the University of California, Berkeley (UC Berkeley) campus. Addison Street is also designated as a Bicycle Boulevard in the City's Bicycle Plan.[1] An at-grade UPRR crossing bisects Addison Street, immediately northeast of the Project site. The crossing includes warning gates, lights, and signs to alert automobiles, bicyclists, and pedestrians of the passing of trains and to prevent crossings when trains are passing through. Additionally, trains are required by federal law to sound their horns when approaching and passing through the crossing. Across Addison Street land uses consist of one- and two-story commercial buildings that primarily consist of retail and service uses and a five-story, mixed-use commercial and residential building (refer to Photo 5 on Figure 1-17), as well as the Berkeley animal shelter. Further, north of the site, land uses consist of mixed-use residential, commercial, light industrial, and manufacturing. The Fourth Street shopping area and Berkeley Amtrak Station are located approximately one block north of the site, across University Avenue. The Berkeley Amtrak Station services the Capitol Corridor passenger route with access between Auburn and San Jose.

East of the Project Site. The Project site is bordered immediately to the east by the UPRR rail corridor (refer to Photo 6 on Figure 1-17) which serves intercity freight movements as well as Amtrak and other long haul and intra-state passenger rail service. A subsurface hazardous liquid

[1] Berkeley, City of. 2017. *Berkeley Bicycle Plan*. May.

pipeline is located within the rail right-of-way, east of the Project site. East of the rail corridor land uses primarily consist of light industrial and manufacturing/warehouse uses along with some ancillary retail and office uses. Two to three blocks further to the east, land uses transition to primarily low- and medium-density residential uses. San Pablo Avenue, a major transportation and commercial corridor, is located approximately 0.5 miles further east.

South of the Project Site. The Project site is bordered immediately to the south by Bancroft Way, a two-lane roadway that runs east-west through the City (refer to Photo 7 on Figure 1-18, which depicts existing conditions along this roadway). An at-grade railroad crossing bisects Bancroft Way, immediately southeast of the Project site. The crossing includes warning gates, lights, and signs similar to the Addison Street crossing described above.

One-story manufacturing and R&D uses occupy the block immediately south of Bancroft Way and west of the UPRR corridor. Further to the south are open space uses within Aquatic Park, including a trail system and outdoor playground (Dreamland Playground), as further described below. Further south of the site and east of the UPRR corridor, land uses consist of light industrial, commercial, and R&D uses with ancillary retail. The Bayer Corporation campus is located three blocks south and one block east of the site.

West of the Project Site. To the west, the Project site abuts Aquatic Park, which is owned by the City of Berkeley and consists of approximately 33 acres of land and approximately 68 acres of open water in three separate lagoons including the approximately 1-mile-long Main Lagoon and the smaller Model Yacht Club Basin and Radio Tower Pond (refer to Section 3.17, Hydrology and Water Quality, for additional description) , as well as a limited number of leasable spaces occupied by tenants providing recreation-focused services. Bolivar Drive, an access driveway through the park, begins at Addison Street, runs north-south immediately adjacent to the Project site, and terminates at the intersection with Channing way, one block south of the site (refer to Photo 8 on Figure 1-18). On the west side of Bolivar Drive land uses consist of one-story commercial buildings occupied by Waterside Workshops, Street Level Cycles, and the Bay Area Outreach and Recreation Program (BORP) Adaptive Cycling Center (refer to Photo 9 on Figure 1-19). The park also includes boating and wetland areas within the Main Lagoon directly across from the Project site as well as public pathways; Dreamland Playground, which includes a play area and play structures for children; Frisbee golf course; picnic areas; and a boating clubhouse and storage facility. Refer to Photo 10 on Figure 1-19 for a typical view of Aquatic Park conditions. West of Aquatic Park is the I-580/I-80 corridor, which runs north-south in this segment. The McLaughlin Eastshore State Park, San Francisco Bay Trail (Bay Trail), and San Francisco Bay are located approximately 0.5 miles to the west. The Berkeley Marina is located approximately 1-mile further west. Access to these open space and recreation areas is provided by a pedestrian/bicycle bridge over the freeway corridor, which is accessed by a pathway located immediately northwest of the Project site, at the intersection of Bolivar Drive and Addison Street.

Photo 5: View of commercial and residential uses on Addison Street looking east, north of the Project site

Photo 6: View of the UPRR corridor looking south, east of the Project site

LSA

FIGURE 1-17

600 Addison Street Project IS/MND

Surrounding Land Uses

SOURCE: LSA, 2020.

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Photo 7: View of Bancroft Way looking east, south of the Project site

Photo 8: View of Bolivar Drive looking south, west of the Project site

LSA

FIGURE 1-18

600 Addison Street Project IS/MND

Surrounding Land Uses

SOURCE: LSA, 2020.

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Photo 9: Existing commercial uses on Bolivar Drive, west of the Project site

Photo 10: View of Aquatic Park, as seen from Bolivar Drive/Addison Street, west of the Project site

LSA

FIGURE 1-19

600 Addison Street Project IS/MND

Surrounding Land Uses

SOURCE: LSA, 2020.

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10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):

U.S. Army Corps of Engineers (Corps; pending jurisdictional delineation), California Department of Fish and Wildlife (CDFW), San Francisco Regional Water Quality Control Board (RWQCB), and East Bay Municipal Utility District (EBMUD).

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

A request form describing the Project and map depicting the Project site was sent to the Native American Heritage Commission (NAHC) in West Sacramento requesting a list of tribes eligible to consult with the City, pursuant to Public Resources Code section 21080.3.1. On March 12, 2020, the NAHC responded in a letter with a list of tribal contacts. The City sent letters to these individuals via certified mail on March 18, 2020, notifying them of their opportunity to consult for this Project.

On July 15, 2020, Ms. Gould, representative of the Confederated Villages of Lisjan (Lisjan Tribe) responded to the City's email and requested more information and potential consultation. The City and archaeological consultants met with Ms. Gould and other representatives of the Lisjan Tribe on the following dates to discuss the Project, share information, and identify potential mitigation measures: August 26, September 2, September 9, September 23, November 4, November 18, and December 16, 2020. At the September 23 meeting, representatives from the Lisjan Tribe, the City, and the archaeological consultant teams met at the Project site. The last two meetings were attended by representatives of the Project applicant team. The final consultation meeting was held on December 16, 2020. Representatives of the Lisjan Tribe have reviewed, provided comments on, and agreed to the City's standard COAs and additional mitigation measures identified for the protection of tribal cultural resources as outlined in Sections 3.5, Cultural Resources and the additional measures agreed to by the project applicant, which are incorporated into the project, as further outlined in Section 3.18, Tribal Cultural Resources.

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2.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 3.0.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Wildfire	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

2.1 DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed Project MAY have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Leslie Mendez, Senior Planner

February 10, 2021
Date

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3.0 ENVIRONMENTAL CHECKLIST

3.1 AESTHETICS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Public Resources Code Section 21099(d) provides that, among other items, "aesthetics… impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered significant impacts on the environment." Accordingly, aesthetics is no longer to be 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:

1. The project is residential, mixed-use residential, or an employment center;

2. The project is on an infill site;[2] and

3. The project is in a transit priority area.[3]

The proposed Project would result in the development of an employment center on an infill site. The site is located within a transit priority area because it is within 0.5 miles of several major transit stops/intersecting major bus routes. The Berkeley Amtrak Station, one block north of the site, is an

[2] Public Resources Code Section 21099(a) 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.

[3] Public Resources Code Section 21099(a) defines a "transit priority area" as an area within 0.5 miles of an existing or planned major transit stop. A "major transit stop" is defined in Section 21064.3 of the California Public Resources Code as a 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 or service interval of 15 minutes or less during the morning and afternoon peak commute periods.

existing rail transit station providing service to a regional route from Auburn to San Jose. AC Transit also defines the Amtrak Station as a Transit Center.[4] In addition, stops for three routes (51B, G, and West Berkeley Shuttle) are located within four blocks. The 51B route provides bus service from the Amtrak Station to Downtown Berkeley Bay Area Rapid Transit (BART) with a frequency of less than 15 minutes. The West Berkeley Shuttle provides bus service from Dwight Way at Sixth Street to the Ashby BART station with a frequency of 15 minutes during the morning and afternoon peak commute periods. The proposed Project meets each of the above three criteria and thus, this checklist does not consider aesthetics in determining the significance of Project impacts under CEQA. Project elements that relate to changes to aesthetic conditions at the site and vicinity, such as proposed building heights, architecture, effects of new light and glare, etc., will however be considered as part of the planning approval process, including through design review.

[4] AC Transit. 2020. AC Transit Lines Serving Transit Centers. Website: www.actransit.org/lines-serving-transit-centers (accessed July 2020).

3.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a. Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? ***(No Impact)***

The Project site and vicinity are located within an urban area of the City of Berkeley. There are no agricultural uses located on or near the Project site and the site is designated as Urban and Built-Up land by the Department of Conservation's Important Farmland Finder Map.[5] Therefore, development of the proposed Project would not convert agricultural lands to non-agricultural uses. The proposed Project would have no impact on farmlands designated by the State of California as Unique or Prime Farmland, or Farmland of Statewide Importance.

[5] California Department of Conservation. 2016. California Important Farmland Finder (map). Website: maps.conservation.ca.gov/dlrp/ciff (accessed March 2020).

b. Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract? ***(No Impact)***

The Project site is zoned Mixed-Use Light Industrial (MULI) on the City's Zoning Map and is not under a Williamson Act contract.[6] Therefore, the proposed Project would not conflict with existing zoning for an agricultural use, or a Williamson Act contract.

c. Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? ***(No Impact)***

The Project site is zoned MULI on the City's Zoning Map and is located in an urban, developed area. Therefore, the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest uses.

d. Would the Project result in the loss of forest land or conversion of forestland to non-forest use? ***(No Impact)***

The Project site and vicinity are not located in an area that is designated as forest land. Therefore, the proposed Project would not result in the loss of forest land or conversion of forest land to non-forest uses.

e. Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? ***(No Impact)***

The proposed Project would result in the redevelopment of the Project site, which is surrounded by a variety of urban and recreational uses. The Environmental Management Element of the City's General Plan states that "Agriculture in Berkeley is limited to personal and community gardens." No existing or proposed community gardens are located within the vicinity of the site. Therefore, the proposed Project would not result in the extension of infrastructure into an undeveloped area, the development of urban uses on a greenfield site, or other physical changes that would result in the conversion of farmland to non-agricultural uses.

[6] California Department of Conservation. 2015. Division of Land Resource Protection, Alameda County Williamson Act FY 2014/2015. Available online at: ftp.consrv.ca.gov/pub/dlrp/wa/Alameda_14_15_WA.pdf (accessed April 2020).

3.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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?	☐	☐	☒	☐

The Project site is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In Berkeley, and the rest of the air basin, exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Within the BAAQMD, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10}, $PM_{2.5}$), and lead (Pb) have been set by both the State of California and the federal government. The State has also set standards for sulfate and visibility. The BAAQMD is under State non-attainment status for ozone and particulate matter (both PM_{10} and $PM_{2.5}$) standards. The BAAQMD is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal $PM_{2.5}$ 24-hour standard.

a. Would the Project conflict with or obstruct implementation of the applicable air quality plan? ***(Less-Than-Significant Impact)***

The applicable air quality plan is the BAAQMD 2017 Clean Air Plan (Clean Air Plan),[7] which was adopted on April 19, 2017. The Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest heath risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the Project: (1) supports the goals of the

[7] Bay Area Air Quality Management District. 2017. *Clean Air Plan*. April 19.

Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan. As discussed below, the proposed Project would not conflict with or obstruct implementation of the Clean Air Plan and this impact would be less than significant.

Clean Air Plan Goals. The primary goals of the Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below in Section 3.3.b, implementation of the proposed Project would result in less-than-significant operation-period emissions and, with implementation of standard conditions that would implement BAAQMD-required diesel and particulate reduction measures during construction (COA: Public Works - Implement BAAQMD-Required Measures During Construction) and require equipment controls to reduce diesel particulate matter for off-road construction equipment (COA: Air Quality - Diesel Particulate Matter Controls During Construction), the Project would result in less-than-significant construction-period emissions. Therefore, the Project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-Greenhouse Gas (GHG) Pollutants Measures. The Project's compliance with each of these control measures is discussed below. As discussed, the Project would not conflict with the Clean Air Plan control measures.

Stationary Source Control Measures. The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD Permit and Inspection programs. Since the Project would not include any of these stationary sources, the Stationary Source Control Measures of the Clean Air Plan are not applicable to the Project.

Transportation Control Measures. The BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, toxic air contaminants (TACs), and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed Project would result in the construction of R&D and Office uses on the Project site, which would serve as an employment center on an infill site that would locate employees near existing commercial, residential, and recreational uses. The Project site is located adjacent to I-80 and the proposed Project would not provide a reduced number of vehicle parking spaces compared to the City's parking requirements; both of these conditions could contribute to employees that are located outside of the City to prefer driving to the site due to

ease of access and parking opportunities. However, the proposed Project would locate employees near public transportation facilities, including rail, bus, and bicycle facilities, and is within walking distance to goods and services. The proposed Project would also provide incentives to reduce the demand for travel by single occupancy vehicles through implementation of the proposed Transportation Demand Management (TDM) Plan[8] and would meet the requirements of the BAAQMD Bay Area Commuter Benefits Program. As such, the proposed Project would facilitate use of alternative modes of transportation, which would promote a reduction of vehicle trips and vehicle miles traveled (VMT), offsetting these conditions to some degree. Refer to Section 3.17, Transportation, for the proposed TDM Plan measures and for further discussion. In addition, the proposed Project would provide EV charging infrastructure consistent with BMC Section 19.37, which requires provision of Level 2 charging stations for at least 10 percent of the parking supply and provision of appropriate wiring for a total of 40 percent of the parking spaces for future EV charging, which would support the ability of Project employees to use cleaner modes of transportation. As such, the proposed Project would not conflict with Transportation Control Measures.

Energy Control Measures. The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the Clean Air Plan are not applicable to the Project.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. In addition, the proposed Project would exceed 2019 Title 24 standards through all-electric building construction and would be designed to achieve LEED Gold equivalence. The proposed Project would also incorporate PV systems to provide renewable energy onsite such that the core building operation would generate net zero site energy at the onset of the building's operation. Therefore, the proposed Project would not conflict with any of the Building Control Measures.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the Project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the Project.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban-tree plantings. Since the Project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the Project.

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8 Fehr & Peers. 2021. *Berkeley Commons Project Transportation Impact Analysis*. January.

Waste Management Control Measures. The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The Project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the Project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the Project.

Super GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the Project.

Clean Air Plan Implementation. As discussed above, the proposed Project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the Project would not disrupt or hinder implementation of a control measure from the Clean Air Plan and this impact would be less than significant.

b. Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***(Less-Than-Significant Impact)***

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. The BAAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. The following analysis assesses the potential Project-level construction- and operation-related air quality impacts and CO impacts.

Construction Emissions. During construction, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by demolition, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would

include CO, nitrogen oxide (NO_x), reactive organic gases (ROG), directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

Site preparation and Project construction would involve demolition, grading, paving, and other activities. Construction-related effects on air quality from the proposed Project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROGs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the Project using the California Emissions Estimator Model (CalEEMod) version 2016.3.2, consistent with BAAQMD recommendations.[9] The Project would include approximately 74,000 cubic yards of soil off-hauled and approximately 136,000 square feet of off-hauled demolition waste, which were included as inputs to the CalEEMod analysis. In addition, the construction equipment list provided by the Project applicant was input into CalEEMod. For purposes of this CalEEMod analysis, the construction schedule for all improvements was assumed to be approximately 24 months, starting in September 2021 and ending in September 2023. This analysis also assumes that all off-road equipment over 50 horsepower rating would utilize the USEPA Tier 4 engines (refer to COA, Air Quality - Diesel Particulate Matter Controls During Construction, below). Construction-related emissions are presented in Table 3.A. CalEEMod output sheets are included in Appendix A.

[9] The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, this analysis is conservative and likely overestimates the Project's construction emissions.

Table 3.A: Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	Exhaust PM_{10}	Fugitive Dust PM_{10}	Exhaust $PM_{2.5}$	Fugitive Dust $PM_{2.5}$
Average Daily Emissions	8.2	8.5	1.0	1.5	1.0	0.6
BAAQMD Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (May 2020).
Note: The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, these emissions estimates likely overestimate the Project's construction emissions.
BMP = Best Management Practices

As shown in Table 3.A, construction emissions associated with the Project would be less than significant for ROG, NOx, $PM_{2.5}$, and PM_{10} exhaust emissions. The BAAQMD and the City of Berkeley require the implementation of the BAAQMD's Basic Construction Mitigation Measures, which are required by COA, Public Works - Implementation of BAAQMD-Recommended Measures During Construction, to reduce construction fugitive dust impacts to a less-than-significant level. Development projects that require a Use Permit are required to comply with the following COAs that addresses these potential impacts. With implementation of these COAs, construction impacts would be less than significant.

COA Public Works - Implement BAAQMD-Recommended Measures During Construction. For all proposed projects, BAAQMD recommends implementing all the Basic Construction Mitigation Measures, listed below to meet the best management practices threshold for fugitive dust:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

- A publicly-visible sign shall be posted with the telephone number and person to contact at the City of Berkeley regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

COA Air Quality - Diesel Particulate Matter Controls During Construction. All off-road construction equipment used for projects with construction lasting more than 2 months shall comply with one of the following measures:

a. The Project applicant shall prepare a health risk assessment that demonstrates the Project's onsite emissions of diesel particulate matter during construction will not exceed health risk screening criteria after a screening-level health risk assessment is conducted in accordance with current guidance from BAAQMD and Office of Environmental Health Hazard Assessment (OEHHA). The health risk assessment shall be submitted to the Land Use Planning Division for review and approval prior to the issuance of building permits; or

b. All construction equipment shall be equipped with Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the California Air Resources Board (CARB). The equipment shall be properly maintained and tuned in accordance with manufacturer specifications.

   In addition, a Construction Emissions Minimization Plan (Emissions Plan) shall be prepared that includes the following:

   - An equipment inventory summarizing the type of off-road equipment required for each phase of construction, including the equipment manufacturer, equipment identification number, engine model year, engine certification (tier rating), horsepower, and engine serial number. For all VDECS, the equipment inventory shall also include the technology type, serial number, make, model, manufacturer, CARB verification number level, and installation date.

   - A Certification Statement that the Contractor agrees to comply fully with the Emissions Plan and acknowledges that a significant violation of the Emissions Plan shall constitute a material breach of contract. The Emissions Plan shall be submitted to the Public Works Department for review and approval prior to the issuance of building permits.

The proposed Project would be required to comply with the above City-required COAs. The BAAQMD's basic source control measures would be implemented during the construction period and construction vehicles would be equipped with Tier 4 engines. Also refer to Section 3.3.c, below which discusses potential impacts to sensitive receptors. In compliance with COA: Air Quality – Diesel Particulate Matter Controls During Construction, a health risk assessment was conducted for

the proposed Project and the analysis determined that construction emissions would not exceed health risk screening criteria; therefore, impacts to sensitive receptors would also be less than significant.

Operational Emissions. Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed Project.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. A majority of the Project's PM_{10} emissions would result from entrainment of roadway dust from vehicle travel associated with the Project traffic fleet.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources. The proposed Project would exceed 2019 Title 24 standards through all-electric building construction and would be designed to achieve LEED Gold equivalence. The proposed Project would also incorporate PV systems to provide renewable energy onsite such that the core building operation would consume net zero site energy at the onset of the building's operation. In addition, the proposed buildings would be all-electric and natural gas connections would not be installed.

Typically, area source emissions consist of direct sources of air emissions located at the Project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the Project would include emissions from the use of landscaping equipment and the use of consumer products.

Emission estimates for operation of the Project were calculated using CalEEMod.[10] Model results are shown in Table 3.B and output sheets are included in Appendix A. Trip generation rates for the Project were based on the Project's Transportation Impact Analysis,[11] which estimates that the proposed Project would generate approximately 3,840 net new trips per day.

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[10] The CalEEMod modeling was conducted for a previous, larger (approximately 521,810-square-foot) version of the Project; therefore, this analysis is conservative and likely overestimates the Project's operational emissions.

[11] Fehr & Peers. 2021, op. cit. The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project, which would have resulted in 4,350 net new trips per day; therefore, this analysis is conservative and overestimates the number of net new daily vehicle trips.

Table 3.B: Project Operational Emissions

Operational Emission Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
Pounds Per Day				
Area Source Emissions	12.9	<0.1	<0.1	<0.1
Energy Source Emissions	0.4	3.2	0.2	0.2
Mobile Source Emissions	5.6	20.2	14.0	3.8
Total Emissions	**18.8**	**23.5**	**14.2**	**3.8**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**
Tons Per Year				
Area Source Emissions	2.3	<0.1	<0.1	<0.1
Energy Source Emissions	0.1	0.6	<0.1	<0.1
Mobile Source Emissions	0.9	3.6	2.4	0.7
Total Emissions	**3.3**	**4.2**	**2.5**	**0.7**
BAAQMD Thresholds	10.0	10.0	15.0	10.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: LSA (May 2020).
Note: The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, these emissions estimates likely overestimate the Project's operational emissions.

The primary emissions associated with the Project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the Project; emissions are released in other areas of the Air Basin. The daily and annual emissions associated with Project operational trip generation, energy, and area sources are identified in Table 3.B for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results shown in Table 3.B indicate the Project would not exceed the significance criteria for daily ROG, NO_2, PM_{10} or $PM_{2.5}$ emissions; therefore, the proposed Project would not have a significant effect on regional air quality and mitigation would not be required. This impact would be less than significant.

Localized CO Impacts. Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. The BAAQMD's 2017 CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed development projects. A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the impacts of the Project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD's 2017 CEQA Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.

- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

The Project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

The proposed Project would not conflict with standards established by the Alameda County Transportation Commission (ACTC) for designated roads and highways, a regional transportation plan, or other agency plans. The Project site is not located in an area where vertical or horizontal mixing of air is substantially limited. Some study area intersections would result in increased level of service due to intersection delay. However, the Project's trip generation would be 444 AM peak hour trips and 455 PM peak hour trips (refer to Section 4.17, Transportation, for additional discussion); therefore, the Project's contribution to peak hour traffic volumes at intersections in the vicinity of the Project site would be well below 44,000 vehicles per hour. The intersection with the highest traffic volumes in the vicinity of the site (San Pablo Avenue and University Avenue) has peak hour traffic of 159 vehicles per hour; therefore, total intersection traffic volumes attributed to the Project, as well as combined with other proposed projects in the area, would be well below the screening criteria level of 44,000 vehicles per hour. Therefore, the proposed Project would not result in localized CO concentrations that exceed State or federal standards and this impact would be less than significant.

c. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***(Less-Than-Significant Impact)***

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient $PM_{2.5}$ increase greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). A significant cumulative impact would occur if the Project, in combination with other projects located within a 1,000-foot radius of the Project site, would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient $PM_{2.5}$ increase greater than 0.8 $\mu g/m^3$ on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

The proposed Project site is located in an urban area in close proximity to existing residential uses, located approximately 65 feet north of the Project site, that could be exposed to diesel emission exhaust during the construction period. The City requires the implementation of diesel particulate matter controls, which are required by COA: Air Quality – Diesel Particulate Matter Controls During Construction, to reduce potential health risks to sensitive receptors during Project construction.

In compliance with COA: Air Quality – Diesel Particulate Matter Controls During Construction, to estimate the potential cancer risk from Project construction equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location (i.e., a nearby residential land use). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using CARB's exposure methodology, with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data.

Table 3.C below identifies the results of the analysis utilizing the CalEEMod outputs, assuming the use of Tier 4 construction equipment. Model snap shots of the sources are provided in Appendix B.

Table 3.C: Inhalation Health Risks from Project Construction to Off-Site Receptors

Project Construction	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	8.7	0.006	0.03
Threshold	**10.0**	**1.0**	**0.30**

Source: LSA (May 2020).
Note: The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, these emissions estimates likely overestimate the Project's construction emissions.
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
$\mu g/m^3$ = micrograms per cubic meter

As shown in Table 3.C, the risk associated with Project construction at the maximally exposed individual (MEI) would be 8.7 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. The total chronic hazard index would be 0.006, which would be well below the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.03 $\mu g/m^3$, which would also not exceed the BAAQMD significance threshold of 0.30 $\mu g/m^3$.

Therefore, with implementation of COA: Air Quality - Diesel Particulate Matter Controls During Construction, construction of the proposed Project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations.

Once the Project is constructed, the Project would not be a source of substantial emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during Project construction or operation, and potential impacts would be less than significant.

d. Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? ***(Less-Than-Significant Impact)***

During construction, the various diesel powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended

periods of time beyond the Project site. The potential for diesel odor impacts is therefore considered less than significant. Additionally, the proposed uses that would be developed within the Project site are not expected to produce any offensive odors that would result in frequent odor complaints. The proposed Project would not include sensitive receptors; therefore odor impacts on the Project do not require further evaluation. This impact would be less than significant.

3.4 BIOLOGICAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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?	☐	☐	☐	☒

The approximately 8.4-acre site is located in the highly urbanized West Berkeley area situated between the active UPRR railroad line to the east and Aquatic Park to the west. Biological resources on the site mainly consist of those species of plants and animals that are tolerant of human disturbance and can survive in the urban environment. Buildings on the site may provide habitat for bats, some species of which find suitable roost sites and foraging sites even in the urban environment, especially with the large open space of Aquatic Park immediately adjacent to the site. Due to the disturbance on the soil staging area, wildlife use is expected to be limited here and native vegetation is all but absent. The following provides an overview of existing conditions related to biological resources at and within the vicinity of the site. Existing conditions were determined through literature searches and field surveys, as further described below.

Literature Review. In 2016, LSA reviewed the CDFW California Natural Diversity Data Base (CNDDB);[12] the California Native Plant Society's Inventory of Rare, Threatened, and Endangered

[12] California Department of Fish and Wildlife. 2016. California Natural Diversity Database, commercial version dated July 31, 2016. Biogeographic Data Branch, Sacramento.

Plants of California;[13] and U.S. Fish and Wildlife Service's online database[14] for lists of special-status species that have occurred or could occur on or near the site. In 2020, LSA again queried the CNDDB[15] for occurrences of special-status species within 5 miles of the site, to account for new observations and changes in the regulatory status of species.

LSA biologists also reviewed a Citizens for East Shore Parks webpage entitled *Birds at the Albany Shoreline, Albany Neck and Bulb Bird Survey,* for records of migratory birds observed approximately 2 miles northwest of the Project site,[16] and the Alameda County Breeding Bird Atlas.[17]

Field Reconnaissance Surveys. LSA conducted a reconnaissance-level site survey on July 29, 2016, to document the habitats and conditions on the Project site. LSA also evaluated how demolition and construction activities on the Project site may affect species at the adjacent Aquatic Park. LSA assessed habitats for special-status species based on the presence of suitable habitat and mapped the general location of potential jurisdictional areas. Potential roost sites for bats were searched for evidence of bat use or occupation. The biologists noted the presence of potentially jurisdictional wetlands on the site. An LSA biologist conducted a brief follow-up site visit on April 30, 2020, to confirm that conditions on and around the site had not substantially changed.

Tree Surveys. On August 26, 2016, LSA conducted a survey of trees that may be impacted by development of the site. For each tree surveyed, LSA recorded the species name, trunk circumference at four feet from the ground, number of stems, and location. The site was again visited by an arborist on October 31, 2019. The results are presented in a Preliminary Arborist Report, which was reviewed by LSA.[18] Finally, a health assessment of the existing coast live oak on the project site determined that the tree appears to be healthy and vigorous.[19] This health assessment also includes a transplant procedure for the coast live oak. Both the preliminary Arborist Report and Existing Oak Tree Health Assessment were peer-reviewed by LSA.[20]

Vegetation. Vegetation on the site consists of landscaped trees and shrubs, scattered native plants, and ruderal vegetation, as further described below.

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13 California Native Plant Society. 2016. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento. Website: www.cnps.org/inventory (accessed July 27, 2016).

14 U.S. Fish and Wildlife Service. 2016. *IPaC Trust Resources Report for 600 Addison Street, Berkeley, California*. Online species list, Sacramento Fish and Wildlife Office, Sacramento, California.

15 California Department of Fish and Wildlife. 2020. California Natural Diversity Database, commercial version dated April 30, 2020. Biogeographic Data Branch, Sacramento.

16 Citizens for East Shore Parks. 2020. Birds at the Albany Shoreline, Albany Neck and Bulb Bird Survey, Available online at: eastshorepark.org/wp-content/uploads/2016/12/Bird_Survey_Brochure_WEB.pdf (accessed January 11, 2021).

17 Richmond, B., H. Green, and D. Rice. 2011. *Alameda County Breeding Bird Atlas*. Golden Gate Audubon Society and Ohlone Audubon Society.

18 Hort Science|Bartlett Consulting. 2019. *Preliminary Arborist Report*. November 14.

19 Environmental Design, Inc. 2020. Existing Oak Tree Health Assessment and Estimate to Transplant. October 22.

20 LSA. 2021. Peer Review of Arborist Report and Tree Transplanting Report, 600 Addison Street, Berkeley, California. January 20.

Landscaping. Landscaped plants includes acacia (*Acacia melanoxylon*, *A. dealbata*), blue gum eucalyptus (*Eucalyptus globulus*), Torrey pine (*Pinus torreyana*), coast redwood (*Sequoia sempervirens*), northern catalpa (*Catalpa speciosa*), Monterey cypress (*Hesperocyparis macrocarpa*), Catalina ironwood (*Lyonothamnus floribundis),* Japanese zelkova (*Zelkova serrata*), evergreen pear (*Pyrus kawakamii*), elegant water gum (*Tristania laurina*), pittosporum (*Pittosporum undulatum*), bamboo (*Bambusa* sp.), rose (*Rosa* sp.), pride of Madeira (*Echium candicans*), and ornamental shrubs and flowers.

Native Plants. Native plants observed on the site include elderberry (*Sambucus* sp.), scattered coyote brush (*Baccharis pilularis*), and California poppy (*Eschscholzia californica*) intermixed among the ruderal vegetation.

Ruderal Vegetation. Ruderal plant species are those that colonize disturbed lands. Although native plant species can colonize disturbed land, here they are defined as non-native and weedy. Ruderal vegetation includes Italian thistle (*Carduus pycnocephalus*), wild oats (*Avena* sp.), nasturtium (*Tropaeolum majus*), sweet fennel (*Foeniculum vulgare*), Himalayan blackberry (*Rubus armeniacus*), mustard (*Brassica* sp.), English ivy (*Hedera helix*), wild radish (*Raphanus raphanistrum*), mallow (*Malva* sp.), prickly lettuce (*Lactuca serriola*), bristly ox-tongue (*Helminthotheca echioides*), pampas grass (*Cortaderia jubata*), Italian ryegrass (*Festuca perennis*), and English plantain (*Plantago lanceolata*).

Trees. As detailed in the Preliminary Arborist Report,[21] a total of 81 trees with diameters at breast height (dbh) of 6 inches or more were surveyed for the Project. These trees represent 19 different species. Native trees on the site include two coast live oaks (*Quercus agrifolia*), one of which was identified in the Preliminary Arborist Report as #63. This coast live oak tree is located in the southeastern corner of the site near the access gate on Bancroft Way. The second coast live oak, located near the western border of the project site, does not meet the definition of a "protected tree" because its three trunks are less than 26 inches in circumference, combined. It was also too small to be inventoried in the Preliminary Arborist Report, which only numbered trees with a dbh of 6 inches or more.

Additionally, LSA identified three trees along Addison Street that are street trees, because they are planted in the public right-of-way between the sidewalk and the street. These three street trees each have a dbh of approximately 4 inches.

Wildlife. Wildlife observed on the site and/or in Aquatic Park included American crow (*Corvus brachyrhynchos*), California gull (*Larus californicus*), rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), Anna's hummingbird (*Calypte anna*), and California towhee (*Melozone crissalis*). One dead black rat (*Rattus rattus*) was observed in Bolivar Road.

The five most commonly observed species at the Albany neck and bulb approximately 2 miles northwest of the site were house finch (*Haemorhous mexicanus*), California towhee, white-crowned sparrow (*Zonotrichia leucophrys*), Anna's hummingbird, and golden-crowned sparrow (*Zonotrichia*

[21] Hort Science | Bartlett Consulting. 2019, op. cit.

atricapilla). Other species that are common in the region and may occur on the site include American robin (*Turdus migratorius*), chestnut-backed chickadee (*Poecile rufescens*), ruby-crowned kinglet (*Regulus calendula*), Botta's pocket gopher (*Thomomys bottae*), fox squirrel (*Sciurus niger*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis virginiana*). The aforementioned species, in addition to several species of waterfowl and shorebirds, are known to occur west of the site in Aquatic Park. Birds often observed at the ponds within Aquatic Park include western grebe (*Aechmophorus occidentalis*), pied-billed grebe (*Podilymbus podiceps*), snowy egret (*Egretta thula*), great blue heron (*Ardea herodias*), American coot (*Fulica americana*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), scaup (*Aythya* spp.), ruddy duck (*Oxyura jamaicensis*), bufflehead (*Bucephala albeola*), and gulls (*Larus* spp.).

It should be noted that, at the time of the 2020 survey, a feral cat feeding station with cat food was present on the western edge of the site. This food subsidizes cat and rat populations in the area, which depresses native bird and other small wildlife populations. Dogs were also present on the site. At the time of the 2020 survey, one was tied to a recreational vehicle parked near the eastern edge of the site. Two more dogs were observed just outside the eastern fenceline, in association with a homeless encampment. Large amounts of garbage were observed around the encampments in the area, which likely attracts rats. Runoff from the encampments and recreational vehicles drains to the ponds in Aquatic Park.

From approximately December 2019 to January 2020, water quality in the Aquatic Park lagoons was severely impaired with high levels of bacteria and the City of Berkeley issued an advisory warning against contacting the water.[22] However, as of February 2020, bacteria levels in the lagoons have substantially improved and water quality currently meets State standards.[23] Refer to Section 3.10, Hydrology and Water Quality, for additional discussion.

Special-Status Species. For the purposes of the analysis contained in this document, special-status species are defined as follows:

- Species that are listed, formally proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act or California Endangered Species Act.
- Plant species assigned to California Rare Plant Ranks 1A, 1B, or 2.
- Animal species designated as Species of Special Concern or Fully Protected Species by the CDFW.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA Guidelines.
- Species considered as a taxon of special concern by local agencies.

[22] Berkeley, City of. 2019. Parks, Recreation, & Waterfront Department. City of Berkeley Parks, Recreation, & Waterfront Health Advisory as of October 21, 2019. Website: www.cityofberkeley.info/AquaticParkAdvisory (accessed July 16, 2020).

[23] Ibid.

Special-status plant and wildlife species on and within the vicinity of the Project site are discussed below.

Special-Status Plants. A total of 22 special-status plant species have CNDDB occurrences within 5 miles of the Project site (Table 3.D). None of these plants are likely to occur at the Project site due to the lack of suitable vegetation communities or soil substrates (e.g., salt marsh, woodland, chaparral, alkaline substrates) and prior disturbance (grading, construction, and introduction of exotic plant species) at the site.

Special-Status Wildlife. A total of 31 special-status wildlife species have CNDDB occurrences within 5 miles of the Project site (Table 3.E). The Project site provides habitat for only two special-status wildlife species: the white-tailed kite (*Elanus leucurus*) and the pallid bat (*Antrozous pallidus*). They are discussed in further detail below.

White-Tailed Kite. The white-tailed kite is a California Fully Protected Species that could nest in the trees and large shrubs on or adjacent to the Project site. Nesting has been documented near Berkeley Yacht Harbor approximately 0.8 miles northwest of the site. They are also known to nest in residential neighborhoods in Berkeley approximately 1 mile north and east of the site.

Bats. Pallid bats and other bat species could roost in the onsite outbuildings and in the larger trees on or adjacent to the site. Outbuildings located near the 600 Addison Street building and on the American Soils property were not accessed during LSA's site visit, but due to the presence of observed openings, bats could currently roost in them or may roost in them in the future. Although no suitable cavities were observed in any of the trees, the larger trees on the site, such as the eucalyptus, may provide suitable cavities for roosting bats. The main structures onsite, the 600 Addison Street building and the 91 Bolivar Drive building do not appear to provide suitable roosting habitat since no openings within the eves or roof the buildings were observed during the surveys.

Several other special-status wildlife species may occur in the salt marshes associated with San Francisco Bay, and/or the Berkeley Marina. However, these locations are separated from the Project site by I-80, other roads and barriers, and significant distance.

Riparian Habitat or Other Sensitive Natural Communities. The CNDDB contains occurrences for two sensitive natural communities, northern coastal salt marsh and valley needlegrass grassland, within 5 miles of the site. There is no salt marsh or valley needlegrass grassland on or adjacent to the site. There is no riparian habitat or other sensitive natural communities on the Project site.

State or Federally Protected Wetlands. A Preliminary Jurisdictional Delineation[24] prepared for the Project site determined that the Project site includes an approximately 2,600-square-foot (0.06-acre) basin that may qualify as either a jurisdictional wetland under the Federal Clean Water Act or the California State Water Resources Control Board Procedures. Sample point data shows the

[24] LSA. 2020. Request for Verification of a Jurisdictional Delineation – 600 Addison Street, Berkeley, Alameda County, California. September 17.

presence of wetland vegetation, hydric soils, and seasonal ponding. Whether the basin qualifies as a jurisdictional water of the Corps depends on whether a surface connection exists to the adjacent Main Lagoon within Aquatic Park, which is assumed to be a jurisdictional water of the U.S. The overflow between the basin and the Main Lagoon would connect the two features, thus causing the basin to be jurisdictional under the Federal Clean Water Act. Regardless of the extent of surface connection to the Main Lagoon, the basin is likely to qualify as a jurisdictional water of the State of California under the State Water Resources Control Board Procedures. The final determination of the extent of Corps jurisdiction on the site would depend on the results of a jurisdictional determination conducted by the Corps, which is currently under review.

Table 3.D: Special-Status Plant Species Potentially Occurring in the Vicinity of the Project Site

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence
Amsinckia lunaris Bent-flowered fiddleneck	1B	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation: 3-500 m. Blooms: March-June	No suitable habitat present onsite due to past disturbance and development.
Arctostaphylos pallida Pallid manzanita	FT, CE, 1B	Siliceous shale, sandy or gravelly soils in broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Elevation: 185 - 465 m. Blooms: December-March	No manzanitas were seen during surveys. Site is outside the known elevation range of the species. No suitable habitat present onsite due to past disturbance and development.
Astragalus tener var. *tener* Alkali milk-vetch	1B	Mesic alkaline and adobe clay soils in valley and foothill grassland, adjacent to vernal pools. Elevation: 1-60 m. Blooms: March-June	No suitable habitat present onsite due to past disturbance and development.
California macrophylla Round-leaved filaree	1B	Grassy openings in cismontane woodland, valley and foothill grassland with clay soils. Elevation: 15-1,200 m. Blooms: March-May	No suitable habitat present onsite due to past disturbance and development.
Calystegia purpurata ssp. *saxicola* Coastal bluff morning-glory	1B	Coastal bluff scrub, coastal dunes, coastal scrub, North Coast coniferous forest Elevation: 0 - 105 m. Blooms: April-September	No suitable habitat present onsite due to past disturbance and development.
Chloropyron maritimum subsp. *palustre* [=*Cordylanthus maritimus* subsp. *palustris*] Point Reyes salty bird's-beak	1B	Marshes and swamps (coastal salt). Elevation: 0-10 m. Blooms: June-October	No suitable habitat present onsite due to past disturbance and development.
Chorizanthe cuspidata var. *cuspidata* San Francisco Bay spineflower	1B	Coastal strand/dunes, coastal bluff scrub, coastal prairie, northern coastal scrub. Elevation: 3-215 m. Blooms: April-August	No suitable habitat present onsite due to past disturbance and development.
Cirsium andrewsii Franciscan thistle	1B	Mesic, sometimes serpentinite in broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub Elevation: 0-150 m. Blooms: March-July	No suitable habitat present onsite due to past disturbance and development.

Table 3.D: Special-Status Plant Species Potentially Occurring in the Vicinity of the Project Site

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence
Dirca occidentalis Western leatherwood	1B	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland Elevation: 25 - 425 m Blooms: January-April	No suitable habitat present onsite due to past disturbance and development. Site is outside the known elevation range of the species.
Extriplex joaquinana [=*Atriplex joaquiniana*] San Joaquin spearscale	1B	Seasonal alkali wetland, alkali sink/chenopod scrub, meadows and seeps, playas, valley and foothill grassland/alkaline. Elevation: 1-835 m. Blooms: April-October	No suitable habitat present onsite due to past disturbance and development.
Fritillaria liliacea Fragrant fritillary	1B	Often serpentinite, in cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation: 3 - 410 m Blooms: February-April	No suitable habitat present onsite due to past disturbance and development.
Gilia millefoliata Dark-eyed gilia	1B	Coastal dunes. Elevation: 2-30 m. Blooms: April-July	This occurrence is based on a collection made in 1863, and is considered extirpated. No suitable habitat present onsite due to past disturbance and development.
Helianthella castanea *Diablo helianthella*	1B	Usually rocky, axonal soils. Often in partial shade in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation: 60-1,300 m. Blooms: March-June	No suitable habitat present onsite due to past disturbance and development
Holocarpa macradenia Santa Cruz tarplant	FT/CE/1B	Sandy-clay soil in coastal prairie, coastal scrub, and in valley and foothill grassland. Elevation: 10-220 m. Blooms: June-October	No suitable habitat present onsite due to past disturbance and development.
Horkelia cuneata subsp. *sericea* Kellogg's horkelia	1B	Closed-cone coniferous forest, maritime chaparral, coastal scrub, dunes and coastal sandhills; sandy or gravelly openings. Primarily found on old dunes and coastal sand hills. Elevation: 10-200 m. Blooms: April-September	No suitable habitat present onsite due to past disturbance and development.
Meconella oregano Oregon meconella	1B	Coastal prairie and coastal scrub. Elevation: 250-620 m. Blooms: March-April	No suitable habitat present onsite due to past disturbance and development. Site is outside the known elevation range of the species.

Table 3.D: Special-Status Plant Species Potentially Occurring in the Vicinity of the Project Site

Species	Status[a]	Habitat/Blooming Period	Potential for Occurrence
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower	1B	Grassy and moist areas (ephemeral drainages) in chaparral, coastal prairie and coastal scrub. Elevation: 15-160 m. Blooms: March-June	No suitable habitat present onsite due to past disturbance and development.
Sanicula maritima Adobe sanicle	1B	Moist clay or ultramafic soils in meadows and seeps, valley and foothill grassland, chaparral, and coastal prairie. Elevation: 18-190 m. Blooms: February-May	No suitable habitat present onsite due to past disturbance and development.
Streptanthus albidus ssp. *peramoenus* Most beautiful jewelflower	1B	Serpentinite in chaparral, cismontane woodland, valley and foothill grassland. Elevation: 95-1,000 m. Blooms: April-September	No suitable habitat present onsite due to past disturbance and development. Site is outside the known elevation range of the species.
Suaeda californica California seablite	FE/1B	Narrow high tide zone along sandy salt marsh edges or estuarine beaches. Elevation: 0-15 m. Blooms: July-October	No suitable habitat present onsite due to past disturbance and development.
Trifolium hydrophylum *[=Trifolium depauperatum* var. *hydrophylum]* Saline clover	1B	Marshes and swamps, valley and foothill grassland, vernal pools. Elevation: 0-300 m. Blooms: April-June	No suitable habitat present onsite due to past disturbance and development.
Viburnum ellipticum Oval-leaved virburnum	2B	Chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 100-1,160 m. Blooms: May-June	No suitable habitat present onsite due to past disturbance and development.

Source: California Natural Diversity Database (California Department of Fish and Wildlife, May 2020).
[a] Status:
Federal/State
FE = Federally Endangered
FT = Federally Threatened
CE = State-Listed as Endangered
CR = State Rare
CT = State-Listed as Threatened
Rare Plant Rank
1B = California Rare Plant Rank 1B: species considered rare or endangered in California and elsewhere.
2 = California Rare Plant Rank 2 – rare, threatened or endangered in California, but more common elsewhere.

Table 3.E: Special-Status Animal Species Potentially Occurring or Known to Occur in the Vicinity of the Project Site

Species	Status[a]	Habitat	Potential for Occurrence
Invertebrates			
Danaus plexippus Monarch butterfly –Winter colony sites	[b]	Winter colony sites occur along the California coast in wind protected tree groves (eucalyptus, Monterey pine, and cypress) where nectar and water resources are nearby.	Not expected to occur. Wintered approximately 2,000 feet south of the site at the west end of Carleton Street in adjacent Aquatic Park during the winter of 2015/2016. Clusters of hundreds of butterflies observed just east of the 14th hole of disc golf course. Overwintering has not been observed in Aquatic Park since.
Western bumble bee *Bombus occidentalis*	-/SCE [c]	Feeds upon nectar and pollen from a variety of plants species, but is most adapted to native plant species. Nests in abandoned rodent burrows and bird nests. The flight period in California is from early February to late November, peaking in late June and late September. The flight period for workers and males is from early April to early November. Little is known about sites where queens overwinter. The species is currently restricted to high elevation sites in the Sierra Nevada and scattered coastal areas.	Not expected to occur. There are four presumed CNDDB extant occurrences within 5 miles of the Project site, but the most recent collections were in 1992. The site is landscaped and has few native nectar and pollen plants upon which the species relies.
Fish			
Archoplites interruptus Sacramento perch	-/CSC	Sloughs, slow moving rivers, and large lakes, including floodplain lakes, of the Central Valley	There are two CNDDB occurrences within 5 miles of the site, in Anza Lake and Jewel Lake. Although the species was not detected during surveys conducted in 2009,[d] it may be present in the ponds in Aquatic Park.
Acipenser medirostris Green sturgeon, Southern DPS	FT/CSC	Near shore marine waters, bays and estuaries, spawns in rivers in deep fast water over large cobbles, but also clean sand to bedrock. Southern most spawning population in the Sacramento River.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Eucyclogobius newberryi Tidewater goby	FE/CSC	Fresh to brackish shallow lagoons and lower stream reaches with still, but not stagnant, water.	No suitable habitat present. Considered extirpated from the adjacent Aquatic Park and San Francisco Bay,[e] but some small populations may persist.[f] Last collected in Aquatic Park in 1950.

Table 3.E: Special-Status Animal Species Potentially Occurring or Known to Occur in the Vicinity of the Project Site

Species	Status[a]	Habitat	Potential for Occurrence
Oncorhynchus tshawytscha Chinook salmon (Sacramento River winter-run ESU[g])	FE/SE	Anadromous: spawns in Sacramento River system; occurs in small numbers in San Francisco Bay.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Oncorhynchus tshawytscha Chinook salmon (Central Valley spring-run ESU)	FT/-	Anadromous: spawns in Sacramento River system; occurs in small numbers in central San Francisco Bay.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Oncorhynchus mykiss Steelhead (central California coast ESU)	FT/-	Anadromous: spawns in small coastal streams and rivers. For spawning and egg development; requires cool, well-oxygenated water with moderate flow/velocity, small to medium gravel bottom material, and moderately deep, cool pools for refuge. Rearing sites are in tributaries.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Spirinchus thaleichthys Longfin smelt	FC[h]/ST	Spends its adult life in bays, estuaries, and nearshore coastal areas, and migrates into freshwater rivers and tidally influenced freshwater streams to spawn.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Amphibians			
Rana boylii Foothill yellow-legged frog	CE/CSC	Rarely leaves riparian corridors. Breed and deposit eggs shortly after streams reach peak flow in the spring after the winter rains end. Egg masses are typically attached to the downstream side or boulders or cobble, in a sunny, shallow section of low-gradient stream. Breeding rarely occurs in well-shaded (>90 percent closed canopy) sites.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Reptiles			
Emys marmorata Western pond turtle	-/CSC	Ponds, marshes, streams, and irrigation ditches with aquatic vegetation, deep water, basking sites, and adjacent uplands that are suitable for egg-laying (sandy banks or grassland).	No suitable habitat present. Not known to occur in the adjacent Aquatic Park.

Table 3.E: Special-Status Animal Species Potentially Occurring or Known to Occur in the Vicinity of the Project Site

Species	Status[a]	Habitat	Potential for Occurrence
Masticophis lateralis euryxanthus Alameda whipsnake	FT/ST	Slopes and ravines where chaparral shrubs and oak trees form a vegetative mosaic with grasslands. Rock outcrops and an abundance of prey species such as western fence lizard.	No suitable habitat present.
Birds			
Aythya americana Redhead	-/CSC	Large, deep bodies of water; nests in freshwater emergent wetlands.	No suitable habitat present. May winter in small numbers along San Francisco Bay, such as the Emeryville Crescent; may briefly winter in Aquatic Park but does not breed in San Francisco Bay.
Pelecanus erythrorhynchos American white pelican	-/CSC	Forages over shallow inland waters and coastal marine habitats, nests on isolated islands or peninsulas.	No suitable habitat present. May forage and roost in Aquatic Park, but does not breed in San Francisco Bay.
Pelecanus occidentalis californicus California brown pelican	FD/SD/CFP	Coastal areas; nests on islands.	No suitable habitat present. May forage and roost in the adjacent Aquatic Park, but does not breed in San Francisco Bay.
Elanus leucurus White-tailed kite	-/CFP	Open grasslands, meadows, or marshes; require dense-topped trees or shrubs for nesting and perching.	Marginal nesting and foraging habitat present. Nesting has been documented near the Berkeley Yacht Harbor approximately 0.8 miles northwest of the site. Also known to nest in residential neighborhoods in Berkeley.
Circus cyaneus Northern harrier	-/-/CSC	Nests in wet meadows and marshes, forages over open grasslands and agricultural fields.	No suitable habitat present. Limited foraging habitat present in Aquatic Park. Known to nest less than 1 mile north of site in northwestern corner of the Berkeley Meadow, but not in since 2002.
Falco peregrinus American peregrine falcon	FD/SD/CFP	A variety of open habitats including coastlines, mountains, marshes, bay shorelines, and urban areas. Nest on cliffs, bridges, and tall buildings. Feeds almost exclusively on birds.	Known to nest on the University of California campus, approximately 2.4 miles east of the Project site. May occasionally forage over the site, but no suitable nesting habitat is present on the site.
Laterallus jamaicensis coturniculus California black rail	ST/CFP	Salt marshes bordering larger bays, also found in brackish and freshwater marshes.	No suitable habitat present on the site or in the adjacent Aquatic Park.

Table 3.E: Special-Status Animal Species Potentially Occurring or Known to Occur in the Vicinity of the Project Site

Species	Status[a]	Habitat	Potential for Occurrence
Rallus longirostris obsoletus California Ridgway's rail	FE/SE/CFP	Tidal salt marshes with sloughs and substantial cordgrass (*Spartina* sp.) cover.	No suitable habitat present on the site or in the adjacent Aquatic Park.
Sternula antillarum browni California least tern	FE/SE/CFP	Sandy beaches, alkali flats, hard-pan surfaces (salt ponds).	No suitable habitat nesting habitat present on the site or in the adjacent Aquatic Park. Forages west of site within the Emeryville Crescent portion of the San Francisco Bay.
Athene cunicularia Burrowing owl	-/-/CSC	Open, dry grasslands that contain abundant ground squirrel burrows.	No suitable habitat present on the site. Not known to occur in the adjacent Aquatic Park, but wintering individuals have been observed at Cesar Chavez Park, North Basin Strip of the Berkeley Marina, the Berkeley Meadow,[i] and the Albany Plateau,[j] but no nesting confirmed to date.
Lanius ludovicianus Loggerhead shrike	-/CSC	Open grasslands and woodlands with scattered shrubs, fence posts, utility lines, or other perches; nests in dense shrubs and lower branches of trees.	No suitable habitat present on the site. Limited suitable nesting and foraging habitat present in the adjacent Aquatic Park.
Geothlypis trichas sinuosa San Francisco common yellowthroat	-/CSC	Salt, brackish, and freshwater marshes; and riparian woodlands; nests on or near ground in low vegetation.	No suitable habitat present on the site. Suitable nesting and foraging habitat present in the adjacent Aquatic Park.
Passerculus sandwichensis alaudinus Bryant's savannah sparrow	-/CSC	Nests and forages in salt marsh and adjacent ruderal habitat, and moist grasslands in the fog belt, but has also be found in dry grasslands back from the coast	No suitable habitat present on the site. Limited suitable nesting and foraging habitat present in the adjacent Aquatic Park.
Melospiza melodia pusillula Alameda song sparrow	-/CSC	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed and marsh gumplant.	No suitable habitat present on the site. Limited suitable nesting and foraging habitat present in the adjacent Aquatic Park.
Mammals			
Sorex vagrans halicoetes Salt marsh wandering shrew	-/CSC	Tidal marshes with abundant driftwood and other debris (for shelter and foraging).	No suitable habitat present on the site or in the adjacent Aquatic Park.
Reithrodontomys raviventris Salt-marsh harvest mouse	FE/SE/CFP	Tidal salt marshes of San Francisco Bay and its tributaries. Requires tall, dense pickleweed for cover.	No suitable habitat present on the site or in the adjacent Aquatic Park. Known to occur west of site on the far side of I-80 in the Emeryville Crescent marsh.

Table 3.E: Special-Status Animal Species Potentially Occurring or Known to Occur in the Vicinity of the Project Site

Species	Status[a]	Habitat	Potential for Occurrence
Antrozous pallidus Pallid bat	-/CSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rockier areas for roosting. Needs roosts that protect bats from high temperature and disturbance.	Suitable roosting habitat may be present in large trees on or adjacent to site, in onsite shed northwest of the existing Berkeley Research Company Fathom Engineering building, and in the diesel fuel shed in the American Soils Products yard, but the main structures on the site do not appear to provide suitable roosting habitat.
Nyctinomops macrotis Big free-tailed bat	-/CSC	Low-lying arid areas in Southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	No habitat suitable present. Single occurrence within 5 miles of the site is based on an unknown number of specimens collected in 1916 at an unknown location in Berkeley.
Corynorhinus townsendii Townsend's big-eared bat	SCT/CSC	Riparian woodlands, wetlands, forest edges, and open woodlands; roosts in caves, mines, and old buildings.	No suitable roosting habitat present. May forage over the site or Aquatic Park. The single CNDDB occurrence within 5 miles of the site is based on specimens collected in 1938.

Source: California Natural Diversity Database (California Department of Fish and Wildlife, May 2020).

[a] Status:

Federal/State

FE = Federally Endangered
FT = Federally Threatened
FD = Federally Delisted
SE = State Endangered
ST = State Threatened
SCT = State Candidate Threatened
SCE = State Candidate Endangered
SD = State Delisted
CSC = California Species of Special Concern
CFP = California Fully Protected Species

[b] Winter colonies recognized by CDFW and USFWS as a sensitive species in California and tracked by the CNDDB, but do not have a special status.

[c] On June 12, 2019, the California Fish and Game Commission (Commission) voted to accept a petition from the Xerces Society (2018) to consider listing four subspecies of bumble bee, including the Western bumble bee (Bombus occidentalis), under CESA. As a result of this decision, the Western bumble bee is a state candidate endangered species; as such, it is temporarily afforded the same protection as state-listed threatened or endangered species.

[d] ENVIRON. 2010. *Berkeley Aquatic Park Fisheries and Benthic Ecology Impact Assessment*.

[e] Moyle, P.B. 2002. *Inland Fishes of California*. University of California Press, Berkeley.

[f] Leidy, R. A. 2007. *Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary, California*. San Francisco Estuary Institute Contribution No. 530. San Francisco Estuary Institute, Oakland, California.

[g] ESU = Evolutionarily Significant Unit. The National Marine Fisheries Service considers an ESU a "species" under the Endangered Species Act.

[h] The federal Candidate status is for the San Francisco Bay-Delta Distinct Population Segment.

[i] LSA observations and East Bay Regional Park District observations 2009 and 2010 as cited in LSA Associates, Inc. 2002a. Habitat Issues - Animal Life section in Eastshore Park Project Resource Inventory. Prepared for California Department of Parks and Recreation, East Bay Regional Park District.

[j] Birds at the Albany Shoreline, Albany Neck and Bulb Bird Survey.

a. Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? ***(Less-Than-Significant with Mitigation Incorporated)***

The proposed Project would result in redevelopment of the Project site and off-site improvements primarily within the right of way of Bolivar Drive. Minor improvements would also occur immediately adjacent to and east of Bolivar Drive and within the western edge of Aquatic Park. However, the proposed Project would not directly or indirectly impact the lagoons or marsh habitat at Aquatic Park. Waterfowl, shorebirds, and other birds that forage and/or nest in the park are habituated to disturbance caused by recreational activities and adjacent commercial activities and are likely to tolerate construction-related disturbance at the Project site.

Special-status species that may nest in the park include Alameda song sparrow (*Melospiza melodia pusillula*; California Species of Special Concern), Bryant's savanna sparrow (*Passerculus sandwichensis alaudinus*; California Species of Special Concern), and San Francisco common yellowthroat (*Geothlypis trichas sinuosa*; California Species of Special Concern), but these species are unlikely to nest within 100 feet of the Project site due to the lack of suitable marsh, riparian, or undisturbed grassland habitat. The northern harrier (*Circus hudsonius*; California Species of Special Concern) has nested northwest of the site in the Berkeley Meadow[25] but this species is unlikely to nest at Aquatic Park due to the lack of suitable undisturbed expanses of grassland. According to LSA biologists' personal observations, burrowing owls (*Athene cunicularia*; California Species of Special Concern) regularly winter approximately 1 mile northwest of the site at Cesar Chavez Park, but this species is not known to winter or nest in Aquatic Park. Due to the large numbers of people recreating in Aquatic Park it is unlikely a burrowing owl would go undetected.

The tidewater goby (*Eucyclogobius newberryi*; Federally Endangered; California Species of Special Concern) historically occurred in the ponds in Aquatic Park, but the species is currently considered extirpated from the ponds at Aquatic Park and the San Francisco Bay.[26] There is a low potential for Sacramento perch (*Archoplites interruptus*; California Species of Special Concern) to occur in the ponds at Aquatic Park. Water in the park periodically has low dissolved oxygen concentrations, which is not favorable to sustaining fish populations.[27] Therefore, the Project would have no adverse effect on Sacramento perch or other fishes in Aquatic Park. As further detailed in Section 3.10 Hydrology and Water Quality, the applicant would be required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the C.3 Stormwater Technical Guidance[28] to detail the Best Management Practices (BMPs) to be implemented as part of the Project. The Project would comply with all applicable NPDES regulations, including the Construction General Permit, COA: Stormwater Requirements and MRP. Construction and operational BMPs would be implemented to reduce pollutants of concern in stormwater runoff from the Project site. Additionally, groundwater

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25 California Department of Fish and Wildlife. 2016, op. cit.

26 U.S. Fish and Wildlife Service. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*), Portland, Oregon: U.S. Fish and Wildlife Service.

27 Berkeley, City of. 2012a. *Aquatic Park Improvement Program Draft Environmental Impact Report, Section 4.2 Biological Resources*.

28 Clean Water Program. 2017. C.3 Stormwater Technical Guidance, Version 6.0, October.

dewatering would comply with the requirements of the City's Toxics Management Division to ensure that dewatering activities do not introduce pollutants into surface waters. Compliance with existing regulations would ensure that potential impacts related to additional sources of polluted runoff would be less than significant.

A population of wintering Monarch butterflies (*Danaus plexippus*;) was recorded in November 2015, overwintering in clusters of hundreds in eucalyptus trees approximately 0.5 miles south of the Project site, just east of the 14th hole of the disc golf course at the west end of Carleton Street. This species has a State rank of S2S3, which means it is between imperiled and vulnerable in California. Overwintering sites are tracked by the CNDDB. The monarch butterflies that overwintered in Aquatic Park chose the site despite nearby human disturbance (i.e., active railroad tracks, in a busy park, less than 0.25 miles from I-80). Other nearby overwintering sites have included eucalyptus trees at UC Berkeley's Richmond Field Station, Albany Hill, and the San Leandro Golf Course. Overwintering monarch butterfly populations have declined by over 95 percent since the 1980s.[29] The cause of this decline is likely due to some combination of habitat loss, insecticides, climate change, parasites, disease, and predators. The proposed Project would not include the removal of the trees the monarchs are known to have overwintered in. Therefore, the proposed Project would have a less-than-significant impact related to monarch butterflies.

Construction activities may result in the removal of trees and large shrubs that could be used by nesting white-tailed kites. If conducted during the nesting season (February 1 to August 31), such activities could directly impact nesting kites. Construction-related disturbance (e.g., noise, vehicle traffic, personnel working adjacent to nesting habitat) could also indirectly impact nesting kites by causing adults to abandon nests in nearby trees or other vegetation, resulting in nest failure and reduced reproductive potential. However, development projects that require a Use Permit are required to comply with the following COA that addresses these potential impacts:

> ***COA: Avoid Disturbance of Nesting Birds.*** Initial site disturbance activities, including vegetation and concrete removal, shall be prohibited during the general avian nesting season (February 1 to August 31), if feasible. If nesting season avoidance is not feasible, the applicant shall retain a qualified biologist to conduct a preconstruction nesting bird survey to determine the presence/absence, location, and activity status of any active nests on or adjacent to the project site. The extent of the survey buffer area surrounding the site shall be established by the qualified biologist to ensure that direct and indirect effects to nesting birds are avoided. To avoid the destruction of active nests and to protect the reproductive success of birds protected by the Migratory Bird Treaty Act and the California Fish and Game Code, nesting bird surveys shall be performed not more than 14 days prior to scheduled vegetation and concrete removal. In the event that active nests are discovered, a suitable buffer (typically a minimum buffer of 50 feet for passerines 250 feet for raptors) shall be established around such active nests and no construction shall be allowed inside the buffer areas until a qualified biologist has determined that the nest is no longer active (e.g., the nestlings have fledged and are no longer reliant on the nest). No ground-disturbing activities shall occur within this buffer until the qualified biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Nesting

[29] Western Association of Fish and Wildlife Agencies. 2019. *Western monarch butterfly conservation plan, 2019–2069*. Version 1.0.

bird surveys are not required for construction activities occurring between August 31 and January 31.

The proposed Project would increase the amount of reflective glass material in the area through the introduction of new three-story, approximately 45-foot-tall buildings on the site. White-tailed kites and other bird species generally do not see glass, so they fly into it, causing injury and mortality. Annually, it is estimated that between 365 and 988 million birds are killed by window collisions in the United States.[30] An increase in the amount of glass and the increased height of the buildings, in addition to a decrease in the building setbacks from Aquatic Park, would increase the risk of white-tailed kits and other birds colliding with windows that face Bolivar Drive/Aquatic Park. In addition, at night, during spring and fall bird migrations when inclement weather occurs, birds can be attracted to lighted structures, although this is less common within developed urban environments. The majority of bird collisions occur during daytime hours.

The City of Berkeley considers the size and location of proposed new building construction within the City and applies applicable project-specific conditions related to bird safe building standards where necessary. The USFWS provides guidance and best practices for the use of building glass, lighting, and landscaping infrastructure and design. In addition, a local agency with shoreline along San Francisco Bay, the City and County of San Francisco, has adopted Standards for Bird Safe Buildings,[31] which specifically identify expanses of uninterrupted glazed building segments of 24 square feet or larger as a hazard to birds. As described in Section 1.0, Project Information, the proposed Project would include recessed glazed surfaces. Additionally, overhangs and awnings and the placement of landscaping along the site perimeter would further break up the massing of the building. However, due to the Project site's proximity to Aquatic Park, the following mitigation measure, which incorporate relevant measures from the City's bird safe building standards, is required to ensure that the potential for bird strikes is reduced to the extent feasible. Implementation of Mitigation Measure BIO-1 would reduce potential window strikes of white-tailed kites and other bird species to a less-than-significant level.

Mitigation Measure BIO-1: The Project shall implement applicable measures identified in the City's project-specific bird safe building standards and the U.S. Fish and Wildlife Service's best practices for reducing bird strikes with buildings.[21] Specifically, and at a minimum, windows of the proposed buildings shall include external film and/or glass coverings designed to reduce bird strikes. Such measures shall incorporate one or more of the following glazing options for 90 percent of the windows on the west facing building façade, or a lesser amount if appropriate and agreed to by a qualified biologist; 100 percent of all glass balcony elements shall include the same treatments:

30 U.S. Fish and Wildlife Service. 2016. Division of Migratory Bird Management. *Reducing Bird Collisions With Buildings And Building Glass Best Practices*. July.

31 City and County of San Francisco. 2020. *Design Guide: Standards for Bird-Safe Buildings*. Available online at: sfplanning.org/sites/default/files/resources/2019-09/Design%20Guide%20Standards%20for%20Bird%20Safe%20Bldgs_Final.pdf (accessed January11, 2021).

- Glass that reflects the ultraviolet light, such as '"Ornilux;"
- Glass which has photovoltaic cells embedded such as "IQ Glass," or "Voltalux;"
- Dichroic glass;
- Fritted glass such as Viracon silk-screen;
- Etched glass;
- Translucent glass such as "Profilit;" or
- Film.

In addition, all exterior lighting included as a part of the proposed project shall light downwards instead of towards the sky, interior lights shall be turned off at night and limited to required security lighting during all times of the year. , Furthermore, interior plantings shall be located away from any untreated windows where birds may see them and attempt to fly into them.

The proposed building treatments and window glazing shall be incorporated into the Final Design Plans and submitted to the City of Berkeley Planning Department for review and approval by a qualified biologist prior to approval of Final Design by the Design Review Committee.

Although no bat sign (e.g., urine stains, guano, odor) was observed during the field surveys, onsite outbuildings and the larger trees on or adjacent to the site appear to contain suitable openings for bats such as pallid bats and various myotis species. These structures, especially if abandoned in the future, could attract roosting pallid bats. Although no suitable cavities were observed in any of the trees, the larger trees on the site, such as the eucalyptus, may provide suitable cavities for roosting pallid bats. Demolition of structures while bats are present could result in loss of the roost and impacts to bats. Implementation of the following mitigation measures would reduce potential impacts to a less-than-significant level.

Mitigation Measure BIO-2a: Prior to the initiation of demolition or tree removal activities occurring during the spring, summer, or fall months (March 1 through November 30), the Project applicant shall retain a qualified biologist to conduct a presence/absence survey to evaluate the site for the occurrence of bats and bat roosts. The surveys shall be scheduled to allow sufficient time to implement mitigation if bats are found during the survey. The Project applicant shall submit a memorandum with the demolition permit application identifying the qualified biologist retained to conduct the survey and the date

of the survey. A second memorandum detailing the findings shall be prepared by the qualified biologist and submitted to the City after completion of the survey.

Mitigation Measure BIO-2b: If a bat roost is found in any onsite buildings, the species of bat using the roost shall be identified. If the roost is occupied by common species and is not used as a maternity roost, as determined by a qualified biologist, then methods to encourage the bats to leave the roost or to prevent them from returning to the roost shall be implemented prior to roost removal. A mitigation plan shall be developed by the qualified biologist to specify the methods to be used and the timing of the activities. These methods could include removal of roosting sites during the time of day the roost is unoccupied or the installation of one-way doors, allowing the bats to leave the roost but not to re-enter. This mitigation plan shall be submitted to the City for review and approval prior to the initiation of demolition or tree removal activities.

Mitigation Measure BIO-2c: If only common species are observed during the survey of the site and the site is not found to be used as a maternity roost, the Project applicant shall retain a qualified biologist to conduct preconstruction surveys for bat roosts in existing buildings prior to construction activities. The survey shall take place no more than 30 days prior to construction/demolition/removal activities. Preconstruction surveys shall be repeated if demolition or construction activities are delayed more than 30 days.

Mitigation Measure BIO-2d: If special-status bats (e.g., pallid bat) are found onsite, and the roost would be disturbed or destroyed during development, an artificial roost shall be provided. The roost shall be constructed and placed onsite or at a City- and CDFW-approved off-site mitigation area prior to removal of the original roost. Materials from the roost site shall be salvaged, when feasible, to be used in the construction of artificial roosts. A mitigation plan specifying the construction details and siting of the structure shall be prepared by the qualified biologist and approved by the City and CDFW prior to removal of the existing roost. The Project applicant shall provide a secure source of funding for the monitoring of the artificial roost for a period of 5 years and for implementing actions to remediate the artificial roost if it does not attract bats. A report documenting the implementation of the plan shall be provided to the City and CDFW within one month of completion of the artificial roost. Annual monitoring reports shall be provided to the City and CDFW by the Project applicant by November 30 of each year, for the 5 year

period. The mitigation plan shall be completed and implemented prior to the issuance of the demolition permit.

Mitigation Measure BIO-2e: If bat roosts are identified for protection as a result of surveys conducted as part of Mitigation Measure BIO-2, pruned limbs or cut trees shall be left on the ground in place for at least 24 hours after cutting to allow any bats that may be roosting in the trees to leave the roosts prior to removal.

Mitigation Measure BIO-2f: Removal of maternity roosts for any species of bats either common or special-status shall be coordinated with CDFW prior to removal. Maternity roosts for any species of bat, either common or special-status, shall not be demolished until a qualified biologist has determined that the young are able to fly independently of their mothers.

With implementation of the above COA and mitigation measures, implementation of the proposed project would result in less-than-significant impacts to special-status wildlife species, including special-status and common bird species that are present within the immediate vicinity of Aquatic Park.

As described in Table 3.E, the Project site may provide suitable habitat for pallid bats and white-tailed kites, but does not provide habitat for the remaining special-status species identified by the CNDDB. Similarly, no other special-status wildlife species are expected to occur on the Project site . Therefore, the landscaping improvements included in the proposed Project, particularly the proposed native plantings proposed along the site perimeter, could create more habitat for common wildlife and insect species as compared to existing conditions. In addition, overall improvements to water quality associated with removal of the soil facility from the Project site and associated sedimentation and runoff could be expected to minimally improve habitat within and adjacent to the lagoons.

b. Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? ***(No Impact)***

The proposed Project would not adversely affect any riparian habitat, which is absent from the site. Similarly, off-site improvements that would occur within the Bolivar Drive right of way and adjacent areas within Aquatic Park also would not result in adverse effects to any riparian areas, as such vegetation within the areas proposed for the off-site streetscape improvements does not exist. Northern coastal salt marsh (a baylands habitat) is the only special-status natural community that the CNDDB lists within 5 miles of the site. Northern coastal salt marsh is not present at the Project site and would not be affected by the proposed Project. Therefore, there would be no impact to riparian habitats or sensitive natural communities.

c. Would the Project have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? ***(Less-Than-Significant with Mitigation Incorporated)***

As previously described, an approximately 2,600-square-foot (0.06-acre) basin that is likely to qualify as either a jurisdictional wetland under the Federal Clean Water Act or the California State Water Resources Control Board Procedures is present on the Project site. Regardless of the extent of surface connection to the Aquatic Park Main Lagoon, the basin is likely to qualify as a jurisdictional water of the State of California under the State Water Resources Control Board Procedures. The final determination of the extent of Corps jurisdiction on the site would depend on the results of a jurisdictional determination conducted by the Corps, which is currently under review by the Corps. If jurisdictional, unpermitted alteration or fill of this wetland would be a significant impact and regulated activity. Implementation of Mitigation Measure BIO-3 would reduce potential impacts to this potential State and/or federally protected wetland to a less-than significant level.

Mitigation Measure BIO-3: The Project applicant shall compensate for impacts to all areas verified as jurisdictional on the site. The impacted features shall be mitigated at a minimum 1:1 ratio consistent with the Corps "no net loss" policy. The Project applicant shall obtain the necessary permits from the Corps and/or RWQCB (if required) for any fill of jurisdictional areas. All terms of the permits shall be implemented as a condition of the Project. If permits require mitigation at a higher ratio than 1:1, that requirement shall be met.

In addition, off-site improvements associated with the Project's stormwater treatment design and improvements to Bolivar Drive would not affect any jurisdictional features or wetlands. Trenching across Bolivar Drive to accommodate the storm drainage outfall and the outfall itself would not occur within any wetland areas or near the Main Lagoon area, which is presumed to be jurisdictional at the top of bank. Similarly, proposed pathways and other improvements would be set back from the Main Lagoon. Therefore, potential impacts to off-site wetlands or jurisdictional features would not occur.

d. Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? ***(Less-Than-Significant with Mitigation Incorporated)***

The Project site is not located within a migratory wildlife movement corridor. Furthermore, most of the species that likely use the site are "generalists" that are adept at moving through urban landscapes. However, trees, shrubs, other vegetation, and structures have the potential to support nests of many common native bird species. The only nest observed during LSA's field surveys was an inactive black phoebe or barn swallow nest. All native birds and their nests, regardless of their regulatory status, are protected by California Fish and Game Code. If conducted during the breeding season (February through August), vegetation removal and other construction activities could directly impact nesting birds by removing trees and/or vegetation, or structures that support active

nests. Implementation of COA: Avoid Disturbance of Nesting Birds would ensure that potential impacts to nesting birds would be less than significant. In addition, potential operation period impacts to special-status and common bird species present within the vicinity of the site would be reduced to a less-than-significant level with implementation of Mitigation Measure BIO-1.

Although no bat sign (e.g., urine stains, guano, odor) was observed during the field survey, the aforementioned outbuildings and the larger trees on or adjacent to the site appear to contain suitable openings for bats and these structures, especially if abandoned in the future, could attract roosting bats. Although no suitable cavities were observed in any of the trees, the larger trees on the site, such as the eucalyptus, may provide suitable cavities for roosting bats. All maternity bat roosts, regardless of the species' status, are protected as sensitive habitat. Impacts to maternity roosting sites for bats would be considered significant. Demolition of the outbuildings or removal of trees while bats are present could result in loss of the roost and impacts to bats. Implementation of Mitigation Measures BIO-2a through BIO-2f would reduce potential impacts to other roosting bats to a less-than significant level.

e. Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ***(Less-Than-Significant with Mitigation Incorporated)***

BMC Section 12.44.020[32] protects certain trees, and the City's Coast Live Oak Tree Ordinance[33] restricts removal of certain coast live oaks within the City.

Four trees within and immediately adjacent to the site are considered protected trees under City ordinances. The three street trees on Addison Street are protected under BMC Section 12.44.020 which protects trees, shrubs, and plants growing in or on any street, parking strip, public square, park or playground in the City. Additionally, a protected coast live oak measuring 47 inches in circumference at breast height is located near Bancroft Way and the UPRR tracks. This oak tree is

[32] BMC Section 12.44.020: It unlawful for any person to cut, trim, remove, mutilate, injure or in any way impair the growth of any tree, shrub or plant being or growing in or on any public property within the City, or to cause or permit the same to be done. Provided, however, that in the event that any person desires permission to cut, trim, remove or in any way impair the natural growth of any such tree, shrub or plant, application shall first be made to the Director of Recreation and Parks for a permit therefor. Upon receipt of such application, the Director of Recreation and Parks may cause an inspection to be made and may thereafter issue or refuse to issue a permit for such work. Provided, further, that whenever it is deemed necessary by the Director of Recreation and Parks, he may require the work specified in said application, or any part thereof, to be done under his supervision, and the cost of such supervision shall be borne by the applicant if so determined by the Director of Recreation and Parks.

[33] Coast Live Oak Tree Ordinance (Ordinance No. 6,905 N-S): a) A moratorium is declared on the removal of any single stem coast live oak tree of a circumference of 18 inches or more or any multi-stemmed coast live oak with an aggregate circumference of 26 inches or more at a distance of four feet up from the ground; b) Any pruning of a coast live oak that is excessive and injurious (removal of more than one-fourth of the functioning leaf, stem, or root system in any 24 month period) to the tree is prohibited; and c) an exception may be made if the City Manager, or his designee, finds that the protected tree is a danger to life or limb due to the condition of the tree, or is in danger to property, and that the only mitigation would be removal of the tree.

the only tree on the Project site that is protected under City's Coast Live Oak Tree Ordinance (Ordinance No. 6,905 N-S, BMC Section 6.52.010). This ordinance restricts removal or excessive pruning of coast live oaks of a certain minimum size within the City. A second coast live oak tree is located on the site, but has an aggregate circumference of less than 26 inches, , and is not protected under the ordinance.

The proposed Project could impact protected trees, including City trees and one mature coast live oak tree located on the Project site. Offsite improvements proposed along Bolivar Drive are not currently anticipated to result in the removal of any trees located across from the Project site. The existing protected coast live oak tree on the site would be removed and transplanted to just south of its current location, pursuant to the relocation measures outlined in the Existing Oak Tree Health Assessment and Estimate to Transplant report prepared for the proposed Project.[34]

The Project applicant would be required to obtain the appropriate tree removal permits from the City for removal of any street trees on Addison Street. Consistent with City requirements, all impacted street trees would be replaced at a minimum 1:1 ratio. In addition, implementation of Mitigation Measures BIO-4a and 4b, which include the recommendations for transplanting the existing oak tree,[35] would ensure that the proposed Project does not conflict with any local policies or ordinances protecting biological resources and that potential impacts to protected trees would be reduced to a less-than-significant level.

Mitigation Measure BIO-4a: The following tree protection measures shall be implemented to protect any street trees that are preserved:

- Tree Avoidance. The Project shall avoid the protected street trees. Tree Protection Fencing (TPF) shall be indicated on the Project plans.

- Tree Protection Fencing. Prior to the start of construction, TPF shall be installed around all Project trees that will be retained. The TPF shall be maintained during the construction to prevent direct damage to trees and their growing environment. The TPF shall consist of a high-visibility fence supported by metal "T-posts." Where a tree is in a tree well or planter, or where the dripline extends into the work area, pedestrian walkways, or vehicle ways and would impede construction or public traffic, installation of the TPF can be adapted to the tree setting to provide the maximum allowable distance between the hardscape/work zone and the trunk. If space is severely constricted and/or the installation of T-posts could damage tree roots, the tree trunks can be wrapped in burlap-wrapped wattle wrapped in high-visibility fence. The TPF or wattle shall be

[34] Environmental Design, Inc. 2020. Existing Oak Tree Health Assessment and Estimate to Transplant. October 22.

[35] Ibid.

installed as part of the site preparation before construction activities or tree removal or trimming begins and shall be installed under the supervision of a qualified arborist. The TPF shall not be altered in any way that would increase the encroachment on the avoided trees during construction activities.

- Tree Maintenance During Construction and Protection of Root Zones. Tree roots often extend far beyond the canopy dripline. In order to temper soil moisture and temperature, a 5-inch layer of mulch shall be placed within the tree protection zone. Preserved trees shall be provided with supplemental watering at least one month prior to the start of construction and periodically during construction. Individual tree basins shall be watered at a minimum frequency of once every 30 days during between mid-March and Mid-September (warm weather growing season).

- Excavation Work Within the Dripline of Retained Trees Shall be Done with Low Impact Machinery and Hand Tools. If roots of retained trees become exposed during construction and need to be removed to allow construction to proceed, these roots shall be cut cleanly with a sharp blade and covered with soil immediately. Tree roots shall not be pulled or torn.

- Tree Protection Signage. A warning sign that clearly states "Keep Out - Tree Protection Area" shall be prominently displayed on each TPF. The sign shall be a minimum of 8.5 inches by 11 inches, be laminated in plastic, and placed on all sides of the enclosures.

- Use of Heavy Equipment. Heavy machinery shall not be allowed to operate (excavation, grading, drainage and leveling) or to park within the drip line of avoided trees unless approved by a qualified arborist.

- Storage of Construction Materials and Debris. Construction materials (e.g., gravel, aggregate, heavy equipment) or Project debris and waste material shall not be placed adjacent to or against the trunks of avoided trees. Disposing or depositing of oil, gasoline, chemicals, or other harmful materials within the drip line or in drainage channels, swales, or areas that may lead to the drip line, is strictly prohibited.

- Monitoring. A certified arborist shall be retained for periodic monitoring of the Project site and the health of trees to be avoided. The certified arborist shall be present whenever construction activities that may pose a potential threat to the health of the trees to be avoided may occur.

- Incidental Damage to Retained Trees. The attachment of wires, signs, and ropes to any retained tree is strictly prohibited. Injury to trees shall be avoided.

- Trimming. All pruning of trees shall be performed by a licensed contractor familiar with International Society of Arboriculture pruning guidelines and shall comply with the guidelines established by the International Society of Arboriculture; Best Management Practices; Tree Pruning and any special conditions as determined by a certified arborist.

Mitigation Measure BIO-4b: The coast live oak tree in the southeastern corner of the site shall be transplanted on site, in compliance with the Transplant Procedures and Post-Transplant Maintenance Recommendations outlined in the Existing Oak Tree Health Assessment and Estimate to Transplant report prepared for the proposed Project.[36] These measures shall be incorporated into the final design and construction specifications for the proposed Project and submitted to the City for review and approval prior to issuance of a tree removal permit for the coast live oak.

The Project applicant shall provide a report prepared by a certified arborist to the City of Berkeley Planning Department detailing the health and maintenance of the transplanted oak tree on an annual basis for a period of ten years. If the coast live oak tree dies within ten years of being transplanted it shall be replaced on a 1:1 basis. The size of the replacement tree shall be a 15-gallon, or larger, specimen, measuring one inch or more in diameter at a point one foot above the base, and not less than seven feet in height, measured from the base. The size and number of replacement tree(s) shall approximate the value of the tree to be replaced. Tree values shall be determined using the latest edition of "Guide for Plant Appraisal" by the International Society of Arboriculture.

Implementation of Mitigation Measures BIO-4a and BIO-4b would reduce potential impacts to protected trees to a less-than significant level.

[36] Ibid.

The Aquatic Park Improvement Program includes concept-level designs to improve water quality and habitat at Aquatic Park while maintaining the balance of recreational uses and habitat areas, among other objectives. Development of the proposed Project would not conflict with these objectives but would instead contribute to improved water quality and thereby aquatic habitat by removing a source of existing pollutants (i.e., the soils facility) and by constructing off-site improvements along Bolivar Drive that would enhance habitat and vegetation adjacent to the Main Lagoon. Therefore, the proposed Project would not conflict with, but rather would further, the objectives of the Aquatic Park Improvement Program related to biological resources.

f. Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ***(No Impact)***

The Project area is not subject to any adopted habitat conservation plan or natural community conservation plan. Therefore, the proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or State habitat conservation plan and no impact would occur.

3.5 CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

*a. Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5? **(Less-Than-Significant with Mitigation Incorporated)***

Cultural resources are sites, buildings, structures, objects, and districts that may have cultural value for their historical significance. For a cultural resource to be considered a "historical resource" for purposes of CEQA, it generally must be 50 years or older (CCR section 4852(d)(2)) and: (1) be listed in, or determined eligible for listing in, the California Register of Historical Resources; (2) be included in a local historical register of historical resources, as defined in Public Resources Code (PRC) section 5020.1(k) or identified as part of a survey meeting the requirements of PRC section 5024.1(g); or (3) be determined by the lead agency as historically significant.

To identify historical resources at the Project site, the following tasks were completed: (1) a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System;[37] (2) cultural resource field surveys; (3) an archaeological manual excavation to identify subsurface archaeological deposits; and (4) archaeological monitoring of geotechnical bore excavations. The results of these tasks are summarized below.

NWIC Records Search. A search of the NWIC database indicates that there are no previously recorded archaeological cultural resources at the Project site. The two closest archaeological cultural resources to the Project site are CA-ALA-307 and CA-ALA-390. These archaeological cultural resources are described below.

> ***CA-ALA-307 (West Berkeley Shellmound—Berkeley City Landmark #227).*** The West Berkeley Shellmound (the "Shellmound"), which the State has assigned a trinomial of CA-ALA-307 and the City has designated City Landmark #227, is recorded north of University Avenue, one block north of the Project site. There are two "official" boundaries of CA-ALA-307: the more inclusive boundary recognized by the State Office of Historic Preservation, as indicated on the NWIC's cultural resource site locations mapping, and the City's Landmark boundary for the Shellmound. The State's boundary for CA-ALA-307 extends from just west of Second Street to just west of Fifth Street; the north and south boundary extends from just north of Hearst Avenue to

[37] The NWIC is an affiliate of the State of California Office of Historic Preservation and is the official State repository of cultural resources records and reports for Contra Costa County.

University Avenue on the south. The City's Landmark designation for the resource encompasses a rectangular area bound by University Avenue on the south, Hearst Avenue on the north, Second Street on the west, and Fourth Street on the east.

In its original condition, the Shellmound was a large ovate mound located on the north bank of Strawberry Creek, in proximity to the stream's entrance to San Francisco Bay. In 1949, archaeologist Arnold Pilling prepared an Archaeological Site Survey Record for the Shellmound – based on Nels Nelson's survey information compiled in the first decade of the 20th century – and stated that the site was "between Hearst and University streets and between 2nd and 4th streets."[38]

Intensive investigation of the Shellmound took place in the mid-20th century. By this time, however, most of the Shellmound had been systematically demolished by development and related ground disturbance. Shellmound materials were scattered throughout the surrounding area as agricultural fertilizer and for road construction and paving. As a result, the original conditions of the Shellmound's exact boundaries were never properly defined. Based on Wallace and Lathrap's estimates, the original mound dimensions were 350 by 600 feet, with its long axis paralleling Strawberry Creek; however, when investigated by UC Berkeley in 1950, only a 45- by 100-foot portion of the site remained.[39]

On February 7, 2000, the Berkeley Landmarks Preservation Commission voted to designate the Shellmound as Berkeley City Landmark #227.[40] Due to its listing in the California Register of Historical Resources and status as a City Landmark, the Shellmound is a "historical resource" as defined in the CEQA Guidelines (Section 15064.5(a)).

CA-ALA-390. This cultural resource consists of a precontact archaeological site. Originally recorded in 1977 by archaeologist Peter Banks, the site occupies several city blocks south of University Avenue and west of Fifth Street. Banks described CA-ALA-390 as "A partially destroyed occupation site with an approximately 100 m x 250 m area of well-developed midden and a more extensive area with a sparse trace of shell midden."[41]

Cultural Resource Field Surveys. Cultural resource surveys were conducted to identify architectural resources and archaeological deposits that qualify as historical resources under CEQA. Architectural historian Mark Hulbert conducted a field survey to record and evaluate buildings at the Project site that are 50 years of age or older.[42] Archaeologists with LSA and Archeo-Tec conducted surveys to

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38 Sonoma State University. 1949. Anthropological Studies Center. Archaeological Site Record for Site Trinomial CA-ALA-307.

39 Ibid.

40 Berkeley Landmarks Preservation Commission. 2000. *Notice of Decision – February 7, 2000*. Meeting notes within property file for 701 University Avenue on file at Berkeley Architectural Heritage Association, Berkeley, California.

41 Sonoma State University. 1977. Department of Anthropology. Archaeological Site Survey Record for Site CA-ALA-390. August 20.

42 Preservation Architecture. 2009. *2222 Third Street, 91 Bolivar Drive, and 600 Addison Way, Berkeley, CA, Historic Architectural Evaluation*.

identify surface evidence of archaeological deposits at the Project site.[43] The results of these surveys are described below.

Architectural Survey and Evaluation. The Project site contains two built-environment resources over 50 years of age: five buildings at 2222 Third Street associated with the circa 1920 John Lucas Paint and Varnish Works; and a single-story office and laboratory building at 91 Bolivar Drive constructed circa 1966, and modified in the 1970s and 1988.

The buildings at 2222 Third Street are associated with the early 20th-century industrial development of West Berkeley, an important historical context. Alterations to buildings associated with this former paint and varnish factory, however, have diminished the integrity of *setting*, *feeling*, design, and *association* of this cultural resource. Collectively, these alterations no longer enable the buildings to convey their association with the John Lucas Paint and Varnish Works. The buildings at 2222 Third Street are not historical resources for purposes of CEQA, as these have not: (1) been listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR); (2) been listed in a local register of historical resources as defined by PRC Section 5020.1(k); (3) been identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (4) been determined to be a historical resource by the City of Berkeley (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)). Therefore, the proposed Project would not result in a substantial adverse change in the significance of a historical resource with respect to the demolition at 2222 Third Street, and this demolition would not impact a historical resource.

The building at 91 Bolivar Drive was constructed circa 1968, with additions added in the early 1970s and in 1988. The building reflects the style and method of construction of other late-20th century office buildings in Berkeley.[44] It does not possess any distinct or significant characteristics of the type or style of construction of the late-20th century. The building is not a historical resource for purposes of CEQA, as it has not: (1) been listed in, or determined eligible for listing, in the CRHR; (2) been listed in a local register of historical resources as defined by PRC Section 5020.1(k); (3) been identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (4) been determined to be a historical resource by the City of Berkeley (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)). Therefore, the proposed Project would not result in a substantial adverse change in the significance of a historical resource with respect to the demolition at 91 Bolivar Drive, and this demolition would not impact a historical resource.

Archaeological Surveys. On October 26, 2017, a Registered Professional Archaeologist with LSA conducted a pedestrian survey of the Project site. No exposed native soil was observed at the Project site, which has been subjected to mass grading and development. More than 95 percent of the ground surface consisted of fill soils underlying buildings and paved parking lots.

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43 Archeo-Tec. 2020a. *Cultural Resources Evaluation and Testing Report for the Berkeley Aquatic Park Campus/600 Addison Street Project, Alameda County, California*.

44 Preservation Architecture. 2009, op. cit.

No archaeological cultural resources were identified during the field survey. The southern half of the Project site is situated on building pads approximately 12 to 20 feet above the street grade of Bolivar Drive. The north half of the Project site is largely obscured by three large buildings and associated parking lots. These surfaces were also on constructed pads that had been graded approximately 3 to 5 feet above both the street grade at Addison Street along the northern perimeter, and the rail line along the eastern perimeter of the Project site.

The Project site was found to be littered with modern roadside trash, especially along the perimeters of the site, which are comprised by active roadways and a rail line. Heavily weathered, saw cut mammal bone (non-human) was observed in planters along the north end of the Project site, along with natural (i.e., non-archaeological) shell fragments and bird bone.

More recently, the Project applicant retained Archeo-Tec to conduct an archaeological evaluation and test excavation of the Project site. The Archeo-Tec study included an archaeological survey, which was conducted on October 8, 2019. The archaeological survey "did not identify any potentially significant prehistoric- or historic-era cultural resources."[45]

Archaeological Excavation. On October 14 and 15, 2019, Archeo-Tec archaeologists completed four manual auger excavations at the Project site to identify the presence or absence of subsurface archaeological deposits. Of the four manual tests initiated, only one was successfully excavated to the planned terminal depth of 12 feet below the ground surface. Two auger excavations had to be abandoned at 2.17 feet and 1.64 feet below the ground surface due to large rock or concrete impasses encountered within the modern fill deposit. The fourth auger excavation was also abandoned due to a rock obstruction at 2.82 feet below the ground surface. None of the auger excavations identified precontact archaeological materials.

Archaeological Monitoring. On October 17 and 18, 2019, Archeo-Tec monitored 19 environmental direct-push borings and several coincident soil vapor tests. The 1-inch boring cores were recovered in 5-foot segments, with full recovery. Fourteen environmental borings and two soil vapor borings reached a depth of 10 feet below the ground surface. The four borings that were placed on the lower tier of the property, below the embankment along the western extent of the parcel and adjacent to Bolivar Drive, were each excavated to a maximum depth of 5 feet. The cores were recovered in plastic boring sleeves, which were opened and examined by both the environmental and archaeological teams.

Except for some brick fragments noted in the uppermost areas of four direct-push borings and one soil vapor test, and some glass in one direct-push boring, no artifacts were encountered. No conclusive archaeological deposits or significant artifacts were identified during the push boring program.

Summary. A historical architectural survey and evaluation of buildings at the Project site did not identify any buildings that qualify as historical resources for purposes of CEQA.

[45] Archeo-Tec. 2020a, op. cit.

Studies were completed to identify the presence of archaeological historical resources—and the potential for such resources—at the Project site. These studies included background research, field survey, manual auger excavations, and monitoring of environmental coring. No archaeological historical resources were identified at the Project site.

The Project site is underlain by a 1.5 to 5.5-foot layer of historic and modern fill. Below the fill, natural alluvial soils and Holocene Bay Mud were identified and are potentially sensitive for archaeological resources. Due to this sensitivity, Archeo-Tec has stated "it would be prudent to carry out a limited and targeted program of pre-construction testing in those key locations slated for deeper subsurface excavation. Important areas include elevator shafts and southern portions of the Building B footprint."[46] Depths of excavation in these areas may reach up to 20 feet below the ground surface. Archeo-Tec has prepared a plan for pre-construction testing of these areas;[47] however, much of the area proposed for additional exploration is located within existing building footprints and it may not be feasible to conduct this testing until these buildings are demolished.

If significant archaeological deposits were unearthed during Project site preparation and construction activities, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). The Project would have a potentially significant impact on archaeological historical resources unless mitigation described under Mitigation Measures CUL-1a through CUL-1d are incorporated. Due to the sensitivity of the area for the presence of archaeological resources, these measures replace and supplement the City's related COAs for accidental discovery of archeological and tribal cultural resources. With implementation of these measures, impacts to historic archaeological resources would be less than significant.

Mitigation Measure CUL-1a: Prior to issuance of any building permit involving site grading or ground disturbance, the Project applicant shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology to conduct the pre-construction archaeological testing program recommended in the Cultural Resources Evaluation and Testing Report prepared by Archeo-Tec. The Project applicant shall submit the pre-construction archaeological testing program to the City's Planning Department for review and approval.

Mitigation Measure CUL-1b: Prior to issuance if a building permit involving any potential ground disturbing activity, all construction contractor(s) responsible for overseeing and operating ground-disturbing mechanical equipment (e.g., onsite construction managers and backhoe operators) shall be required to participate in cultural resources awareness and sensitivity training. The purpose of this training is to (1) educate

[46] Archeo-Tec. 2020a, op. cit.

[47] Archeo-Tec. 2020b. Proposal to Conduct a Systematic Program of Subsurface Exploratory Archeological Testing within Selected Portions of the 600 Addison Street Project, City of Berkeley, Alameda County.

construction personnel regarding the types of archaeological deposits that may be encountered during construction; (2) inform construction personnel of the appropriate procedures that must be used if archaeological deposits or human remains are encountered, including work stoppage, agency notification, and archaeological exposure and removal of significant deposits; and (3) provide cultural sensitivity training to construction personnel to ensure respectful and appropriate behaviors in the vicinity of archaeological deposits and human remains, consistent with the direction of the onsite Ohlone tribal group as identified below.

A qualified archaeologist that meets or exceeds the Secretary of the Interior's Professional Qualifications Standards in archaeology and an Ohlone tribal representative eligible to consult with the City, pursuant to AB 52, shall conduct the training. The Project applicant shall maintain a record of all construction personnel that have received this training and provide the record to the City. These records shall be submitted to the City prior to issuance of a building permit involving any ground disturbing activity and shall be maintained by the applicant throughout the duration of the construction period. A final record shall be submitted to the City prior to issuance of a certificate of occupancy.

Mitigation Measure CUL-1c: The applicant shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archeology and an Ohlone Native American tribal representative to monitor Project ground disturbance below fill deposits. The monitoring archaeologist can adjust monitoring frequency based on in-field observations of the potential for encountering archaeological deposits. Archaeological and tribal monitoring shall continue until the archaeologist and tribal representative determine that there is a low potential for impacts to intact subsurface archaeological deposits or other deposits of tribal concern.

Should an archaeological deposit be encountered during Project subsurface construction, all ground-disturbing activities within 25 feet shall be redirected and the onsite archaeologist and Ohlone monitor shall assess the deposit, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. The City shall be notified by the applicant team within 24 hours of the encounter. If found to be significant by the onsite archaeologist (i.e., eligible for listing in the California Register of Historical Resources), the applicant shall be responsible for funding and implementing appropriate mitigation measures.

Per CEQA Guidelines Section 15126.4(b)(3), avoidance of an archaeological historical resource identified during Project construction is the preferred mitigation. The onsite archaeologist, Ohlone monitor, Project applicant, and construction contractor shall consult to determine if preservation in place of the archaeological deposit is feasible. If avoidance is feasible, the archaeologist shall document the resource in situ and shall ensure that additional impacts to the deposit from the Project are avoided. If Project development cannot avoid a resource identified during construction, other mitigation measures shall be implemented. These mitigation measures may include, but would not be limited to, recording the archaeological deposit, data recovery and analysis, and public outreach. Upon completion of the selected mitigations, a report documenting methods, findings, and recommendations shall be prepared and submitted to the City for review.

Mitigation Measure CUL-1d: Should an archaeological deposit be encountered during Project construction activities while an archaeological or tribal monitor is not on site, all ground-disturbing activities within 50 feet shall be redirected and a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology and a tribal representative contacted to assess the situation, determine if the deposit qualifies as a historical resource, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. If the deposit is found to be significant (i.e., eligible for listing in the California Register of Historical Resources), the Project applicant shall be responsible for funding and implementing appropriate mitigation measures.

b. Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? ***(Less-Than-Significant with Mitigation Incorporated)***

According to the CEQA Guidelines, "When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource" (CEQA Guidelines Section 15064.5 (c)(1)). Those archaeological sites that do not qualify as historical resources shall be assessed by to determine if these qualify as "unique archaeological resources" (California PRC Section 21083.2). Archaeological cultural resources identified during Project construction shall be treated by the City—in consultation with a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology—in accordance with Mitigation Measures CUL-3 and CUL-4 as identified above in Section 3.5.a. With implementation of these measures, impacts to archaeological resources would be less than significant.

c. Would the Project disturb any humans remains, including those interred outside of formal cemeteries? ***(Less-Than-Significant with Mitigation Incorporated)***

No human remains have been identified at the Project site. However, numerous Native American burials and disarticulated skeletal remains have been identified to the north of the Project site.[48]

Holocene-age landforms, which have a potential to contain Native American archaeological deposits, including human burials, underlie Project site fill. Any human remains encountered during Project-related ground-disturbing activities would be treated in accordance with California Health and Safety Code Section 7050.5 and Public Resources Code 5097.98, as described below.

Section 7050.5 of the California Health and Safety Code states that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendent (MLD) to inspect the site, and the MLD shall recommend the proper treatment of the remains and associated grave goods.

Section 5097.98 of the Public Resources Code states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Section 7050.5, shall immediately notify those persons (i.e., the MLD) it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site. Additionally, development projects that require a use permit are required to comply with the following COA that addresses these potential impacts:

> ***COA: Human Remains.*** (*Ongoing throughout demolition, grading, and/or construction*). In the event that human skeletal remains are uncovered at the Project site during ground-disturbing activities, all work shall immediately halt and the Alameda County Coroner shall be contacted to evaluate the remains, and following the procedures and protocols pursuant to Section 15064.5 (e)(1) of the CEQA Guidelines. If the County Coroner determines that the remains are Native American, the City shall contact the California Native American Heritage Commission (NAHC), pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, and all excavation and site preparation activities shall cease within a 50-foot radius of the find until appropriate arrangements are made. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume

[48] Wallace, William J., and Donald W. Lathrap. 1975. *West Berkeley (CA-Ala-307): A Culturally Stratified Shellmound on the East Shore of San Francisco Bay*. Contributions of the Archaeological Research Facility, University of California, Berkeley no 29. Archaeological Research Facility, Department of Anthropology, University of California, Berkeley.

construction activities. Monitoring, data recovery, determination of significance and avoidance measures (if applicable) shall be completed expeditiously.

Implementation of the appropriate procedures required under State law and by COA: Human Remains for the treatment of Native American remains and implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 would ensure that descendant communities have significant input in the treatment and final disposition of human remains, if encountered at the Project site. With these regulations and Project conditions in place, the Project would have a less-than-significant impact on human remains, including those interred outside of formal cemeteries.

3.6 ENERGY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in a 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?	☐	☐	☒	☐

a. Would the Project 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 Impact)***

Construction Energy Use. The anticipated construction schedule assumes that the proposed Project would be built over 12 to 24 months. The proposed Project would require demolition, grading, site preparation, and building activities during construction.

Construction of the proposed Project would require energy for the manufacture and transportation of building materials, preparation of the site for grading activities, and building construction. Petroleum fuels (e.g., diesel and gasoline) would be the primary sources of energy for these activities. In order to increase energy efficiency on the site during Project construction, the Project would restrict equipment idling times to 5 minutes or less and would require construction workers to shut off idle equipment, as required by COA: Public Works – Implement BAAQMD-Recommended Measures During Construction. Energy usage on the Project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources.

Operational Energy Use. Typically, the consumption of energy during the operation of a project is associated with fuel used for vehicle trips and natural gas and energy use. However, the proposed Project would not increase the demand for natural gas as the proposed buildings would be all electric consistent with the City's 2019 Prohibition on Natural Gas Ordinance.

In 2018, Senate Bill (SB) 100 was passed, which has committed California to generate all electricity from carbon free sources by 2045. The proposed Project's all-electric heat pump design considers the context of the changing electricity grid and is designed to displace natural gas emissions over the lifetime of the building. The all-electric building design would result in decreasing emissions as California's grid becomes cleaner, and once the grid consists of 100 percent renewable generation sources, the building would have zero operational emissions associated with electricity usage.

In addition to the all-electric design, the Project would rely heavily on creative heat recovery sources within the building as an energy reduction strategy, efficient lighting and incorporation of daylighting strategies (i.e., the building massing, envelope, and exterior shading system would be optimized to reduce building energy and improve access to daylight).

While utilizing an all-electric building design would result in significant emissions savings, the Project design would also incorporate PV systems to provide clean, renewable electricity directly onsite, in compliance with the Berkeley Energy Code (BMC Chapter 19.36). The base design would incorporate these panels such that the core building operation would consume net zero site energy at the onset of Project operation. Additional space for PV, to be optionally purchased by the building tenant(s), would be made available for zero energy endeavors.

With all-electric building construction, implementation of these energy-saving measures, and compliance with the building code requirements, operation of the proposed Project would not result in an increase in the consumption of electricity or natural gas derived from non-renewable resources.

In addition, the proposed Project would result in energy usage associated with gasoline for Project-related trips. Based on CalEEMod, the proposed Project would result in approximately 6,515,588 VMT per year.[49] The average fuel economy for light-duty vehicles (autos, pickups, vans, and SUVs) in the United States has steadily increased from about 14.9 miles per gallon (mpg) in 1980 to 22.0 mpg in 2015.[50] Therefore, using the United States Environmental Protection Agency (USEPA) fuel economy estimates for 2015, the proposed Project would result in the consumption of approximately 296,163 gallons of gasoline per year. According to the most recent data available, total gasoline consumption in California was 365,610 thousand barrels or 1,847.8 trillion British Thermal Units (BTU) in 2018.[51] Of the total gasoline consumption, 349,108 thousand barrels or 1,764.4 trillion BTU were consumed for transportation.[52] Based on fuel consumption obtained from CARB's model that estimates the official emissions inventories of on-road mobile sources in the State (EMFAC2017), vehicle trips in Alameda County in 2020 consumed 559,515,714 gallons of gasoline. Therefore, operation of the proposed project would increase the annual electricity consumption in Alameda County by approximately 0.05 percent. As such, gasoline demand generated by vehicle trips associated with the proposed Project would be a minimal fraction of gasoline and diesel fuel consumption in Alameda County.

As discussed in Section 3.3, Air Quality, and Section 3.17, Transportation, the proposed Project would result in the construction of R&D and Office uses on the Project site, which would serve as an employment center on an infill site that would locate employees near existing commercial, residential, and recreational uses. The Project site is located adjacent to I-80 and the proposed Project would not provide a reduced number of vehicle parking spaces compared to the City's parking requirements; both of these conditions could contribute to employees that are located

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49 The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, this analysis is conservative and likely overestimates the Project's VMT and resulting mobile source emissions.

50 U.S. Department of Transportation. 2017. Bureau of Transportation Statistics. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Website: www.bts.gov/archive/publications/national _transportation_statistics/table_04_23 (accessed January 11, 2021).

51 A British Thermal Unit is defined as the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

52 U.S. Energy Information Administration. 2020. California State Profile and Energy Estimates. Table F3: Motor gasoline consumption, price, and expenditure estimates, 2017. Website: eia.gov/state/seds/ data.php?incfile=/state/seds/sep_fuel/html/fuel_mg.html&sid=CA (accessed January 2021).

outside of the City to prefer driving to the site due to ease of access and parking opportunities. However, the proposed Project would also locate employees near public transportation facilities, including rail, bus, and bicycle facilities, and is within walking distance to goods and services. The proposed Project would provide incentives to reduce the demand for travel by single occupancy vehicles, including bicycle parking, shower facilities, and an extensive TDM Plan.[53] As such, the proposed Project would facilitate use of alternative modes of transportation, which would promote a reduction of vehicle trips and VMT, which would to reduce the overall transportation energy demand. Given the location of the Project and proposed improvements, implementation of the Project would not result in a substantial increase in electricity, natural gas, or transportation-related energy, such that it would result in a wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.

b. Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? ***(Less-Than-Significant Impact)***

In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CEC) to develop an integrated energy policy report for electricity, natural gas, and transportation fuels every two years. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the lowest cost to the environment and energy sources. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission vehicles and associated infrastructure needs, and encouraging urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The most recently adopted CEC energy report is the 2019 Integrated Energy Policy Report. The 2019 Integrated Energy Policy Report provides the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The 2019 Integrated Energy Policy Report covers a broad range of topics, including implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.

As indicated above, energy usage on the Project site during construction would be temporary in nature. In addition, while utilizing an all-electric building design would result in significant emissions savings, the Project design would also incorporate PV systems to provide renewable energy onsite, such that the core building operation would consume net zero site energy at the onset of the building's operation. As such, operation of the proposed Project would not result in an increase in the consumption of electricity or natural gas derived from non-renewable resources. Therefore, because the Project's total impact to regional energy supplies would be minor, the proposed Project would not conflict with California's energy conservation plans as described in the CEC's 2019

[53] Fehr & Peers. 2021, op. cit.

Integrated Energy Policy Report. In addition, as discussed in Section 3.8, Greenhouse Gas Emissions, the proposed Project would be consistent the City's CAP, commitment to carbon neutrality by 2045, and the Climate Emergency declaration. Thus, as shown above, the Project would avoid or reduce the inefficient, wasteful, and unnecessary consumption of energy and the proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be less than significant.

3.7 GEOLOGY AND SOILS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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 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?	☐	☐	☒	☐
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, as defined in Table 18-1-B of the Uniform Building Code (1994), 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 geologic feature?	☐	☐	☒	☐

The information presented in this section is based on data and findings provided in the Preliminary Geotechnical Investigation[54] and supplemental Geotechnical Report Review[55] prepared for the Project site, unless otherwise noted.

The California Geological Survey (CGS) has mapped Seismic Hazard Zones that delineate areas susceptible to liquefactions that require additional investigation to determine the extent and magnitude of potential ground failure. According to the CGS, the Project site is located within a Seismic Hazard Zone for liquefaction.[56] The Seismic Hazards Mapping Act requires that site-specific geotechnical investigations be conducted that identify the hazard and provide recommendations prior to permit approval for most developments designed for human occupancy within the Zones of Required Investigation. In addition, as specified under Policy S-14 in the Disaster Preparedness and

[54] Cornerstone Earth Group. 2019a. *Preliminary Geotechnical Investigation, Berkeley Innovation & Technology Park, 600 Addison Street, 91 Bolivar Drive, 2222 Third Street, Berkeley, California*. September 6.

[55] Cornerstone Earth Group. 2020. *Geotechnical Report Review, Berkeley Commons, 600 Addison Street, Berkeley, California.* November 17.

[56] California Geological Survey. 2003. *Seismic Hazard Zones; Oakland West Quadrangle*. February 14.

Safety Element of the City of Berkeley General Plan,[57] soil investigation and/or geotechnical reports in conjunction with development and/or redevelopment would be required on sites within designated hazard zones such as areas with high potential for soil erosion, landslide, fault rupture, liquefaction and other soil-related constraints.

Furthermore, the City of Berkeley has adopted the 2019 California Building Code (Title 24, California Code of Regulations), with local amendments, which provides for stringent construction requirements on projects in areas of high seismic risk. The design and construction is required to conform with, or exceed, current best standards for earthquake resistant construction in accordance with the 2019 California Building Code (or more recent applicable code) and with the generally accepted standards of geotechnical practice for seismic design in Northern California.

a. Would the Project expose people or structures to 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 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? iv. Landslides? ***(Less-Than-Significant Impact)***

The California Supreme Court concluded in its *CBIA v. BAAQMD* decision that "CEQA generally does not require an analysis of how existing environmental conditions will affect a project's future users or residents." With this ruling, CEQA no longer considers the impact of the environment on a project (such as the impact of existing seismic hazards on new project occupants) to be an environmental impact, unless the project could exacerbate an existing environmental hazard. The proposed Project would not change existing seismic hazards and, therefore, would not exacerbate existing hazards related to surface fault rupture and seismic ground shaking. As such, the following discussions of seismic hazards are provided for informational purposes only.

Fault Rupture. Surface fault rupture occurs when the ground surface is broken due to fault movement during an earthquake. Fault rupture is generally expected to occur along active fault traces. Areas susceptible to fault rupture are delineated by the CGS Alquist-Priolo Earthquake Fault Zones and require specific geological investigations prior to development to reduce the threat to public health and safety and to minimize the loss of life and property posed by earthquake-induced ground failure. The Project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone.[58] Therefore, the proposed Project would not adversely affect people and structures related to fault rupture.

Ground Shaking. Seismic ground shaking generally refers to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the

[57] Berkeley, City of. 2001. *City of Berkeley General Plan*.
[58] California Department of Conservation. 1982. Special Studies Zones, Oakland West. January 1.

perceptible effects of a seismic event at a given point. The Modified Mercalli Intensity scale is the most commonly used scale to measure the subjective effects of earthquake intensity in values ranging from I to XII. Intensity can also be quantitatively measured using strong motion seismographs that record the peak ground acceleration (PGA) in terms of the acceleration force of gravity (g). The Preliminary Geotechnical Investigation prepared for the Project indicates that the Project site would likely be subjected to a moderate to severe degree of groundshaking from earthquakes generated on the Hayward Fault or other active faults in the Bay Area. Modeling indicates a peak ground acceleration of 0.72, which would correspond to violent ground shaking (IX on the Modified Mercalli Scale[59]) and would be expected to cause substantial damage to, but not complete destruction of, well-designed buildings.[60]

The risk of ground shaking impacts is reduced through adherence to the design and materials standards set forth in the California Building Code and recommendations in a site-specific geotechnical investigation and/or geotechnical report (which is required by the Seismic Hazards Mapping Act and City of Berkeley General Plan). With the adherence of the existing regulations described above, ground shaking at the Project site would not adversely affect people or structures.

It is acknowledged that seismic hazards cannot be completely eliminated, even with site-specific geotechnical investigation/design and advanced building practices. However, the seismic design standards of the California Building Code are intended to prevent catastrophic building failure in the most severe earthquakes currently anticipated. Therefore, compliance with the existing building codes, described above, would ensure that people or structures would not be adversely affected by earthquake-induced ground shaking.

Seismic-Related Ground Failure and Liquefaction. The potential for different types of ground failure to occur during a seismic event is discussed below.

> ***Liquefaction.*** Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. During ground shaking, these soils lose strength and acquire a "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (silt and clay) may also liquefy. The Project site is located within a State-designated Liquefaction Hazard zone.
>
> Based on a preliminary investigation, several layers of soils beneath the Project site could experience liquefaction triggering post-liquefaction total settlement at the ground surface ranging from 1 to 2.5 inches. Final grading, foundation, and building plans must be designed in accordance with the California Building Code and per the recommendations identified in a site-specific geotechnical investigation and/or geotechnical report. These designs would include measures that would address, as necessary, the potential for differential settlement related to

59 Richter, C.F. 1958. *Elementary Seismology*. W.H. Freeman, San Francisco.

60 United States Geological Survey. The Modified Mercalli Intensity Scale. Website: www.usgs.gov/natural-hazards/earthquake-hazards/science/modified-mercalli-intensity-scale?qt-science_center_objects=0#qt-science_center_objects (accessed July 2020).

liquefaction. Therefore, compliance with the existing regulations would ensure that people or structures would not be adversely affected by liquefaction associated with ground shaking.

Lateral Spreading. Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial soils are transported downslope or in the direction of an open area by earthquake and gravitational forces. If site soils were subject to liquefaction, lateral spreading could occur at the Project site because of the relatively steep slope at the west boundary of the Project site. The Preliminary Geotechnical Investigation suggests over-excavation and reconstruction to ensure this slope would not be subject to lateral spreading. As stated above, final grading, foundation, and building plans must be designed in accordance with the California Building Code and per the recommendations identified in a site-specific geotechnical investigation and/or geotechnical report. These designs would include measures that would address, as necessary, the potential for differential settlement related to liquefaction. Therefore, compliance with the existing regulations would ensure that people or structures would not be adversely affected by lateral spreading associated with ground shaking.

Surface Settlement. Settlement can occur when non-saturated, cohesionless soil is densified by earthquake vibrations. The Preliminary Geotechnical Investigation suggested shallow footings or a rigid mat foundation provided that they are underlain by ground improvement elements designed to reduce total and differential settlement to tolerable levels. As noted above, the total settlement of the proposed foundations is estimated to be between 1 to 2.5 inches. As discussed above and recommended in the Preliminary Geotechnical Investigation, a design-level geotechnical investigation and/or geotechnical report would be required for the Project and would include measures that would address the potential for surface settlement. Compliance with the existing regulations would ensure that people or structures would not be adversely affected by surface settlement associated with ground shaking.

Landslides. Seismically-induced landslides occur as the rapid movement of large masses of soil on unstable slopes during an earthquake. The Seismic Hazard Zones mapped by CGS delineate areas susceptible to seismically-induced landslides that require additional investigation to determine the extent and magnitude of potential ground failure. According to CGS, the Project site is not located within a Seismic Hazard Zone for seismically-induced landslides.[61] Therefore, people or structures would not be adversely affected by seismically-induced landslides.

b. Would the Project result in substantial soil erosion or the loss of topsoil? ***(Less-Than-Significant Impact)***

Soil erosion, which is discussed in detail in Section 3.10, Hydrology and Water Quality, could occur during Project grading and construction. As described in Section 3.10, compliance with the Construction General Permit including the preparation and implementation of Stormwater Pollution Prevention Plan, would ensure that potential impacts related to erosion of topsoil would be less than significant.

[61] California Geological Survey. 2003, op. cit.

c. Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? ***(Less-Than-Significant Impact)***

As discussed above in Section 3.7.b, the Project site could be subject to liquefaction, lateral spreading, and settlement, particularly during ground shaking associated with a seismic event. However, the Project's required compliance with existing regulations, including the California Building Code (CBC), would reduce the potential risks to people and structures as a result of these unstable soil conditions to a less-than-significant level. Potential impacts associated with other unstable soil conditions, including subsidence and consolidation, are discussed below and would also be less than significant.

Subsidence. Subsidence or collapse can result from the removal of subsurface water resulting in either catastrophic or gradual depression of the surface elevation of the Project site. The only removal of subsurface water that may occur as part of the Project is dewatering of shallow excavations during construction. The dewatering of shallow excavations does not cause significant ground subsidence or collapse. Therefore, this potential impact is less than significant.

Consolidation. Consolidation of soils is a process by which the soil volume decreases as water is expelled from saturated soils under static loads. As the water moves out from the pore space of the soil, the solid particles realign into a denser configuration that results in settlement. Consolidation typically occurs as a result of new buildings or fill materials being placed over compressible soils. The Preliminary Geotechnical Investigation indicates that undocumented fills ranging from about 3 to 21 feet thick blanket the Project site. These areas of undocumented fill (and other site soils) could be subject to consolidation. Geotechnical recommendations for foundation construction indicated that excavation of existing fill and placement of engineered fill would be required beneath new building foundations and pavements.

Final grading, foundation, and building plans must be designed in accordance with the 2019 California Building Code (or more recent applicable code) and recommended measures identified in the design-level geotechnical investigation and/or geotechnical report. These designs would include excavation of existing fill and placement of engineered fill. Therefore, compliance with the existing regulations would ensure that the potential impacts associated with consolidation would be less than significant.

d. Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? ***(Less-Than-Significant Impact)***

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume. As indicated in the Preliminary Geotechnical Investigation, the Project site is underlain by artificial fill and native alluvial soils, both of which contain varying layers of soft to stiff clay. Because clay could be expansive, the Project site could be susceptible to expansion.

Final grading, foundation, and building plans must be designed in accordance with the California Building Code and recommendations in the design-level geotechnical investigation and/or geotechnical report. These designs would include measures to either: (1) excavate the existing fill materials that are susceptible to expansion and either replace the materials with engineered fill or further evaluate the possible reuse of the materials as engineered fill; or (2) design foundations and other improvements to withstand the shrinking and swelling cycles of the soils without causing significant damage. These measures would be incorporated into the project as conditions of approval. Therefore, compliance with the existing CBC would ensure that the potential impacts associated with expansive soils would be less than significant.

e. Would the Project 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? ***(No Impact)***

The Project site would be served by a wastewater conveyance system maintained by the City. Wastewater from the City's collection system is conveyed to the EBMUD wastewater interceptor system and is treated at the EBMUD wastewater treatment plant. Development of the proposed Project would not involve the use of septic tanks or alternative wastewater disposal systems. Therefore, the proposed Project would have no impact related to septic tanks or alternative waste water disposal systems.

f. Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ***(Less-Than-Significant Impact)***

There are no identified paleontological resources or unique geologic features or sites within, or in the vicinity of, the Project site.[62] However, demolition, site preparation, and construction activities associated with the proposed Project could adversely impact previously unidentified fossils. Such fossils, if present, could be identified during deep excavation. However, development projects that require a use permit are required to comply with the following COA that addresses this potential impact. Implementation of this COA would ensure that this impact would be less than significant.

> ***COA: Paleontological Resources.*** (Ongoing throughout demolition, grading, and/or construction). In the event of an unanticipated discovery of a paleontological resource during construction, excavations within 50 feet of the find shall be temporarily halted or diverted until the discovery is examined by a qualified paleontologist (per Society of Vertebrate Paleontology standards [SVP 1995,1996]). The qualified paleontologist shall document the discovery as needed, evaluate the potential resource, and assess the significance of the find. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the City determines that avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important, and such plan shall be implemented. The plan shall be submitted to the City for review and approval.

[62] Berkeley, City of. 2010a. *West Berkeley Project Draft Environmental Impact Report*. January.

3.8 GREENHOUSE GAS EMISSIONS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would 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?	☐	☐	☒	☐

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF_6).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one

unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

a. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***(Less-Than-Significant Impact)***

This section describes the proposed Project's construction- and operational-related GHG emissions and contribution to global climate change. The BAAQMD has not addressed emission thresholds for construction in their CEQA Guidelines; however, the BAAQMD encourages quantification and disclosure. Thus, construction emissions are discussed in this section.

Construction Activities. Construction activities associated with the proposed Project would produce combustion emissions from various sources. During construction, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from onsite construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction of the proposed Project would generate approximately 1,650 metric tons of CO_2e. Implementation of COA: Public Works – Implement BAAQMD-Recommended Measures During Construction, as identified in Section 3.3.b, Air Quality, would reduce GHG emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment. Therefore, Project construction impacts associated with GHG emissions would be less than significant.

Operational Emissions. Long-term GHG emissions are typically generated from mobile sources (e.g., cars, trucks and buses), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions typically include project-generated vehicle trips to and from a project.

Following guidance from the BAAQMD, GHG emissions were estimated using CalEEMod.[63] Table 3.F shows the calculated GHG emissions for the proposed Project. The proposed Project would generate minimal area-source emissions associated with activities such as landscaping and maintenance on the Project site.

The proposed Project would incorporate an all-electric building design, which would result in decreasing emissions as California's grid becomes cleaner, and once the grid consists of 100 percent renewable generation sources, the building would have zero operational emissions associated with

[63] The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, this analysis is conservative and likely overestimates the Project's operational emissions.

electricity usage. In addition to the all-electric design, the Project would rely heavily on creative heat recovery sources within the building as an energy reduction strategy, efficient lighting and incorporation of daylighting strategies (i.e., the building massing, envelope, and exterior shading system would be optimized to reduce building energy and improve access to daylight). While utilizing an all-electric building design would result in significant emissions savings, the Project design also incorporates PV systems to provide clean, renewable electricity directly onsite. The base design incorporates these panels such that the core building operation would consume net zero site energy at the onset of the building's operation. Additional space for PV systems to be optionally purchased by building tenant(s) would be made available for zero energy endeavors. In addition, the proposed Project would exceed 2019 Title 24 standards through all-electric building construction and would be designed to achieve LEED Gold equivalence. Therefore, the proposed Project would generate minimal energy source emissions.

Trip generation rates for the Project were based on the Project's Transportation Impact Analysis,[64] which estimates the proposed Project would generate approximately 3,840 net new trips per day. The proposed Project would also generate waste source emissions associated with energy generated by land filling and other methods of disposal related to transporting and managing Project generated waste. In addition, the proposed Project would generate water source emissions associated water supply and conveyance, water treatment, water distribution, and wastewater treatment.

As shown in Table 3.F, motor vehicle emissions are the largest source of GHG emissions for the Project at approximately 70 percent of the total. Energy use is the next largest category at 18 percent. Water use is about 12 percent of the total emissions. Additional calculation details are included in Appendix A.

According to the BAAQMD, a project would result in a less-than-significant GHG impact if it would:

- Result in operational-related greenhouse gas emissions of less than 1,100 metric tons of CO_2e a year; or
- Result in operational-related greenhouse gas emissions of less than 4.6 metric tons of CO_2e per service population (residents plus employees).

[64] Fehr & Peers. 2021, op. cit. The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project, which would have resulted in 4,350 net new trips per day; therefore, this analysis is conservative and overestimates the number of net new daily vehicle trips.

Table 3.F: GHG Emissions (Metric Tons Per Year)

Emissions Source	Operational Emissions				
	CO_2	CH_4	N_2O	CO_2e	Percent of Total
Area Source Emissions	<0.1	<0.1	0.0	<0.1	0
Energy Source Emissions	638.0	<0.1	<0.1	641.8	18
Mobile Source Emissions	2,592.3	0.1	0.0	2,594.8	70
Waste Source Emissions	2.0	0.1	0.0	5.0	0
Water Source Emissions	230.8	6.7	0.2	446.3	12
Total Annual Emissions				**3,687.9**	**100**
BAAQMD Threshold				**1,100**	-
Exceed?				**Yes**	-
Service Population Emissions				**2.3**	-
BAAQMD Threshold				**4.6**	-
Exceed?				**No**	-

Source: LSA (May 2020).
Note: The CalEEMod modeling was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project; therefore, these emissions estimates likely overestimate the Project's operational emissions.

Model results indicate the Project would generate approximately 3,687.9 metric tons of CO_2e, which would exceed the BAAQMD significance criteria of 1,100 metric tons CO_2e per year. However, the proposed Project is anticipated to have approximately 1,600 employees. The Project would not include residences and would not increase population. Therefore, the total service population (employees plus population) would be 1,600. The Project would result in per service population emissions of 2.3 metric tons CO_2e, which is well below the BAAQMD criteria of 4.6 metric tons CO_2e per service population. Therefore, the Project would not generate greenhouse gas emissions that would have a significant effect on the environment and this impact would be less than significant.

b. Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***(Less-Than-Significant Impact)***

The City of Berkeley Climate Action Plan (CAP), adopted in 2009, outlines actions to implement in order to achieve a greenhouse gas reduction target of 80 percent below 2000 emission levels by the year 2050, consistent with the State's direction to local governments. In 2018, then-Governor Brown committed California to carbon neutrality by 2045, the Berkeley City Council resolved to become a "Fossil Fuel Free City," and the Council declared a Climate Emergency, all steps to signal the urgency of these ambitious goals and the need to act on climate threats in an equitable manner. The CAP actions and associated goals and policies, as well as the more recent Berkeley climate actions, relate to sustainable transportation and land use, buildings energy use, waste reduction and recycling, community outreach and empowerment, including equity, and preparing for climate change.

As further discussed in Section 3.3, Air Quality, and Section 3.17, Transportation, given the location of the Project and proposed improvements, including implementation of the proposed TDM Plan[65] and provision of EV charging infrastructure consistent with the requirements of BMC Section 19.37,

[65] Fehr & Peers. 2021, op. cit.

the proposed Project would facilitate transit use and use of alternative and cleaner modes of transportation.

Therefore, the proposed Project would not conflict with sustainable transportation and land use measures identified in the CAP.

In addition, the proposed Project would exceed 2019 Title 24 standards through all-electric building construction and would be designed to achieve LEED Gold equivalence. The proposed Project would also incorporate PV systems to provide renewable energy onsite such that the core building operation would consume net zero site energy at the onset of the building's operation. In addition, the proposed landscape, hardscape, and roofscape material palette would be designed to mitigate the urban heat island effect of development. The proposed Project would also include native, drought-tolerant plantings, bioretention zones, low-water use plant selections, ultra-low flow indoor water fixtures, and an all-electric mechanical conditioning system. An advanced water and energy metering systems would also be provided to allow tenants to monitor, diagnose, and reduce use of these resources. The proposed Project would be consistent with the CalRecycle Waste Diversion and Recycling Mandate which would reduce solid waste production by 75 percent and the Berkeley Green Code which also requires 100 percent of concrete, asphalt, and land clearing debris to be reused and recycled. Therefore, the proposed Project would not conflict with any of the building energy use or waste and recycling measures identified in the CAP. In addition, the following COAs would require implementation of a Construction Waste Management Plan and compliance with the Berkeley Green Code.

> ***COA: Construction and Demolition Diversion.*** Applicant shall submit a Construction Waste Management Plan that meets the requirements of BMC Chapter 19.37 including 100 percent diversion of asphalt, concrete, excavated soil and land-clearing debris and a minimum of 65 percent diversion of other nonhazardous construction and demolition waste.

> ***COA: Low-Carbon Concrete.*** The Project shall verify compliance with the Berkeley Green Code (BMC Chapter 19.37) including use of concrete mix design with a cement reduction of at least 25 percent.

Given the above, the proposed Project would be consistent the City's CAP, commitment to carbon neutrality by 2045, and the Climate Emergency declaration and would implement measures designed to reduce GHG emissions. In addition, the proposed Project would not generate emissions that would exceed the Project-level significance criteria established by the BAAQMD. The proposed Project would be subject to all applicable permit and planning requirements in place or adopted by the City. Therefore, the proposed Project would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This impact would be less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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 it 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 2 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?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

a. Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? ***(Less-Than-Significant Impact)***

The proposed Project would result in the demolition of the existing structures and surface pavements and parking lots on the Project site, and redevelopment of the site with new structures that would be used for R&D and Office uses.

Hazardous materials (e.g., oil, grease, fuels, paint) would be transported and used onsite for proposed construction activities. The operational phase of the proposed Project may also include storage and use of hazardous materials (e.g., laboratory chemicals and wastes) on the Project site. In addition, equipment installed at the Project site, such as hydraulic elevator systems and backup generators, may involve the use and storage of hydraulic fluid, fuels, and other hazardous materials. The routine transport, use, or disposal of these hazardous materials could pose a potential hazard to construction workers and future employees working at the Project site as they would be handling the hazardous materials and could therefore be exposed through inhalation of vapors, direct contact with skin, or accidental ingestion. The routine transport, use, or disposal of these hazardous materials would not pose a significant hazard to the public or environment unless the hazardous

materials were accidentally spilled or released into the environment, as discussed in Section 3.9.b, below.

All future uses on the site would be subject to existing regulatory programs for hazardous materials. A Hazardous Materials Business Plan (HMBP), in compliance with BMC Section 15.12.040, must be submitted to the Berkeley Toxics Management Division (TMD) within 30 days if onsite hazardous materials exceed in aggregate any of the following: 55 gallons for liquids; 500 pounds for solids; or 200 cubic feet of gases at standard temperature and pressure. This requirement is outlined in COA: Toxics(D), below.

COA: Toxics. The applicant shall contact the Toxics Management Division (TMD) at 1947 Center Street or (510) 981-7470 to determine which of the following documents are required and timing for their submittal:

a. Environmental Site Assessments:

1) Phase I & Phase II Environmental Site Assessments (latest ASTM 1527-13). A recent Phase I ESA (less than 6 months old*) shall be submitted to TMD for developments for:

- All new commercial, industrial and mixed use developments and all large improvement projects.
- All new residential buildings with 5 or more dwelling units located in the Environmental Management Area (or EMA).
- EMA is available online at: http://www.cityofberkeley.info/uploadedFiles/IT/Level_3_-_General/ema.pdf

2) Phase II ESA is required to evaluate Recognized Environmental Conditions (REC) identified in the Phase I or other RECs identified by TMD staff. The TMD may require a third-party toxicologist to review human or ecological health risks that may be identified. The applicant may apply to the appropriate state, regional or county cleanup agency to evaluate the risks.

3) If the Phase I is over 6 months old, it will require a new site reconnaissance and interviews. If the facility was subject to regulation under Title 15 of the Berkeley Municipal Code since the last Phase I was conducted, a new records review must be performed.

b. Soil and Groundwater Management Plan:

1) A Soil and Groundwater Management Plan (SGMP) shall be submitted to TMD for all non-residential projects, and residential or mixed-use projects with five or more dwelling units, that: (1) are in the Environmental Management Area (EMA) and (2) propose any excavations deeper than 5 feet below grade. The SGMP shall be site specific and identify procedures for soil and groundwater management including

identification of pollutants and disposal methods. The SGMP will identify permits required and comply with all applicable local, state and regional requirements.

2) The SGMP shall require notification to TMD of any hazardous materials found in soils and groundwater during development. The SGMP will provide guidance on managing odors during excavation. The SGMP will provide the name and phone number of the individual responsible for implementing the SGMP and post the name and phone number for the person responding to community questions and complaints.

3) TMD may impose additional conditions as deemed necessary. All requirements of the approved SGMP shall be deemed conditions of approval of this Use Permit.

c. Building Materials Survey:

1) Prior to approving any permit for partial or complete demolition and renovation activities involving the removal of 20 square or lineal feet of interior or exterior walls, a building materials survey shall be conducted by a qualified professional. The survey shall include, but not be limited to, identification of any lead-based paint, asbestos, polychlorinated biphenyl (PCB) containing equipment, hydraulic fluids in elevators or lifts, refrigeration systems, treated wood and mercury containing devices (including fluorescent light bulbs and mercury switches). The Survey shall include plans on hazardous waste or hazardous materials removal, reuse or disposal procedures to be implemented that fully comply state hazardous waste generator requirements (22 California Code of Regulations 66260 et seq). The Survey becomes a condition of any building or demolition permit for the Project. Documentation evidencing disposal of hazardous waste in compliance with the survey shall be submitted to TMD within 30 days of the completion of the demolition. If asbestos is identified, Bay Area Air Quality Management District Regulation 11-2-401.3 a notification must be made and the J number must be made available to the City of Berkeley Permit Service Center.

d. Hazardous Materials Business Plan:

1) A Hazardous Materials Business Plan (HMBP) in compliance with BMC Section 15.12.040 shall be submitted electronically at http://cers.calepa.ca.gov/ within 30 days if onsite hazardous materials exceed BMC 15.20.040. HMBP requirement can be found at http://ci.berkeley.ca.us/hmr/.

Worker health and safety is regulated at the federal level by the US Department of Labor, Occupational Safety and Health Administration (OSHA). OSHA regulations include training requirements for construction workers and a requirement that hazardous materials are accompanied by manufacturer's Safety Data Sheets (SDSs). The Federal Occupational Safety and Health Act of 1970 authorizes states to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program. Cal/OSHA regulations include requirements for protective clothing, training,

and limits on exposure to hazardous materials. California standards for workers dealing with hazardous materials are contained in CCR Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. The routine transport, use, and disposal of hazardous materials at the Project site during construction activities would be required to comply with a project Health and Safety Plan (HASP) prepared in accordance with CCR Title 8, which would mitigate potential health hazards for construction workers from the routine transport, use, or disposal of hazardous materials to a less-than-significant level.

Because the proposed Project would result in soil disturbance greater than 1 acre, management of hazardous materials during construction activities would be subject to the requirements of the Stormwater Construction General Permit (CGP), which requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes hazardous materials storage requirements. For example, construction site operators must store chemicals in watertight containers (with appropriate secondary containment to prevent any spillage or leakage) or in a storage shed (completely enclosed).

In 1990 and 1994, the federal Hazardous Material Transportation Act was amended to improve the protection of life, property, and the environment from the inherent risks of transporting hazardous material in all major modes of commerce. The United States Department of Transportation (USDOT) developed hazardous materials regulations, which govern the classification, packaging, communication, transportation, and handling of hazardous materials, as well as employee training and incident reporting. The transportation of hazardous materials is subject to DOT, Resource Conservation and Recovery Act (RCRA), and State regulations. The California Highway Patrol, the California Department of Transportation (Caltrans), and the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) are responsible for enforcing federal and State regulations pertaining to the transportation of hazardous materials.

Construction of the proposed Project would result in the generation of various waste materials that would require recycling and/or disposal, including some waste materials that may be classified as hazardous waste. Hazardous wastes would be required to be transported by a licensed hazardous waste hauler and disposed of at facilities that are permitted to accept such materials as required by DOT, RCRA, and State regulations.

Compliance with the regulations described above, including BMC Section 15.12.040, OSHA and Cal/OSHA regulations, CCR Title 8; the CGP; and DOT, RCRA, and State regulations, would ensure that the proposed Project would not create a significant hazard to the public or the environment associated with the routine transport, use, or disposal of hazardous materials by ensuring that these materials are properly handled during construction of the proposed Project. Therefore, this impact would be less than significant.

b. Would the Project 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 Impact)***

Users of the completed Project could be exposed to hazards related to accidents that may occur on the nearby UPRR alignment which is located adjacent to the Project site's eastern boundary. This rail

line is used by both cargo (which may transport hazardous waste) and passenger trains. An increase in vehicle traffic generated by the proposed Project would create more activity at the adjacent crossings at Addison Street and Bancroft Way; however, as further discussed in Section 3.17, Transportation, the applicant, UPRR, and the California Public Utilities Commission (CPUC) are coordinating improvements at these crossings to ensure that safety standards are maintained once the Project is completed. In addition, a subsurface hazardous liquid pipeline is located within the rail right-of-way, east of the Project site. For security reasons, very little public information is available about this pipeline. As previously described in Section 3.7, Geology and Soils, CEQA no longer considers the impact of the existing environment on a project to be an environmental impact, unless the project could exacerbate an existing environmental hazard. The proposed Project would not change existing conditions related to this nearby pipeline. Neither construction nor operation of the Project would exacerbate the hazards associated with the rail alignment or the pipeline.

The public and/or the environment could be affected by the release of hazardous materials from the proposed Project into the environment, by: (1) exposing workers and/or the public to potentially contaminated soil and groundwater during construction and/or operation of the Project, or (2) exposing workers and/or the public to hazardous building materials (e.g., Polychlorinated Biphenyls [PCBs], lead paint, asbestos) during demolition of existing commercial structures. However, development projects that require a use permit are required to comply with COA, Toxics that addresses each of these potential impacts (see Section 3.9.a, above).

Onsite Hazardous Building Materials. Due to the age of the buildings on the Project site, asbestos-containing materials (ACMs) and/or lead-based paints (LBP) may be present in the buildings.[66] Demolition activities could cause the release of asbestos and lead into the environment if ACMs and LBP are present in the buildings.

COA: Toxics(C), as outlined above, requires that prior to approval of any permit for partial or complete demolition activities involving the removal of 20 square or lineal feet of interior or exterior walls, a building materials survey shall be conducted by a qualified professional. The survey shall include, but not be limited to, identification of any lead-based paint, asbestos, PCB containing equipment, hydraulic fluids in elevators or lifts, refrigeration systems, treated wood and mercury containing devices (including fluorescent light bulbs and mercury switches). The survey shall include plans on hazardous waste or hazardous materials removal, reuse or disposal procedures to be implemented that fully comply with state hazardous waste generator requirements (22 California Code of Regulations 66260 et seq). The survey becomes a condition of any building or demolition permit for the Project. Documentation evidencing disposal of hazardous waste in compliance with the survey shall be submitted to TMD within 30 days of the completion of the demolition. If asbestos is identified, BAAQMD Regulation 11-2-401.3 notification must be made and the BAAQMD Job Number (or "J Number") must be made available to the City of Berkeley Permit Service Center. Compliance with the requirements described above and outlined in COA: Toxics would ensure that potential impacts related to hazardous building materials would be less than significant.

[66] Cornerstone Earth Group. 2019b. *Phase 1 Environmental Site Assessment, 600 Addison Street/91 Bolivar Drive/2222 Third Street*, *Berkeley, California.* October 2.

Hazardous Soil and Groundwater Conditions. The Project site has been the subject of several environmental investigations and subsequent remediation activities. In 1988, the City issued a Report of Violation for the Project site (2222 Third Street), which indicated that paint and related solvents and pigments were disposed of in the ground at the northwest corner of the old Triangle Paint Factory (roughly the center of the Project site), and that there were several abandoned underground storage tanks (USTs) and 55-gallon drums on the Project site.[67] The City directed the property owner to prepare a plan of corrective action to characterize the extent of soil and water contamination and provide a schedule for removal of the USTs. In 1988, soil samples were collected from depths of 6 and 10 feet from two borings at the Project site which contained elevated concentrations of metals including lead, zinc, nickel, and chromium. Concentrations of total organochlorine pesticides (OCPs) and volatile organic compounds (VOCs) were also detected in the soil samples. Further evaluation to determine the degree of contamination was recommended.[68] In 1998, the City issued a letter[69] which indicated that the USTs at the Project site were considered to be illegally abandoned, and that removal of the USTs should not be performed without prior approval from the TMD. The City again indicated that the old Triangle Paint Factory had illegally disposed of paint, pigments, solvents, and lead in pits at 2222 Third Street and then covered these pits with soil, and that an environmental site assessment by a qualified environmental consultant would be necessary before a change of use or property real estate transaction would be permitted.

In 1999, two USTs were removed from the former Triangle Paint facility which had reportedly been used for storage of mineral spirits, xylenes, and Chevron 265 high flash naphthalene, and impacts from petroleum hydrocarbons and VOCs were detected in soil and groundwater samples collected from the UST excavation.[70]

In February 2000, an Environmental Property Assessment was prepared for the Project site which summarized past land uses of the Project site and surrounding area which could impact environmental conditions at the Project site.[71] The Environmental Property Assessment indicated that in addition to the two USTs removed from the Project site in 1999, a third UST containing fuel oil was identified on historic Sanborn fire insurance maps immediately southwest of the former Triangle Paint Factory. The Environmental Property Assessment recommended sampling in the area of this fuel oil UST and recommended that the results of further investigation in the area of the removed USTs be disclosed, as needed. The Environmental Property Assessment concluded that there is documented fuel, solvent, and pesticide releases in close proximity to the Project site, and recommended screening for impacts associated with adjacent parcels.

In February and March 2000, soil and groundwater sampling was performed throughout the Project site with the exception of the northeast portion of the Project site which was not sampled, likely due

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67 Berkeley, City of. 1988. *Report of Violation, Triangle Paint Company, 2222 Third Street, Berkeley, CA*. June 6.

68 Bay Area Environmental, Inc. 1988. *Lawrence Science Center Analytical Report*. October 18.

69 Berkeley, City of. 1998. Written communication to Charlie Jones, Pacific West Chemicals, 2222 Third Street, Berkeley. March 6.

70 Dugan Associates. 1999*. UST Removal Soil & Groundwater Sampling & Analyses Report.* July 27.

71 Dockter Environmental Consulting. 2000*. Environmental Property Assessment, APN 56-1952-2-1, 91 Bolivar Drive/2222 Third Street/600 Addison Street, Berkeley, California 94710*. February 26*.*

to the presence of existing structures and foundations. Brick, concrete, and wood fragments were noted in fill material beneath the central-western portion of the Project site, and petroleum/product odors were noted in several borings in the central portion of the Project site in the area of the former Triangle Paint facility. Evidence of petroleum hydrocarbons and VOCs was detected in soil and groundwater of the Project site, including impacts from chlorinated solvents in groundwater in the central and southern portions of the Project site. An elevated concentration of petroleum oil and grease was detected in a soil sample collected from a depth of 10 feet in the area where the fuel oil UST was identified in the Environmental Property Assessment. An elevated concentration of total petroleum hydrocarbons (TPH) as diesel in groundwater was also detected in the northwest corner of the Project site.[72]

Additional investigation of soil and groundwater across the Project site was performed in November and December 2000.[73] Elevated concentrations of petroleum hydrocarbons and VOCs were detected in soil and groundwater in the area of the former Triangle Paint Factory, and elevated concentrations of metals including lead, arsenic, zinc, and copper were detected in soil in various locations across the Project site.

In 2001 and 2002, geotechnical investigations were performed at the Project site which indicated that the northern portion of the Project site is underlain by 7 to 8 feet of undocumented fill material and the central and southern portions of the Project site are underlain by undocumented fill material extending to depths of about 9 to 19 feet.[74,75] Geotechnical recommendations for foundation construction indicated that excavation of existing fill and placement of engineered fill would be required beneath new building foundations and pavements.[76] The presence of brick, concrete, and wood fragments in the subsurface of the Project site was identified on boring logs from past environmental investigations.[77] The presence of brick, concrete, and wood fragments in the fill material beneath the Project site suggests that fill materials beneath the Project site may be contaminated with hazard materials such as metals, asbestos, petroleum hydrocarbons, and polycyclic aromatic hydrocarbons (PAHs), which are commonly present in similar fill materials historically placed along the San Francisco Bay margin. The undocumented fill materials may be a source of contaminants detected in the subsurface of the Project site, in addition to contaminant sources associated with historic uses of the Project site and surrounding area.

In 2007, Aquatic Park Sciences Center, LLC, entered into a Voluntary Cleanup Agreement with the Department of Toxic Substances Control (DTSC) to provide oversight for the preparation of a Preliminary Endangerment Assessment (PEA) for the Project site, and in 2008, a PEA was prepared

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72 Dugan Associates. 2000. *Soil & Groundwater Sampling Report*. April 19.

73 Erler & Kalinowski, Inc. 2000. Sample Locations Map & Lab Reports. December.

74 Kleinfelder. 2002. *Supplemental Geotechnical Investigation for the Jones Property on Addison Way in Berkeley, California*. August 21.

75 Kleinfelder. 2001. *Geotechnical Investigation for the Proposed Berkeley Aquatic Park Development on Bancroft Way in Berkeley, California*. September 17.

76 Kleinfelder. 2002, op. cit.

77 Dugan Associates. 2000, op. cit.

for the Project site.[78,79] The PEA divided the Project site into four sub-areas (Area 1 through Area 4, as shown in Figure 3-1) for the discussion of findings and recommendations. Based on the results of soil and groundwater sampling activities, no further action was recommended for Areas 1, 2, and 4, which comprised the northern and southern portions of the Project site. In Area 3, which comprised the central portion of the Project site (including the former Triangle Paint Factory area), contamination of soil and groundwater with petroleum compounds and metals and contamination of soil gas with VOCs including benzene was found. Further action including contaminant source removal and groundwater monitoring were recommended for Area 3 of the Project site.[80] DTSC approved the PEA and referred regulatory oversight of Area 3 to the Berkeley TMD in July 2008.[81,82]

In 2011, a Corrective Measures Plan (CMP) was prepared for Area 3 of the Project site which proposed excavation of an estimated 7,300 cubic yards of soil and post excavation groundwater monitoring to reduce contaminants and prevent adverse exposure to potentially hazardous materials during future development.[83]

In 2012, Berkeley TMD approved the CMP and a geophysical investigation was conducted in a portion of Area 3 prior to the start of planned remedial excavation activities to evaluate whether previously unidentified subsurface features may be present.[84,85] The geophysical investigation identified areas of predominantly metallic debris and areas of predominantly non-metallic debris within the areas of proposed remedial excavation, and identified an area of predominantly metallic debris in an area south of the proposed excavation areas. As discussed above, a fuel oil UST was identified on historic Sanborn fire insurance maps immediately southwest of the former Triangle Paint Factory.[86] No records of the removal of this UST were found, and the area of predominantly metallic debris to the south of the proposed excavation areas is similar to the identified location of this UST. The geophysical investigation indicated that no large buried objects suggestive of drums or USTs were detected, though the possibility of their existence could not be entirely ruled out.[87]

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78 Department of Toxic Substances Control. 2007. *Aquatic Park Sciences Center, 2222 3rd Street, Berkeley, California - Voluntary Cleanup Agreement*. April 25.

79 Kleinfelder. 2008. *Final Preliminary Endangerment Assessment, Aquatic Park Sciences Center, 2222 Third Street, Berkeley, California*. June 11.

80 Ibid.

81 Department of Toxic Substances Control. 2008a. *Aquatic Park Sciences Center, 2222 3rd Street, Berkeley, California - Voluntary Cleanup Agreement Docket No. HAS-VCA 06/07-179, Final Preliminary Endangerment Assessment*. July 18.

82 Department of Toxic Substances Control. 2008b. *Aquatic Park Sciences Center, 2222 3rd Street, Berkeley, California - Referral by Department of Toxic Substances Control*. July 18.

83 Weiss Associates. 2011. *Final Corrective Measures Plan for Aquatic Park Sciences Center, 2222 3rd Street, Berkeley, California*. November 22.

84 Berkeley, City of. 2012. *Toxics Management Division, Approval, Final Corrective Measures Plan for Aquatic Park Sciences Center, 2222 Third Street, Berkeley, California*. February 15.

85 NORCAL Geophyscial Consultants, Inc. 2012. *Geophysical Investigation, Aquatic Park Sciences Center, Former Triangle Paint Co*. Berkeley, CA. June 27.

86 Dockter Environmental Consulting. 2000, op. cit.

87 NORCAL Geophyscial Consultants, Inc. 2012, op. cit.

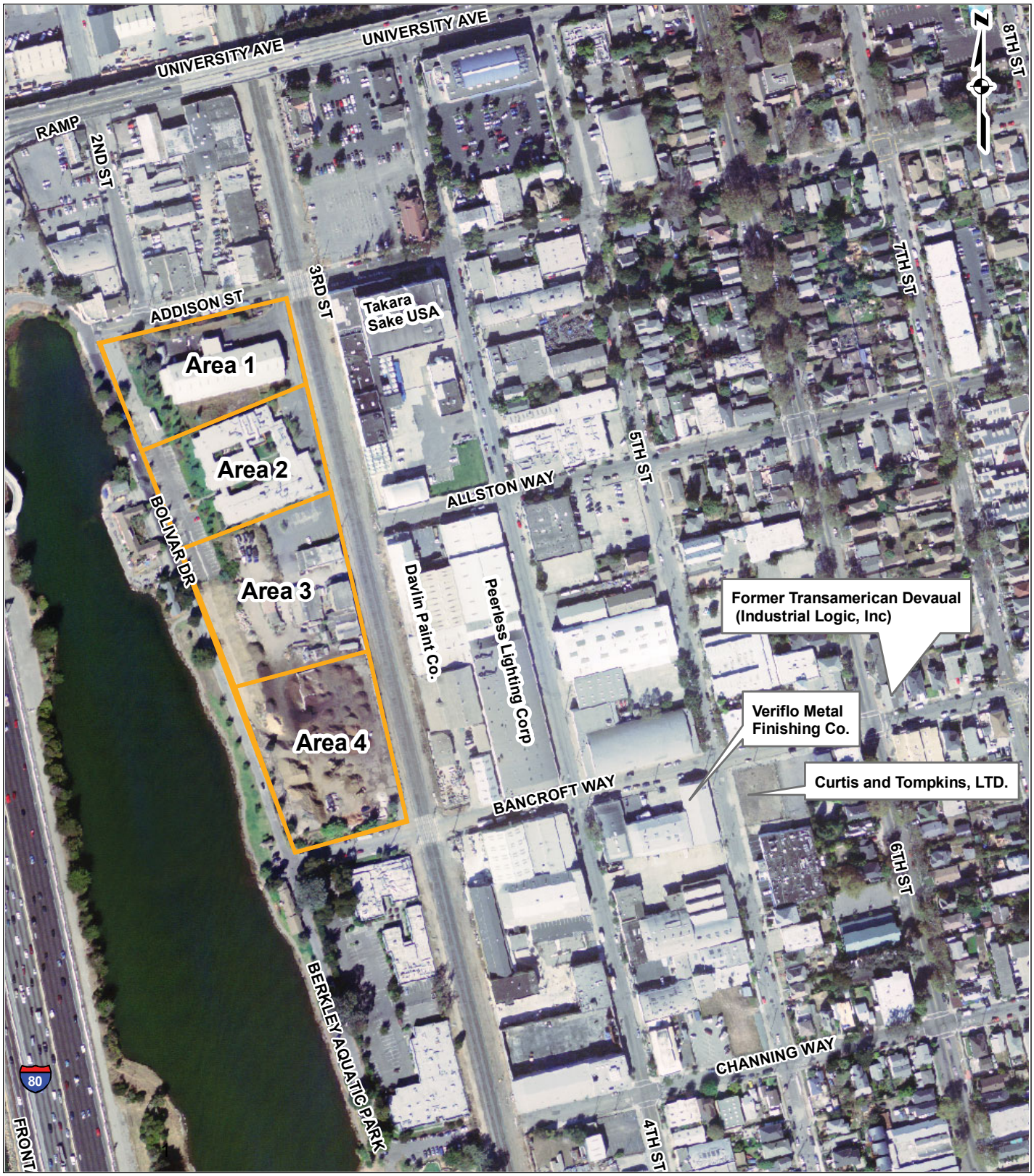

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FIGURE 3-1

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PROJECT TRUE N

Site Boundary

600 Addison Street Project IS/MND

Preliminary Endangerment Assessment Sub Areas

SOURCE: Kleinfelder, 3/4/2008.

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Remediation activities were performed at the Project site in 2012, which involved excavation of one area near the former USTs (Pit # 1) and excavation of a second area that was previously used as a waste disposal location for the former paint manufacturing company (Pit # 2).[88] Based on visual observation, photoionization detector screening, and confirmation sample laboratory analytical results, the proposed excavation limits were expanded in an effort to achieve the proposed remedial action objective of 180 milligrams per kilogram of TPH for soil. The total volumes of in-place soil excavated from Pit #1 and Pit #2 were 4,189 cubic yards and 1,709 cubic yards, respectively. An oxygen release compound was distributed at the base of Pit #1 to enhance aerobic degradation of residual fuel hydrocarbons in soil and groundwater. After completion of excavation backfilling, three shallow groundwater monitoring wells and one deeper groundwater monitoring well were installed. Quarterly groundwater monitoring was performed from October 2012 to July 2013.[89] In June 2013, Berkeley TMD issued a letter indicating that the corrective action goals for the recognized petroleum impacts in soil had been met;[90] with the exception of areas considered to be vulnerable due to sensitive buried utilities, and that groundwater monitoring results suggest improving conditions. In July 2013, Berkeley TMD transferred oversight of the cleanup case to the RWQCB.[91] In July 2014, the RWQCB issued a Closure Letter indicating that although the case did not meet all the criteria of the State Water Resources Control Board (State Water Board) Low-Threat UST Case Closure Policy, a "No Further Action" determination was appropriate for the site.[92] The Closure Letter also indicated the following:

- There may be residual petroleum-contaminated soil and groundwater at the site that could pose an unacceptable risk as a result of future construction/redevelopment activities, such as onsite excavation activities, the installation of water wells at or near the site, or change to a more sensitive land use.

- Contractors performing subsurface activities at the site should be prepared to encounter soil and groundwater contaminated with petroleum hydrocarbons, and any encountered pollution should be managed properly to avoid threats to human health or the environment.

- Proper management may include sampling, risk assessment, additional cleanup work, mitigation measures, or some combination of these tasks.

A Phase I Environmental Site Assessment (Phase I ESA) prepared for the Project site in 2019 confirmed that it is possible that residual hazardous materials resulting from previous uses on the Project site have impacted soil, groundwater, and soil vapor beneath the Project site. In addition,

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88 Weiss Associates. 2013a. *Corrective Measures Plan Completion Report for Aquatic Park Sciences Center, 2222 Third Street, Berkeley, California*. January 9.

89 Weiss Associates. 2013b. *Groundwater Monitoring Report and Recommendation for Low-Threat Underground Storage Tank Case Closure for Area 3 for Aquatic Park Sciences Center, 2222 Third Street, Berkeley, California*. August 29.

90 Berkeley, City of. 2013. *Toxics Management Division, Corrective Measures Plan Completion for Aquatic Park Sciences Center, 2222 Third Street, Berkeley, California*. June 21.

91 Weiss Associates. 2013b, op. cit.

92 San Francisco Bay Regional Water Quality Control Board. 2014. *Transmittal of Closure Letter, Aquatic Science Center, 2222 Third Street, Berkeley, Alameda County*. July 14.

the Phase I ESA determined that concentrations of diesel, gasoline, and mineral spirits are present on the Project site, and that residual petroleum hydrocarbon-impacted groundwater may exist on the site. Finally, groundwater samples collected as a part of the Phase I ESA contained VOCs, including TCE.[93] Further sampling on the Project site confirmed the presence of lead within soils and PCE and benzene within soil vapor.[94]

The proposed Project is located within the City's EMA.[95] These areas in the City are known or suspected to have groundwater contamination.[96] COA: Toxics(B) requires that an SGMP be prepared for all non-residential projects, and residential or mixed use projects with five or more units, that: (1) are located within the EMA; and (2) propose any excavations deeper than 5 feet below grade. The proposed Project is a non-residential development within the EMA and would require excavation deeper than 5 feet below grade for construction of utilities and foundations, therefore preparation of a SGMP would be required for the proposed Project.

According to COA: Toxics, the SGMP must be site-specific and include the following:

- Identify procedures for soil and groundwater management including identification of pollutants and disposal methods.
- Identify permits required and comply with all applicable local, State and regional requirements.
- Require notification to the City's TMD of any hazardous materials found in soils and groundwater during development.
- Provide guidance on managing odors during excavation.
- Provide the name and phone number of the individual responsible for implementing the SGMP and post the name and phone number for the person responding to community questions and complaints.

TMD may impose additional conditions as deemed necessary. All requirements of the approved SGMP would be conditions of approval of the requested Use Permit(s). Preparation and implementation of a SGMP in accordance with the requirements of COA: Toxics would ensure that potential impacts associated with disturbance and excavation of potentially contaminated soil and groundwater at the Project site would be less than significant.

As discussed above, impacts from VOCs including chlorinated solvents have been detected in groundwater beneath the central and southern portion of the Project site. The impacts from VOCs in

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93 Cornerstone Earth Group. 2019b, op. cit.

94 Cornerstone Earth Group. 2019c. *Soil and Soil Vapor Quality Evaluation, Berkeley Commons, 91 Bolivar Drive, 600 Addison Street, and 2222 Third Street, Berkeley, California.* November 11.

95 Berkeley, City of. 2010b. Environmental Management Area. Available online at: www.cityofberkeley.info/uploadedFiles/IT/Level_3_-_General/ema.pdf (accessed June 2020).

96 Berkeley, City of. 2016a. Environmental Management Area Website. Website: www.ci.berkeley.ca.us/Planning_and_Development/Toxics_Management/Environmental_Management_Area.aspx (accessed June 2020).

groundwater have been attributed to migration of contaminated groundwater beneath the Project site from off-site sources. Soil and soil vapor sampling on the Project site indicates the presence of VOCs, including PCE and TCE. However, the concentrations of VOCs detected in the soil vapor do not appear to present a significant vapor intrusion risk for the proposed Project and no further action was recommended.[97]

Therefore, preparation and implementation of an SGMP for excavation and dewatering activities (as required by the TMD and described above) would ensure that the proposed Project would result in less than significant impacts to the public or the environment related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c. Would the Project 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 Impact)***

Black Pine Circle School, a private school located at 2027 Seventh Street, and Via Center, a private school located at 2126 Sixth Street, are less than 0.25 miles northeast and east, respectively, of the Project site, and Rosa Parks Elementary School, a public school located at 920 Allston Way, is located 0.25 miles east of the Project site. Compliance with federal, State, and local regulations for the management of hazardous materials, as discussed in Sections 3.9.a and 3.9.b, above, would ensure that potential impacts to nearby schools associated with hazardous materials emissions and use at the Project site would be less than significant.

d. Would the Project 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 it create a significant hazard to the public or the environment? ***(Less-Than-Significant Impact)***

The provisions of Government Code Section 65962.5 require the DTSC, the State Water Board, the California Department of Health Services, and the California Department of Resources Recycling and Recovery (formerly the California Integrated Waste Management Board) to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, leaking underground storage tank (LUST) sites, and/or hazardous materials releases to the Secretary of Cal/EPA. The Project site is listed as a closed LUST site on the State Water Board's Geotracker database.[98] The Project site is also listed as two hazardous materials cleanup sites in the DTSC Envirostor database. One site is listed as Triangle Coatings and is specific to the investigation and cleanup of the former Triangle Coatings facility, and the other site is listed as Aquatic Park Science Center and includes the entire Project site.[99,100] The Project site is therefore included on lists of hazardous materials release sites compiled pursuant to Government Code Section 65962.5.

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97 Cornerstone Earth Group. 2019c, op. cit.

98 State Water Resources Control Board. 2016. Geotracker web page for Aquatic Park Science Center, geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000001064 (accessed June 2020).

99 California Department of Toxic Substances Control. 2016a. Envirostor, Triangle Coatings (60000938). Website: www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000938 (accessed January 11, 2021).

As discussed in Section 3.9.b, above, the Project site has been the subject of several environmental investigations and remediation activities performed under oversight of regulatory agencies. The regulatory agencies have determined that no further action was required for the Project site, even though residual or previously unidentified contaminated soil, groundwater, and soil gas may be present at the Project site which could potentially result in exposure of construction workers, the surrounding public, future site occupants, and the environment to hazardous materials. Preparation and implementation of an SGMP for excavation and dewatering activities would ensure that the proposed Project would result in less than significant impacts to construction workers, the surrounding public, future site occupants, and the environment related to past releases of hazardous materials into the environment.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 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? ***(No Impact)***

The Project site is located approximately 10 miles north of the Oakland International Airport. The Project site is not located within a public airport land use plan or within 2 miles of a public use airport.[101] The proposed Project is not within the vicinity of a private airstrip. Therefore, the proposed Project would not result in a safety hazard to people working or residing in the area due to the proximity of an airport.

g. Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ***(Less-Than-Significant Impact)***

The proposed Project would be consistent with the policies outlined in the City of Berkeley General Plan's Disaster Preparedness and Safety Element and would not obstruct emergency evacuation routes.[102] University Avenue, Sixth Street, and Channing Way are the designated emergency access and evacuation routes in the Project area. Although the proposed Project would result in the conversion of a segment of Bolivar Drive along the Project site frontage to a one-way travel lane in the southbound direction, this roadway is not a designated emergency evacuation route. Furthermore, ingress and egress to and from the Project site would be via Addison Street and Bancroft Way; no vehicle access would be provided via Bolivar Drive. Although the automobile lane on Bolivar Drive would be narrowed to 11.5 feet, the street would continue to be accessible for emergency evacuation and fire apparatuses. . Therefore, the proposed Project would not be expected to impair the function of nearby emergency evacuation routes and would have a less-than-significant impact on implementation of an adopted emergency response plan or emergency evacuation plan.

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100 California Department of Toxic Substances Control. 2016b. Envirostor, Aquatic Park Science Center (70000105), www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=70000105 (accessed January 11, 2021).

101 Alameda County Community Development Agency. 2010. *Oakland International Airport, Airport Land Use Compatibility Plan*. December.

102 Berkeley, City of. 2002, op. cit.

h. Would the Project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? ***(No Impact)***

The Project site is in an urban area and is not within or adjacent to a wildland fire hazard area. Therefore, the proposed Project would not expose people or structures to a significant loss, injury or death involving wildland fires.

3.10 HYDROLOGY AND WATER QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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 offsite;	☐	☐	☒	☐
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
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 flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

a. Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? ***(Less-Than-Significant Impact)***

Regional Drainage. The Project site is located within the Potter/Derby Creeks Watershed, as shown in Figure 3-2. The Strawberry Creek Watershed is located to the northeast of the Project site, across the UPRR right-of-way and Addison Street. The dominant hydrologic features in the vicinity of the Project site are the lagoons of Aquatic Park, which include the Main Lagoon, Model Yacht Club Basin, and Radio Tower Pond, and cover about 68 acres of the park. The lagoons are mostly shallow, subtidal aquatic habitat with a sandy/muddy bottom, similar to adjacent portions of central San Francisco Bay. Under typical conditions, hydrology within the lagoons are strongly influenced by tidal hydrology, as the lagoons are directly and indirectly connected to central San Francisco Bay. [103] However, the tidal tubes that connect the lagoons with San Francisco Bay are currently damaged and become easily clogged with sediment, which results in flooding of adjacent properties during

[103] Berkeley, City of. 2012a, op. cit.

storm events.[104, 105] The City recently cleaned the tidal tubes during the fall of 2020 as part of the Aquatic Park Tide Tube Cleaning and Investigation Project.[106] While the tide tubes are currently functional, design and permitting funding for repair is currently being sought. Storm runoff and surface water inflows from a 4,380-acre (6.8-square-mile) watershed, which includes a sizeable portion of the City of Berkeley, influence in tidal levels, particularly during the rainfall season.[107] The Project site is located east of and adjacent to the Main Lagoon of Aquatic Park. The Model Yacht Club Basin is located approximately 1 mile south of the Project site, south of the Main Lagoon, and the Radio Tower Pond is located just south of the Model Yacht Club Basin.[108]

The Potter/Derby Creek Watershed includes Potter Creek, Derby Creek and several unnamed tributaries. Both Potter Creek and Derby Creek, which formerly flowed south of the Project site, have been replaced by underground pipelines and culverts as part of the City's storm drainage system. The stream channels of these creeks and the tributaries have been almost completely filled in. The Potter/Derby Creek Watershed drains to the Potter Street storm drain network (Potter line).[109] The Potter line discharges into San Francisco Bay at the terminus of Potter Street through a 7-foot by 9-foot culvert. The line passes between the Model Yacht Club Basin and Radio Tower Ponds via two 24-inch pipes and connects the storm drain with the Model Club Yacht Basin (within Aquatic Park), as shown in Figure 3-2.[110] Both tidal inflows and surface water runoff enter the Model Yacht Club Basin via the Potter line to varying degrees depending upon water levels in San Francisco Bay and the Aquatic Park lagoons, and the magnitude of storm events. Although the Project site is located in the Potter/Derby Creeks Watershed, the nearest existing storm drain pipes and inlets to the Project site are located near the northwest corner of the site along Addison Street and drain into Aquatic Park, which are located on the boundary of the Strawberry Creek Watershed.[111] Flow of water (and water quality) within the lagoons of Aquatic Park is generally influenced by tidal hydrology, as the lagoons are connected to San Francisco Bay.

Regulatory Framework. Water quality in the State of California is regulated by the State Water Board and the nine Regional Water Quality Control Boards. The City of Berkeley is located in the jurisdiction of the San Francisco Bay Regional Water Board (RWQCB). Section 303(d) of the Federal Clean Water Act (CWA) requires that states identify water bodies including bays, rivers, streams, creeks, and coastal areas that do not meet water quality standards and the pollutants that are causing the impairment. Total Maximum Daily Loads (TMDLs) describe the maximum amount of a pollutant that a water body can receive while still meeting established water quality standards. A

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104 Berkeleyside. 2017. Aquatic Park Flooding Worsened by Antiquated Drainage Pipes. Website: www.berkeleyside.com/2017/02/10/aquatic-park-flooding-worsened-antiquated-drainage-pipes (accessed May 2020).

105 Berkeley, City of. 2020. Aquatic Park. Website: www.cityofberkeley.info/Parks_Rec_Waterfront/Trees_Parks/Parks___Aquatic_Park_(rev).aspx (accessed October 2020).

106 Ibid.

107 Berkeley, City of. 2012a, op. cit.

108 Ibid.

109 Sowers, Janet M. 1993. Creek and Watershed Map of Oakland and Berkeley, The Oakland Museum of California. Website: explore.museumca.org/creeks/MapOak.html (accessed May 2020). Rev. 2000.

110 Berkeley, City of. 2012, op. cit.

111 Ibid.

TMDL requires that all sources of pollution and all aspects of a watershed's drainage system be reviewed and set forth action plans that examine factors and sources adversely affecting water quality and identify specific plans to improve overall water quality and reduce pollutant discharges into impaired water bodies. Central San Francisco Bay is listed as an impaired water body for several pollutants including chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, trash, selenium, mercury, chlorinated biphenyls (PCBs), dioxin compounds (including 2, 3, 7, 8-tetrachloro-dibenzodioxin [2, 3, 7, 8-TCDD]), furan compounds, and invasive species.[112]

The National Pollutant Discharge Elimination System (NPDES) was created under the CWA and is regulated by the State Water Board in California to prohibit the discharge of pollutants to receiving waters unless the discharge is in compliance with NPDES permit requirements. NPDES requirements that would apply to both the construction-phase and the operation phase of the Project are described below.

Construction. The Proposed Project includes demolition of the existing onsite buildings and surface pavements and parking lots, excavation of 74,000 cubic yards of soil, construction of the R&D and office campus buildings, and off-site improvements within and immediately adjacent to the Bolivar Drive right-of-way. Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (e.g., paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm water runoff into receiving waters (i.e., the Model Yacht Club Basin and Central San Francisco Bay).

During construction, the total disturbed soil area on the Project site would be approximately 8.4 acres, with additional areas of disturbance within and adjacent to Bolivar Drive. Because construction of the proposed Project would disturb greater than 1 acre of soil, the Project is subject to the requirements of the State Water Board's NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ) (Construction General Permit) and the City's COA: Stormwater Requirements, outlined below. A Notice of Intent would be filed with the State Water Board via the Stormwater Multiple Application and Report Tracking System (SMARTS) in order to obtain coverage under the Construction General Permit for the proposed Project. In compliance with the requirements of the Construction General Permit, an SWPPP would be prepared and construction BMPs detailed in the SWPPP would be implemented during construction activities.

[112] State Water Resources Control Board. *Final 2014/2016 California Integrated Report* (Clean Water Act Section 303(d) List/305(b) Report). Website: www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml (accessed May 2020).

LSA

FIGURE 3-2

LEGEND

- Project Area
- Potter/Derby Creek Watershed
- Bay Fill Watershed
- Tidal Tube Connections

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SOURCE: Alameda County Flood Control & Water Conservation District (2020), Berkeley Aquatic Park Improvement Program Draft EIR (11/2012), Google Maps Sat (2020).

I:\CBE1906\GIS\Maps\Figure 3-1_Potter-Derby Creek Watershed.mxd (12/2/2020)

600 Addison Street Project IS/MND

Surrounding Hydrologic Features

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As described in the Construction General Permit, construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site; and "Good Housekeeping" BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. Construction BMPs applicable to the proposed Project are detailed in the Stormwater Requirements Checklist completed for the proposed Project.[113] In addition, provision C.6 of the RWQCB's MRP requires the City to implement a construction site inspection and control program at all construction sites, with follow-up and enforcement, to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. Inspections must confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers; and reporting must demonstrate the effectiveness of this inspection and problem solution. Compliance with the requirements of the Construction General Permit and the COAs, as outlined below, including incorporation of construction BMPs to target and reduce pollutants of concern in stormwater runoff, would ensure that construction impacts related to violation of waste discharge requirements and water quality standards and degradation of water quality would be less than significant.

COA: Stormwater Requirements. The applicant shall demonstrate compliance with the requirements of the City's National Pollution Discharge Elimination System (NPDES) permit as described in BMC Section 17.20. The following conditions apply:

A. The Project plans shall identify and show site-specific Best Management Practices (BMPs) appropriate to activities conducted onsite to limit to the maximum extent practicable the discharge of pollutants to the City's storm drainage system, regardless of season or weather conditions.

B. Trash enclosures and/or recycling area(s) shall be covered; no other area shall drain onto this area. Drains in any wash or process area shall not discharge to the storm drain system; these drains should connect to the sanitary sewer. Applicant shall contact the City of Berkeley and EBMUD for specific connection and discharge requirements. Discharges to the sanitary sewer are subject to the review, approval and conditions of the City of Berkeley and EBMUD.

C. Landscaping shall be designed with efficient irrigation to reduce runoff, promote surface infiltration and minimize the use of fertilizers and pesticides that contribute to stormwater pollution. Where feasible, landscaping should be designed and operated to treat runoff. When and where possible, xeriscape and drought tolerant plants shall be incorporated into new development plans.

D. Design, location and maintenance requirements and schedules for any stormwater quality treatment structural controls shall be submitted to the Department of Public Works for review with respect to reasonable adequacy of the controls. The review does not relieve the property owner of the responsibility for complying with BMC Chapter 17.20 and future revisions to the City's overall stormwater quality ordinances. This review shall be shall be conducted prior to the issuance of a Building Permit.

[113] Berkeley Commons, LLC. 2021. *City of Berkeley Stormwater Requirements Checklist*. January 7.

E. All paved outdoor storage areas must be designed to reduce/limit the potential for runoff to contact pollutants.

F. All onsite storm drain inlets/catch basins must be cleaned at least once a year immediately prior to the rainy season. The property owner shall be responsible for all costs associated with proper operation and maintenance of all storm drainage facilities (pipelines, inlets, catch basins, outlets, etc.) associated with the Project, unless the City accepts such facilities by Council action. Additional cleaning may be required by City of Berkeley Public Works Engineering Dept.

G. All private or public Projects that create and/or replace 10,000 square feet or more of impervious surface must comply with Provision C.3 of the Alameda County NPDES permit and must incorporate stormwater controls to enhance water quality. Permit submittals shall include a Stormwater Requirement Checklist and detailed information showing how the proposed Project will meet Provision C.3 stormwater requirements, including a) Site design measures to reduce impervious surfaces, promote infiltration, and reduce water quality impacts; b) Source Control Measures to keep pollutants out of stormwater runoff; c) Stormwater treatment measures that are hydraulically sized to remove pollutants from stormwater; d) an O & M (Operations and Maintenance) agreement for all stormwater treatment devices and installations; and e) Engineering calculations for all stormwater devices (both mechanical and biological).

H. All onsite storm drain inlets must be labeled “No Dumping – Drains to Bay” or equivalent using methods approved by the City.

I. Most washing and/or steam cleaning must be done at an appropriately equipped facility that drains to the sanitary sewer. Any outdoor washing or pressure washing must be managed in such a way that there is no discharge or soaps or other pollutants to the storm drain. Sanitary connections are subject to the review, approval and conditions of the sanitary district with jurisdiction for receiving the discharge.

J. All loading areas must be designated to minimize “run-on” or runoff from the area. Accumulated waste water that may contribute to the pollution of stormwater must be drained to the sanitary sewer or intercepted and pretreated prior to discharge to the storm drain system. The property owner shall ensure that BMPs are implemented to prevent potential stormwater pollution. These BMPs shall include, but are not limited to, a regular program of sweeping, litter control and spill cleanup.

K. Sidewalks and parking lots shall be swept regularly to prevent the accumulation of litter and debris. If pressure washed, debris must be trapped and collected to prevent entry to the storm drain system. If any cleaning agent or degreaser is used, wash water shall not discharge to the storm drains; wash waters should be collected and discharged to the sanitary sewer. Discharges to the sanitary sewer are subject to the review, approval and conditions of the sanitary district with jurisdiction for receiving the discharge.

L. The applicant is responsible for ensuring that all contractors and sub-contractors are aware of and implement all stormwater quality control measures. Failure to comply with the approved construction BMPs shall result in the issuance of correction notices, citations, or a Project stop work order.

COA: Public Works. All piles of debris, soil, sand, or other loose materials shall be covered at night and during rainy weather with plastic at least one-eighth millimeter thick and secured to the ground.

COA: Public Works. The applicant shall ensure that all excavation takes into account surface and subsurface waters and underground streams so as not to adversely affect adjacent properties and rights-of-way.

COA: Public Works. The project applicant shall maintain sandbags or other devices around the site perimeter during the rainy season to prevent onsite soils from being washed off site and into the storm drain system. The project applicant shall comply with all City ordinances regarding construction and grading.

COA: Public Works. Prior to any excavation, grading, clearing, or other activities involving soil disturbance during the rainy season the applicant shall obtain approval of an erosion prevention plan by the Building and Safety Division and the Public Works Department. The applicant shall be responsible for following these and any other measures required by the Building and Safety Division and the Public Works Department.

According to the Preliminary Geotechnical Investigation[114] prepared for the proposed Project, groundwater conditions likely vary across the Project site from west to east. Groundwater was encountered at depths between approximately 5 to 18 feet below the current grade during borings drilled as part of the Geotechnical Investigation. Based on results of the borings, the Geotechnical Investigation concluded that shallow groundwater is anticipated to exist on the Project site at depths of approximately 5 to 10 feet below the existing ground surface. Because the maximum depth of excavation is 20 feet, groundwater dewatering is anticipated to be required during construction. According to the Geotechnical Investigation, dewatering of utility trenches may be required in isolated areas of the Project site. Improper management and discharge of dewatering effluent into the storm drainage system or receiving waters could adversely affect water quality as contaminants and sediment may be present in the dewatering effluent.

The City of Berkeley's Environmental Management Area map identifies areas in the City known or suspected to have groundwater contamination.[115] The Project site is located with an EMA. Additionally, according to the Soil and Soil Vapor Quality Evaluation[116] conducted for the Project, tetrachloroethane (PCE) from an off-site source has previously been detected in groundwater beneath the Project site and may be the source of PCE detected in soil vapor samples collected on the Project site. Additionally, residual petroleum hydrocarbon-impacted groundwater may exist on

[114] Cornerstone Earth Group. 2019a, op. cit.
[115] Berkeley, City of. 2010b, op. cit.
[116] Cornerstone Earth Group. 2019c, op. cit.

the Project site. For development projects within the EMA where dewatering is anticipated, the City's Toxics Management Division has adopted specific requirements. Since dewatering activities can draw in contamination from outside areas, monitoring of the groundwater discharges may be required. The Toxics Management Division may require dewatering and monitoring plans to ensure the discharge of clean water and the protection of the community from vapors or other health hazards. Additionally, where there is sufficient information indicating soils contamination is present, the Toxics Management Division could require testing of excavation spoils and documentation of proper disposal.[117] The specific requirements for the proposed Project would be specified by the City as standard conditions of approval, as outlined in COA: Toxics (refer to Section 3.9, Hazards and Hazardous Materials). Additionally, as required by the City's COAs, and according to the Phase 1 Environmental Site Assessment[118] and Soil and Soil Vapor Quality Evaluation[119] prepared for the proposed Project, a Soil Management Plan would be prepared for the Project, which would establish the appropriate management practices for handling, treatment, and disposal of contaminated groundwater if encountered during construction. Compliance with the City of Berkeley requirements and the recommendations of the Phase I ESA and Soil and Soil Vapor Quality Evaluation and implementation of a Soil Management Plan would be required as part of the conditions of approval for the proposed Project and would ensure that contaminated groundwater is not discharged to surface water. Therefore, groundwater dewatering impacts related to violation of waste discharge requirements and water quality standards and degradation of water quality would be less than significant.

Infiltration of stormwater has the potential to affect groundwater quality in areas of shallow groundwater. As stated previously, the Geotechnical Investigation concluded that shallow groundwater is anticipated to exist on the Project site at depths of approximately 5 to 10 feet below the existing ground surface. Therefore, due to the shallow groundwater table, stormwater may infiltrate during project construction, potentially affecting groundwater quality given the direct path for pollutants to reach the groundwater table. Proposed construction BMPs, as required by the Construction General Permit and COA: Stormwater Requirements, would reduce infiltration of pollutants to groundwater during construction. Therefore, project construction would not substantially degrade groundwater quality and this impact would also be less than significant.

Operation. The proposed Project would result in the development of approximately 461,822 gross square feet of R&D and Office uses with associated parking and landscaping improvements, as well as off-site improvements within and immediately adjacent to the Bolivar Drive right of way. The proposed Project would increase impervious surface area on the Project site which, without compliance with regulatory requirements, has the potential to increase stormwater runoff and more effectively transport pollutants into receiving waters.

As previously described in Chapter 1.0, Project Information, approximately 3.17 acres (138,143 square feet), or 38 percent, of the approximately 8.4-acre (365,904-square-foot) Project site are

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117 Berkeley, City of. Toxics Management Division. Environmental Management Area. Website: www.cityofberkeley.info/Planning_and_Development/Toxics_Management/Environmental_Management_Area.aspx (accessed May 2020)

118 Cornerstone Earth Group. 2019b, op. cit.

119 Cornerstone Earth Group. 2019c, op. cit.

currently covered by existing buildings and paved impervious surfaces. The existing soils facility and other unpaved surfaces within the site (approximately 4.6 acres or 200,061 square feet) consist of compacted soils and fragments of previous foundations that limit stormwater infiltration (for a total of 91 percent of the site covered by impervious surfaces). Development of the proposed Project would result in an increase of pervious surfaces on the site from approximately 0.59 acres (25,700 square feet) of existing pervious surface coverage to approximately 0.79 acres (34,412 square feet) of pervious surface coverage. According to the Stormwater Requirements Checklist,[120] the proposed Project would result in 331,198 square feet of total new impervious surface area (56,831 square feet of replaced impervious surface area and 274,367 square feet of new impervious surface area). In addition, the proposed uses would intensify uses on the Project site compared to existing conditions, which would increase the potential for pollutants of concern to be generated on the Project site and discharged to surface waters during storm events. Increased vehicle trips to and from the Project site could result in a greater potential for leaks of fuels and lubricants, tire wear particulates, brake dust, and fallout from exhaust emissions to convey petroleum hydrocarbons, heavy metals, and sediment off site during storm events. The proposed landscaping could contain residual pesticides and nutrients used for landscape maintenance. The intensification of land uses could result in increased trash generation over existing conditions. Development of the off-site improvements would primarily occur within the existing paved areas of Bolivar Drive and increased impervious surface area is not anticipated.

Project operation and maintenance would be subject to the RWQCB's MRP, Order R2-2015-0049, NPDES Permit No. CAS612008. Provision C.3 of the MRP sets forth appropriate and site specific source control, site design, and stormwater treatment measures for new and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new projects. The proposed Project is considered a regulated project because it is a redevelopment project that would create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire Project site). Additionally, stormwater treatment systems would be required to be designed and sized to treat stormwater runoff from the entire Project site pursuant to the requirements of Provision C.3 of the MRP and COA: Stormwater Requirements.[121]

Regulated projects must prepare a Stormwater Management Plan in accordance with the C.3 Stormwater Technical Guidance[122] to detail the BMPs to be implemented as part of the Project. Regulated projects must implement source control, site design, and treatment BMPs. Source control BMPs are preventative measures that are implemented to prevent the introduction of pollutants into stormwater. Site design BMPs are stormwater management strategies that emphasize conservation and use of existing site features to reduce the amount of runoff and pollutant loading generated from a project site. Treatment BMPs are structural BMPs designed to treat and reduce pollutants in stormwater runoff prior to releasing it to receiving waters. Source Control BMPs, Site Design BMPs, and Treatment BMPs applicable to the proposed Project are detailed in the

[120] Berkeley Commons, LLC. 2021, op. cit.

[121] San Francisco Bay Regional Water Quality Control Board. 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008. November 19.

[122] Clean Water Program. 2017, op. cit.

Stormwater Requirements Checklist completed for the proposed Project.[123] The Treatment BMPs would include biotreatment areas (flow-through planter boxes). According to the Conceptual Stormwater Management Plan, the Treatment BMPs would treat 12,753 square feet in compliance with the requirements of Provision C.3 of the MRP. The proposed BMPs would target and reduce pollutants of concern in stormwater runoff from the Project site in compliance with the MRP requirements prior to discharge to receiving waters, which would minimize impacts to surface water quality.

As previously discussed, infiltration of stormwater could affect groundwater quality in areas of shallow groundwater. Due to the shallow groundwater depths of approximately 5 to 10 feet below the existing ground surface of the Project site, stormwater may infiltrate during Project operation, potentially affecting groundwater quality given the direct path for pollutants to reach the groundwater table. The proposed Project would be required to implement operational BMPs (including source control, site design, and treatment BMPs) to treat stormwater before it could reach groundwater. These proposed BMPs would treat stormwater runoff onsite, and would reduce the volume of stormwater and the infiltration of pollutants into groundwater during operation. Additionally, the proposed Project would increase impervious surface area compared to existing conditions which would reduce infiltration, and the proposed Project would not include infiltration BMPs. Therefore, minimal infiltration would occur onsite during operation, and Project operation would not substantially degrade groundwater quality.

In conclusion, compliance with the requirements of the MRP and COA: Stormwater Requirements, including incorporation of operational BMPs to target pollutants of concern, would ensure that impacts related to violation of waste discharge requirements and water quality standards and degradation of water quality would be less than significant.

b. Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? ***(Less-Than-Significant Impact)***

Groundwater Basins. The City of Berkeley is located within the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin, which encompasses approximately 122 square miles in Alameda and Contra Costa counties. The East Bay Plain Subbasin generally extends from north to south from the San Pablo Bay to the Niles Cone Groundwater Basin near Hayward. A substantial amount of artificial fill (thicknesses ranging from 1 to 50 feet) has been placed within the basin, with thickest deposits found nearer to San Francisco Bay. Historical groundwater levels in the East Bay Plain Subbasin have varied between 10 to 140 feet below mean sea level; however, levels have been rising continuously since the 1950s. [124]

As previously discussed in Section 3.10.a, according to the Geotechnical Investigation Report prepared for the proposed Project, shallow groundwater is anticipated to exist on the Project site at

[123] Berkeley Commons, LLC. 2021, op. cit.

[124] California Department of Water Resources. 2004. *California's Groundwater Bulletin 118 – Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin*. February 27. Website: water.ca.gov/Programs/Groundwater-Management/Bulletin-118 (accessed May 2020).

depths of approximately 5 to 10 feet below the existing ground surface. Because the maximum depth of excavation is 20 feet, groundwater dewatering is anticipated to be required during construction. According to the Geotechnical Investigation Report, dewatering of utility trenches may be required in isolated areas of the Project site. According to the Soil and Soil Vapor Quality Evaluation prepared for the proposed Project, substantial groundwater dewatering during construction is not anticipated. Dewatering would be temporary and would not result in long-term lowering of the groundwater levels.

As also discussed in Section 3.10.a, the proposed Project would result in 331,198 square feet of total new impervious surface area (56,831 square feet of replaced impervious surface area and 274,367 new impervious surface area). An increase in impervious surface area would decrease onsite infiltration of stormwater runoff. However, any decrease in infiltration would be minimal compared to the size of the groundwater basin and would not be anticipated to result in a net decrease in groundwater and aquifer levels.

Water supply to the proposed Project would be provided by the EBMUD water system, which is supplied from the Mokelumne River.[125] Because EBMUD does use groundwater from the East Bay Plain Subbasin for municipal water supply, water use during operation of the proposed Project would not affect groundwater. Additionally, onsite groundwater extraction during operation would not occur. Therefore, no depletion of the underlying aquifer would occur during the operational phase of the Project. For these reason listed above, impacts related to the decrease of groundwater supplies or interference with groundwater recharge would be less than significant.

c. Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: 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 flood flows? ***(Less-Than-Significant with Mitigation Incorporated)***

Erosion or Siltation. The proposed Project would not alter the course of a stream or a river. Site preparation and the proposed removal of approximately 74,000 cubic yards of soil and grading and excavation activities may slightly and temporarily alter onsite drainage; however, the existing drainage patterns would generally be maintained and would not be substantially altered or modified. During construction, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. Compliance with the Construction General Permit, COA: Stormwater Requirements, preparation of a SWPPP, and implementation of Erosion Control and Sediment Control BMPs would reduce impacts related to erosion and siltation.

[125] East Bay Municipal Utility District. 2021. Water Supply. Website: www.ebmud.com/water/about-your-water/water-supply (accessed January 11, 2021)

At Project completion, approximately 331,198 square feet of the Project site would be impervious surface area and not prone to onsite erosion or siltation because no soil would be included in these areas. The remaining portion of the site would consist of pervious surface area, which would contain landscaping that would minimize onsite erosion and siltation by stabilizing the soil. Therefore, onsite erosion and siltation impacts would be minimal. Additionally, compliance with MRP requirements and standard conditions of approval require applicants to establish and maintain drainage patterns so as to not adversely affect adjacent properties and rights-of-way. For these reasons, potential on- and off-site erosion and siltation impacts would be less than significant.

Flooding. As indicated above, the proposed Project would not alter the course of a stream or a river. However, the Project would increase the amount of impervious surface area on the Project site which, without compliance with regulatory requirements, has the potential to increase the volume and rate of stormwater runoff discharged from the Project site. The proposed Project includes an onsite stormdrain system to convey stormwater runoff to the proposed biotreatment areas (flow-through planter boxes). The onsite stormdrain system would also connect off site to the City's existing off-site stormdrain system at the intersection of Second Street and Addison Street and the intersection of Bolivar Drive and Bancroft Way. The proposed Project also includes a 12-inch stormdrain outfall underneath Bolivar Drive that would convey treated stormwater runoff from the Project site to the Model Yacht Club Basin. The onsite stormdrain systems would be sized to convey stormwater runoff from the design storm to reduce runoff such that onsite flooding would not occur. However, as detailed in the Berkeley Commons – Preliminary Hydrology Memorandum,[126] the proposed Project would reduce stormwater runoff by 0.62 cubic feet per second (cfs) during a 10-year storm and by 0.93 cfs during a 100-year storm event. The final grading and drainage plans for the Project are required to incorporate the detailed hydraulic analysis and must demonstrate that the proposed drainage facilities are designed in compliance with City of Berkeley standards and would not increase runoff during the 10-year or 100-year design storms or increase downstream flooding. Should it be determined during final design that the Project would potentially increase runoff rates from the site, additional detention facilities would be incorporated to reduce stormwater runoff to at or below existing conditions. The City of Berkeley Public Works Department would review the drainage plans to ensure they comply with City standards and to verify that the Project would not increase downstream flooding. To ensure that the final design is consistent with these requirements and that impacts related to on- or off-site flooding would be less than significant, the following mitigation measure shall be implemented.

Mitigation Measure HYD-1: The Project applicant shall submit a Final Hydrology Study to the City of Berkeley Public Works Department for review and approval prior to issuance of grading and building permits. The Final Hydrology Study shall be prepared consistent with the requirements of the Clean Water Program C.3 Stormwater Technical Guidance, Version 6.0 (October 2017), or subsequent guidance manuals. The Final Hydrology Study shall demonstrate that the on-site drainage facilities are designed and adequately sized to accommodate stormwater runoff from the 10-year and 100-year design storms so

[126] BKF Engineers. 2020. *Berkeley Commons – Preliminary Hydrology Memorandum.* December 23.

that peak flow of stormwater from the project site would not exceed existing conditions. The City shall verify that the drainage facilities specified in the Final Hydrology Study are incorporated into the final project design.

Storm Drain Capacity. As described above, stormwater runoff from the Project site would discharge to the Model Yacht Club Basin via a proposed 12-inch stormdrain pipe. Additionally, as specified in Mitigation Measure HYD-1, the final hydrology and hydraulic analysis would demonstrate that onsite stormwater drainage systems would be designed to convey the 10-year and 100-year design storms so that the capacity of the proposed stormdrain system would not be exceeded during a design storm. With implementation of Mitigation Measure HYD-1, impacts related to exceedance of stormdrain capacity would be less than significant.

As described above under Section 3.10.a, the proposed Project would comply with all applicable NPDES regulations and City COAs, including the Construction General Permit and MRP. Construction and operational BMPs would be implemented to reduce pollutants of concern in stormwater runoff from the Project site. Additionally, groundwater dewatering would comply with the requirements of the City's Toxics Management Division to ensure that dewatering activities do not introduce pollutants into surface waters. Compliance with existing regulations would ensure that potential impacts related to additional sources of polluted runoff would be less than significant.

Flood Flows. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) No 06001C0056H,[127] the majority of the Project site is within Zone X, Areas of Minimal Flood Hazard. Zone X are areas outside of 0.2 percent annual chance flood (outside of the 500-year floodplain). Specifically, the majority of the Project site is elevated approximately 10 to 15 feet above Bolivar Drive, which is outside of the 100-year flood hazard area. However, there is a small portion of the Project site (the existing parking lot) at the northwestern corner that falls within Special Flood Hazard Area Zone AE, which is defined as areas subject to inundation by the 1 percent annual change flood (100-year floodplain) with base flood elevations shown. According to the FEMA FIRM, the base flood elevation is 10 feet NAVD88.

The northwestern corner of Building A would be located in a 100-year floodplain (Zone AE). BMC Section 17.12.090, Standards of Construction, sets design standards for developments within a special flood hazard area. All new non-residential structures within a Zone AE 100-year floodplain must meet the following requirements listed in BMC Section 17.12.090(C)(2):

1) The lowest floor, including basement, elevated to or above the base flood elevation OR

2) Be floodproofed, together with attendant utility and sanitary facilities, below the recommended elevation (listed as item 1 above), so that the structure is watertight with walls substantially impermeable to the passage of water;

[127] Federal Emergency Management Agency. 2018. Flood Insurance Rate Map (FIRM) No. 06001C0056H. Website: msc.fema.gov/portal/search?AddressQuery=600%20Addison%20Street%2C%20Berkeley%2C%20CA#searchresultsanchor (accessed July 2020).

3) Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and

4) Be certified by a registered civil engineer or architect that the Municipal Code standards for development within a floodplain are satisfied. Such certification shall be provided to the Floodplain Administrator.

The first floor of Building A would be located at an elevation of 12.39 feet NAVD88,[128] which is elevated above the base flood elevation of 10 feet NAVD88. Because the proposed Project is located above the base flood elevation, the Project would comply with the requirements of BMC Section 17.12.090(C)(2). Additionally, the Project would be required to process a Conditional Letter of Map Revision based on fill (CLOMR-F) during final design and a Letter of Map Revision based on fill (LOMR-F) upon Project completion through the City and FEMA. A CLOMR is FEMA's comment on the potential floodplain encroachment of a proposed project, and helps to ensure that the project is compliant with the National Flood Insurance Project. A CLOMR does not revise an effective FIRM; instead, it indicates whether the Project, if built as proposed, would be recognized by FEMA. An LOMR is FEMA's modification to an effective FIRM. The CLOMR-F and LOMR-F process is applicable to properties elevated out of a floodplain through the placement of fill. The CLOMR-F and LOMR-F would ensure that the FEMA FIRM reflects the changes to the floodplain that would result from Project implementation. With compliance with the BMC and FEMA regulations governing development within a 100-year floodplain, potential impacts related to impeding or redirecting flood flows would be less than significant.

Although the Project site is not anticipated to be inundated from sea level rise by the year 2040, the Project site has a medium risk of being affected by sea level rise by this time.[129] Sea level rise combined with a storm surge may increase the extent of flooding during a 100-year storm along the western Project boundary.[130] Once the tidal tubes are repaired and tides at Aquatic Park are permanently regulated via connection to San Francisco Bay as part of the second phase of the Aquatic Park Tide Tube Cleaning and Investigation Project, the Project site is not anticipated to be impacted by sea level rise. However, even if water levels at Aquatic Park are not regulated in the future, the lowest floor of the proposed buildings would be elevated more than 2 feet above base flood levels during the worst case predicated sea level rise scenario in the year 2100, as documented in the Sea Level Rise Summary prepared for the Project.[131] As such, even with consideration of

[128] According the Project plans, the first floor of Building A is at an elevation of 6.5 feet. The Project plans reference the City of Berkeley Datum, which is calibrated at 5.89 feet lower than the NAVD88 Datum which FEMA references. As such, the first floor of Building A is at elevation +6.5 feet relative to the City of Berkeley Datum, which equates to 12.39 feet NAVD88.

[129] Climate Central, Inc. 2020. Coastal Risk Screening Tool. Website: coastal.climatecentral.org/map/12/-117.0358/32.5017/?theme=sea_level_rise&map_type=coastal_dem_comparison&contiguous=true&elevation_model=best_available&forecast_year=2050&pathway=rcp45&percentile=p50&return_level=return_level_1&slr_model=kopp_2014 (accessed October 2020).

[130] San Francisco Bay Conservation and Development Commission. Adapting to Rising Tides Bay Shoreline Flood Explorer. Website: explorer.adaptingtorisingtides.org/explorer (accessed May 2020).

[131] Aetelier Ten. 2020. *Sea Level Rise Summary, Berkeley Commons.* June 15.

future sea level rise, the proposed buildings would be elevated above the 100-year floodplain and impacts related to impeding or redirecting flood flows would be less than significant.

d. In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to project inundation? ***(Less-Than-Significant Impact)***

As discussed above, the northwestern corner of the Project site is located within Special Flood Hazard Area Zone AE, which are areas subject to inundation during a 100-year storm event. Seiches are waves that are created in an enclosed body of water such as a bay, lake, or harbor and go up and down or oscillate and do not progress forward like standard ocean waves. Seiches are also referred to as standing waves and are triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunamis or tidal influence. The height and frequency of seiches are determined by the strength of the triggering factor(s) and the size of the basin. Aquatic Park includes three enclosed water bodies (lagoons); the nearest Main Lagoon is located approximately 60 feet directly west of the Project site. A tsunami is a series of ocean waves generated by earthquakes resulting in sudden displacements in the sea floor or volcanic activity. Like seiches, tsunami waves vary in frequency and height and are influenced by the magnitude of the earthquake or volcanic eruption. According to the Tsunami Inundation Map for Emergency Planning, Oakland West Quadrangle, the western portion of the Project site is within a tsunami inundation area.[132] According to the Geotechnical Investigation Report prepared for the proposed Project, a seiche or tsunami originating from the Pacific Ocean would lose much of its energy passing through San Francisco Bay. However, there is a high potential for the western portion of the Project site to be inundated due to tsunami or seiche. The eastern portion of the Project site is elevated 15 to 25 feet above mean sea level; therefore there is a low potential for that portion of the site to be inundated from seiche or tsunami.

As detailed above, the majority of the Project site is not subject to inundation and there would be no risk of release of pollutants from inundation. However, the western portion of the Project site is subject to inundation. Hazardous materials (e.g., oil, grease, fuels, paint) would be transported and used onsite for proposed construction activities. However, Project construction would comply with the requirements of the Construction General Permit, including preparation of a SWPPP and implementation of Good Housekeeping BMPs. Good Housekeeping BMPs would include proper storage and handling of hazardous materials to prevent spills, leaks, and discharge of pollutants into receiving waters. Additionally, the SWPPP would specify the locations for hazardous material storage, which would likely be placed outside of the areas subject to flooding to further reduce the potential for release of pollutants from inundation.

During operation, hazardous materials (e.g., laboratory chemicals and wastes) would be stored and used on the Project site. However, the proposed uses would be elevated above the base flood elevation and not subject to inundation. Additionally, the materials used onsite would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. These materials would not be stored uncontained or stored

[132] California Emergency Management Agency. 2009. California Geological Survey, University of Southern California, State of California, and County of Alameda. Tsunami Inundation Map for Emergency Planning, Oakland West Quadrangle. July 31. Available online at: www.conservation.ca.gov/cgs/Documents/Tsunami/Maps/Tsunami_Inundation_OaklandWest_Quad_Alameda.pdf (accessed May 2020).

outside in areas subject to inundation. Because any hazardous materials used on site would be properly stored and contained in areas not subject to inundation, impacts related to release of pollutants in the event of inundation from flooding would be less than significant.

e. Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ***(Less-Than-Significant Impact)***

The Project site is within the jurisdiction of the San Francisco RWQCB. The RWQCB adopted a Water Quality Control Plan (Basin Plan)[133] that designates beneficial uses for all surface and groundwater within its jurisdiction and establishes the water quality objectives and standards necessary to protect those beneficial uses. As discussed in detail above in Section 3.10.a, the proposed Project would comply with existing NPDES requirements and would implement construction and operational BMPs to reduce pollutants of concern in stormwater runoff. Additionally, during construction, any dewatered groundwater would comply with the requirements of the Toxics Management Division. Compliance with these regulatory requirements would ensure that proposed Project would not degrade or alter water quality, cause the receiving waters to exceed the water quality objectives, or impair the beneficial use of receiving waters. As such, the proposed Project would not result in water quality impacts that would conflict with the RWQCB Basin Plan. Construction and operational impacts related to a conflict with the Basin Plan would be less than significant, and no mitigation is required.

The Sustainable Groundwater Management Act (SGMA), which was enacted in September 2014, requires governments and water agencies of high- and medium-priority basins to halt overdraft of groundwater basins. The SGMA requires the formation of local groundwater sustainability agencies, which are required to adopt Groundwater Sustainability Plans to manage the sustainability of the groundwater basins. The Project site is located within the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin, which is managed by EBMUD. The East Bay Plain Subbasin is identified by the California Department of Water Resources as a medium priority basin and is therefore subject to the requirements of SGMA and must prepare a Groundwater Sustainability Plan by January 2022.[134] EBMUD is in the process of developing a Groundwater Sustainability Plan as required by SGMA. Because there is not an existing sustainable groundwater management plan, the proposed Project would not conflict with the implementation of a sustainable groundwater management plan. Regardless, as detailed in Section 3.10.b, any groundwater extracted during groundwater dewatering during construction would be minimal and would not interfere with the sustainable management of the groundwater basin. Additionally, Project operation would not require groundwater extraction. Although the Project would increase water use, municipal water would not be supplied from the groundwater basin. For these reasons, the proposed Project would not conflict with or obstruct the implementation of a sustainable groundwater management plan and this impact would be less than significant.

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[133] San Francisco Bay Regional Water Quality Control Board. 2017. *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin.* May 4.

[134] California Department of Water Resources. SGMA Basin Prioritization Dashboard. Website: gis.water.ca.gov/app/bp-dashboard/final (accessed May 2020).

3.11 LAND USE AND PLANNING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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?	☐	☐	☒	☐

a. Would the Project physically divide an established community? ***(Less-Than-Significant Impact)***

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway though an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The Project site is located in West Berkeley and occupies the block bordered to the north by Addison Street and commercial uses, to the east by the UPRR rail corridor and commercial uses; to the south by Bancroft Way and manufacturing and light-industrial uses; and to the west by Aquatic Park and the I-580/80 corridor. The site is surrounded by a mix of commercial, residential, manufacturing, light industrial and recreational uses. The Project site is currently developed with a mix of warehouse, R&D, and manufacturing buildings and a soil and mulch storage facility. The proposed Project would result in redevelopment of the site with an R&D campus and associated on- and off-site improvements. Redevelopment of the Project site with the proposed uses would represent a general continuation of the type, scale, and intensity of development within the Project vicinity. Building heights would not exceed 45 feet and taller Project elements would be set back from the surrounding roadways and from nearby Aquatic Park, similar to existing site conditions.

In addition, the configuration of the existing city block that the site occupies would not be altered. Currently, vehicular access to the site is provided via driveways along Addison Street, Bolivar Drive, and Bancroft Way. With development of the proposed Project, primary access to the parking garages for Buildings A and B would be provided via Addison Street and Bancroft Way, respectively and no vehicular access would be provided via Bolivar Drive. Secondary access to the loading areas at the rear of the site would be provided by service access points on Addison Street and Bancroft Way.

Off-site improvements include restriping and reconfiguration of Bolivar Drive from a two-way roadway to a one-way roadway traveling in the southbound direction between Addison Street and Bancroft Way, as well as streetscape improvements and pedestrian/bicycle facility enhancements along the length of Bolivar Drive from Addison Street to where it ends at Dreamland Playground and the Aquatic Park Path continues through the open space area. Bolivar Drive would continue to serve as a park access drive. The proposed Project would also result in installation of a raised crosswalk

located midblock between Addison Street and Bancroft Way. These improvements would improve access and circulation in the area and connect both the Project site and surrounding areas to the recreational facilities within Aquatic Park. In this way, the proposed Project would not physically divide an established community, but rather would enhance access in the area.

b. Would the Project 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? ***(Less-Than-Significant Impact)***

The Project site is designated Manufacturing (M) in the City's General Plan Land Use Diagram. The City's Zoning map classifies the Project site as Mixed Use-Light Industrial (MULI).[135]

Following is an evaluation of the Project's consistency with applicable goals and policies of the City's General Plan, West Berkeley Plan, and Zoning Ordinance. Other applicable plans, policies, ordinances, and regulatory requirements adopted for the purpose of mitigating environmental effects, and the Project's consistency with these measures, are addressed in each topical section of this Initial Study, as appropriate. In reviewing this section, it is important to understand that the determination of whether a project is consistent with a specific policy can be subjective, and that consistency determinations are best made with a broad understanding of the often-competing policy objectives in a planning document. As a result, policy consistency determinations are ultimately made by the local decision-making body. As previously discussed, the City of Berkeley is the lead agency for environmental review. Therefore, the City's Zoning Adjustments Board, in coordination with the Design Review Committee, would determine the Project's consistency with the City's applicable plans and policies. The analysis in this section is intended to provide decision-makers with a list of the goals and policies that are pertinent to the Project and the Project area, and a recommendation regarding whether or not the proposed Project would directly conflict with any of those relevant goals and policies. These recommendations are intended to supplement decision-makers' own understanding of the various policy considerations.

It should be noted that according to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Policy conflicts are considered to be environmental impacts only when they would result in direct physical impacts or where those conflicts relate to avoiding or mitigating environmental impacts. As such, associated physical environmental impacts are discussed in this Initial Study under specific topical sections.

General Plan. The Berkeley General Plan is a comprehensive, long-range, and internally consistent statement of policies for the development and preservation of Berkeley. The General Plan identifies seven major goals: (1) Preserve Berkeley's unique character and quality of life; (2) Ensure that Berkeley has an adequate supply of decent housing, living-wage jobs, and businesses providing basic goods and services; (3) Protect local and regional environmental quality; (4) Maximize and improve citizen participation in municipal decision-making; (5) Create a sustainable Berkeley; (6) Make Berkeley a disaster-resistant community, that can survive, recover from, and thrive after a disaster; and (7) Maintain Berkeley's infrastructure, including streets, sidewalks, buildings, and facilities;

[135] Berkeley, City of. 1999. *Official Zoning Map of the City of Berkeley, California*. March 18.

storm drains and sanitary sewers; and open space, parks, pathways, and recreation facilities.[136] The Plan's goals are implemented through decisions and actions consistent with the objectives, policies, and actions of each of the nine Elements.

The Project site is designated Manufacturing in the General Plan Land Use Diagram. In Berkeley, this area is intended to maintain and preserve areas for manufacturing and industrial uses necessary for a multi-faceted economy and job growth. Appropriate uses for West Berkeley include: light manufacturing, general manufacturing, retailing, offices, residences, and arts and crafts, along with other uses. Within these areas, building intensity will generally range from a FAR of less than 1.0 to 2.0.

R&D and Office uses are consistent with the overall intent of the Manufacturing land use designation for the West Berkeley area. Building A would have a FAR of approximately 1.28, and Building B would have an FAR of approximately 1.25. The proposed Project would be compatible with the intensity of development envisioned in the General Plan for properties with the Manufacturing land use designation.

Applicable policies of the General Plan are listed below, followed by a description of the proposed Project's general consistency with each group of policies.

- Policy LU-1: Community Character. Maintain the character of Berkeley as a special, diverse, unique place to live and work.
- Policy LU-3: Infill Development. Encourage infill development that is architecturally and environmentally sensitive, embodies principle of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale.
- Policy LU-34: Industrial Protections. Protect Industrial uses in West Berkeley.
- Policy UD-3: Regulation of Neighborhood Character. Use regulations to protect the character of neighborhoods and districts, and respect the particular conditions of each area.
- Policy UD-16: Context. The design and scale of new or remodeled buildings should respect the built environment in the area, particularly where the character of the built environment is largely defined by an aggregation of historically and architecturally significant buildings.
- Policy UD-17: Design Elements. In relating a new design to the surrounding area, the factors to consider should include height, massing, materials, color, and detailing or ornament.
- Policy UD-18: Contrast and Cohesiveness. The overall urban experience should contain variety and stimulating contrasts achieved largely through contrast between different areas each of which is visually cohesive.

[136] Berkeley, City of. 2001, op. cit.

- Policy UD-19: Visually Heterogeneous Areas. In areas that are now visually heterogeneous, a project should be responsive to the best design elements of the area or neighborhood.

- Policy UD-22: Regulating New Construction and Alterations. Regulate new construction and alterations to ensure that they are individually well-designed and that they are so designed and located as to duly respect and where possible enhance the existing built environment.

- Policy UD-23: Design Review. Ensure that the design review process ensures excellence in design and that new construction and alterations to existing buildings are compatible with the best elements of the character of the area.

- Policy UD-24: Area Character. Regulate new construction and alterations to ensure that they are truly compatible with and, where feasible, reinforce the desirable design characteristics of the particular area they are in.

- Policy T-16: Access by Proximity. Improve access by increasing proximity of residents to services, goods, and employment centers.

The proposed Project would result in redevelopment of an underutilized site with R&D and Office uses. The Project would increase the number of employees on the site and contribute to job growth within the research and development sector and within West Berkeley. In addition, the proposed Project would include sidewalk and streetscape improvements and a plaza at the center of the site to improve pedestrian access to and within the vicinity of the site. The proposed Project would conform to the type and intensity of development envisioned in the General Plan for this area. Based on the above, the proposed Project is not expected to be inconsistent with General Plan policies that relate to urban design and character.

- Policy EM-29: Street and Park Trees. Maintain, enhance, and preserve street and park trees to improve the environment and provide habitat.

- Policy UD-9: Trees. Wherever feasible and appropriate, tree replacement should emphasize maintaining historic planting patterns and native species and be consistent with the City of Berkeley 1990 Street Tree Policy or subsequent tree policies.

- Policy UD-26: Pedestrian-Friendly Design. Architecture and site design should give special emphasis to enjoyment by, and convenience and safety for, pedestrians.

- Policy UD-27: Relation to Sidewalk. Projects generally should be designed to orient the main entrance toward the public sidewalk, not a parking lot, and avoid confronting the sidewalk with a large windowless wall or tall solid fence.

- Policy UD-30: Planting. Ensure that, where feasible, new developments respect and contribute to the urban landscape by retaining existing onsite trees and/or, if appropriate, planting suitable new ones onsite or in the street right-of-way.

- Policy OS-9: Aquatic Park. Make Aquatic Park more accessible and usable as a neighborhood park.

- Policy OS-12: Adjacent Uses. Ensure that land adjacent to parks is sensitively developed so that shade on the park is minimized, safe access is maintained, and views are not significantly reduced.

- Policy OS-13: Waterfront Open Space and Recreational Facilities. Implement the 1986 Waterfront Plan policies to establish the waterfront as an area primarily for recreational, open space, and environmental uses, with preservation and enhancement of beaches, marshes, and other natural habitats.

The proposed Project may include a number of off-site improvements within and immediately adjacent to the western edge of Bolivar Drive along the Project site frontage, as described in Section 1.0, Project Information. Among these improvements would be the installation of a new accessible bicycle and pedestrian pathway that would vary in width but would average approximately 14 feet immediately adjacent to and west of Bolivar Drive, and the installation of a raised pedestrian crosswalk located midblock between Addison Street and Bancroft Way. All landscaping would be planted and irrigated compliant with the State's Model Water Efficient Landscaping Ordinance and Bay-friendly landscaping requirements. A total of 56 of the existing 61 trees on the site would be removed and approximately 84 new trees would be planted on the site, including along the Addison Street and Bancroft Way street frontages and within the site interior along the property boundaries with Bolivar Drive. New trees would be a minimum of 24-inch box size. Based on the above, the proposed Project is not expected to be inconsistent with General Plan policies that relate to streetscape design and open space.

West Berkeley Plan. The West Berkeley Plan, adopted in 1993, was a long range plan for West Berkeley intended to guide the development of West Berkeley until at least the year 2005. West Berkeley is defined as the area between San Pablo Avenue (incorporating both sides of the street) and the Eastshore Freeway. The West Berkeley Plan sets forth the City's key land use, environmental, economic development, transportation, housing and social services, and physical form (urban design, historic preservation, and open space) policies for West Berkeley.

The Project site is located near the center of the West Berkeley Plan Area, along the western edge. The Project site is located within the West Berkeley Plan's MULI District. This district is the largest in the West Berkeley Plan area, besides purely residential, covering approximately 300 acres. At the time that the West Berkeley Plan was prepared, it contained the highest employment of any district, accounting for approximately 44 percent of the jobs in the West Berkeley area.[137] The proposed Project furthers the goals of the MULI district with the inclusion of laboratory, manufacturing, and office uses, and would serve as an employment center within the district.

The three main purposes of the West Berkeley Plan are to: (i) Maintain the full range of land uses and economic activities – residences, manufacturing, services, retailing, and other activities – in West Berkeley; (ii) Maintain the ethnic and economic diversity of West Berkeley's resident

[137] Berkeley, City of. 1993. *West Berkeley Plan.*

population; and (iii) Maintain and improve the quality of urban life – including environmental quality, public and private service availability, transit and transportation, and aesthetic and physical qualities – for West Berkeley residents and workers. The proposed Project would contribute to the full range of land uses and economic activities in the area by providing space for R&D and Office uses within the site. The proposed Project would not affect ethnic and economic diversity of West Berkeley's resident population as it would contribute a wide variety of job types that are already present in West Berkeley, including management, professional, and administrative. The Project would create jobs and improve circulation to and adjacent to the site. The proposed Project would improve the visual quality of the current site by removing the soil and mulch management facility, incorporating the building design into the topography of the site, and by providing landscaping, as well as off-site improvements along Bolivar Drive and Bancroft Way. Therefore, the proposed Project would be consistent with the purposes of the West Berkeley Plan.

The proposed Project is generally consistent with the applicable policies in the West Berkeley Plan. Applicable policies of the West Berkeley Plan are listed below, followed by a description of the proposed Project's general consistency with each group of policies.

- **Land Use Goal 1**: Over the economically active area of West Berkeley, provide for a continued economic and land use mix, incorporating manufacturing, other industrial, retail and office/ laboratory uses, to benefit Berkeley residents and businesses economically, benefit the City government fiscally, and promotes the varied and interest character of the area.

- LU Policy 1-B: Providing, through zoning districts, development standards, and other tools, space and incentives for expansion of manufacturing firms, particularly the growing light manufacturing sector.

- LU Policy 1-D: Providing space for, and designating appropriate locations for, office, service, and laboratory businesses, particularly growing Berkeley based businesses which are particularly suited to West Berkeley's physical environment.

- **Land Use Goal 2**: Channel development - both new business and residences and the expansion of existing businesses - to districts which are appropriate for the various existing elements of the West Berkeley land use mix.

- LU Policy 2-C: Create a Light Manufacturing district which allows a wide range of light manufacturers to continue to operate and expand and limits loss of their spaces to other uses, while providing an opportunity for office development where it will not unduly interfere with light manufacturing uses, and for laboratory development in appropriate locations.

- **Land Use Goal 4**: Assure that new development in any sector is of a scale and design that is appropriate to its surroundings, while respecting the genuine economic and physical needs of the development.

- **Economic Development Goal 4**: Continue to support the growth of advanced technology manufacturing (such as biotechnology) and advanced technology services (such as research laboratories) in appropriate locations, under appropriate environmental safeguards.

- ED Policy 4-A: Provide assistance to advanced technology firms to help them establish or expand businesses in appropriate locations.

The proposed Project would result in redevelopment of the site with R&D and Office uses, providing economic growth and new job opportunities within the life sciences sector in West Berkeley. Approximately 56 percent (approximately 258,620 square feet) of the space would be R&D use, with the remaining 44 percent (approximately 205,202 square feet) occupied by either Office or R&D space. These uses allow for the support and growth of the advanced technology services (such as R&D). The proposed Project would generally be consistent with the scale and design of land uses within the immediate vicinity, including mixed commercial and retail to the north, light industrial and manufacturing to the east, and manufacturing and R&D to the south. The Project site is an appropriate location for the proposed development. Therefore, the proposed Project supports the goals and policies in the Land Use and Economic Development sections of the West Berkeley Plan.

- **Physical Form Goal 5**: Development on major sites of one acre or more should be both internally cohesive and sensitively designed on the site's publicly used edges.

- PF Policy 5.1: Development on major sites should use building scale, architecture, building placement, landscaping, and other site elements to create the sense of a cohesive development which is integrated with its surroundings.

- PF Policy 5.2: Such major projects should--to the greatest degree possible--reinforce the existing street pattern, development pattern, and overall fabric of an area, rather than being isolated from these patterns.

- PF Policy 5.3: Major development projects should - to the greatest degree possible - be compatible with existing development on the edges of their sites, particularly on those edges which are heavily used by the public.

- **Physical Form Goal 9**: Provide an accessible, aesthetically-pleasing network of green spaces and corridors - that is functional for varied types of users - to visually and physically link parks, creeks, and shoreline to residential and commercial, and light industrial uses.

- PF Policy 9.2: Develop pathways and protected lanes for bikes which link to the existing bicycle lanes in Berkeley and link to parks, commercial areas, and community facilities.

- PF Policy 9.3: Provide sidewalks for pedestrians which provide adequate, safe access to parks.

- PF Policy 9.9: Improve physical and visual access to the Marina area, to Aquatic Park, and to shoreline parks.

The approximately 8.4-acre site would be developed as a campus-like environment, whether occupied by a single user or multiple users/tenants. Predominant vehicular access to the site would not be provided by Bolivar Drive, which would continue as a park access driveway. Streetscape improvements along the Project site frontage and adjacent to Aquatic Park, including public pathways, landscaping, and private common areas would physically and visually connect the

development to the surrounding area while improving pedestrian connections and maintaining an appropriate buffer with the adjacent recreational and open space uses at Aquatic Park. Therefore, the proposed Project supports the goals and policies in the Physical Form section of the West Berkeley Plan.

Zoning Ordinance. The City of Berkeley City Zoning Ordinance (Zoning Ordinance) implements the policies of the General Plan and other City plans, policies, and ordinances. The Zoning Ordinance divides the City into districts, each of which is assigned different regulations. These regulations direct the construction, nature, and extent of building use.

The Project site is located within the MULI zoning district (BMC Chapter 23E.80). The primary purposes of the MULI zoning district are to: (1) implement the West Berkeley Plan's designation of a Light Manufacturing District; (2) encourage development of a mixed use-light industrial area for a range of compatible uses; (3) encourage development of an area where light manufacturers can operate free from the economic, physical and social constraints caused by incompatible uses; (4) encourage the creation and continuation of well paid jobs which do not require advanced degrees; (5) provide for the continued availability of manufacturing and industrial buildings for manufacturing uses, especially of larger spaces needed by medium sized and larger light manufacturers; (6) provide opportunities for office development when it will not unduly interfere with light manufacturing uses and/or the light manufacturing building stock; (7) provide the opportunity for laboratory development in appropriate locations; (8) support the development of businesses which contribute to the maintenance and improvement of the environment; (9) allow on site ancillary retail as a tool to maintain and enhance the economic viability of manufacturers in the district; and (10) maintain and improve the quality of the West Berkeley environment, while allowing the lawful and reasonable operation of light industrial uses.

Development standards for the MULI zoning district are specified in the Zoning Ordinance. There is a maximum FAR of 2.0 and a maximum building height of 45 feet. The proposed Project would redevelop the site at a FAR of approximately 1.28 for Building A and 1.25 for Building B and proposed buildings would not exceed 45 feet in height. The MULI zoning district does not include minimum building setbacks. The Project applicant is requesting the following permits:

- Use Permit, under BMC Section 23C.08.050, to allow demolition of non-residential buildings;
- Use Permit, under BMC Section 23E.80.050.C, to allow construction of 20,000 or more gross square feet of new floor area;
- Use Permit, under BMC Section 23E.80.030, to establish more than 30,000 square feet of Office use;
- Use Permit, under BMC Section 23E.80.045.B, to change more than 25 percent of the space used for manufacturing to another protected use;
- Administrative Use Permit, under BMC Section 23E.80.045.A.2, to change up to 20,000 square feet of Warehouse to R&D use;

- Administrative Use Permit, per BMC Section 23E.80.030, to establish more than 30,000 square feet of R&D use; and
- Administrative Use Permit, per BMC Section 23E.04.020, to allow rooftop equipment projections to exceed the height limit up to 15 percent of the building footprint.

The existing MULI zoning on the Project site allows for manufacturing and wholesale trade; other industrial uses; automobile and other vehicle oriented uses; parking, outdoor, and exterior services; retail sales, personal, and household services; and many other types of uses.[138] The proposed Project would result in redevelopment of the site with R&D and Office uses and would be consistent with the overall standards and intent of the MULI zoning designation.

The Zoning Ordinance contains development standards that may be modified with a Use Permit upon finding that the requested modification is not detrimental. Such modifications are typically requested as part of similar development projects and are not considered to be in conflict with the Zoning Ordinance. The City's Zoning Adjustments Board would consider granting the Master Use Permit and other permits as it reviews the proposed Project. Therefore, the proposed Project would be consistent with the City's Zoning Ordinance.

Given the above, the proposed Project would not obviously conflict with any policy or regulation adopted for the purpose of mitigating an environmental effect, and this impact would be less than significant.

[138] Berkeley, City of. 2016b. *BMC Table 23E.80.030*, as amended. July.

3.12 MINERAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. 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?	☐	☐	☐	☒
b. 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?	☐	☐	☐	☒

*a. Would the Project 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? **(No Impact)***

The Project site is located within an urban area on an infill site. There are no known mineral resources within or in the vicinity of the Project site.[139] The proposed Project would not result in the loss of availability of a known mineral resource of value to the region or residents of the State, and no impact related to the loss of mineral resources would occur.

*b. Would the Project 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? **(No Impact)***

Please refer to Section 3.12.a. The proposed Project would not result in the loss of availability of any known locally-important mineral recovery sites.

[139] Berkeley, City of. 2001, op. cit.

3.13 NOISE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the 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 2 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?	☐	☐	☐	☒

Noise is usually defined as unwanted sound, and consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on dBA. CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, the City of Berkeley.

Certain land uses are considered more sensitive to noise than others. Examples of these land uses include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The Project site is surrounded by a mix of uses within an urban area of the City. The Project site is located within West Berkeley, which is characterized by a mix of uses, including manufacturing, light industrial, office, residential, and commercial/restaurant uses. The closest sensitive receptors are mixed-use (multi-family) residential uses located approximately 65 feet north of the Project site.

The City of Berkeley General Plan addresses excessive noise in the Environmental Management Element.[140] Major noise sources in Berkeley include transportation, industrial plant noise, and activities associated with neighborhoods. The General Plan includes a map of the existing noise levels throughout the City. According to the General Plan, the Project site is exposed to noise levels reaching 75 dBA L_{dn}. The General Plan also provides policies and actions to protect the community from excessive noise levels. Policies and actions applicable to the proposed Project include the following:

- Policy EM-43: Noise Reduction. Reduce significant noise levels and minimize sources of noise.
- Policy EM-44: Noise Prevention and Elimination. Protect public health and welfare by eliminating existing noise problems where feasible and by preventing significant future degradation of the acoustic environment.
- Policy EM-45: Traffic Noise. Work with local and regional agencies to reduce local and regional traffic, which is the single largest source of unacceptable noise in the city.
- Policy EM-46: Noise Mitigation. Require operational limitations and all feasible noise buffering for new uses that generate significant noise impacts near residential, institutional, or recreational uses.
- Policy EM-47: Land Use Compatibility. Ensure that noise-sensitive uses, including, but not limited to, residents, child-care centers, hospitals, and nursing homes, are protected from detrimental noise levels.
- Action EM-47-A: Noise-sensitive development proposals should be reviewed with respect to the Land Use Compatibility Guidelines below [See Table 3.G].

  If the noise level is within the “normally acceptable” level, noise exposure would be acceptable for the intended land use. Development may occur without requiring an evaluation of the noise environment unless the use could generate noise impacts on adjacent uses.

[140] Berkeley, City of. 2001, op. cit.

If the noise level is within the "conditionally acceptable" level, noise exposure would be conditionally acceptable; a specified land use may be permitted only after detailed analysis of the noise environment and the Project characteristics to determine whether noise insulation or protection features are required. Such noise insulation features may include measures to protect noise-sensitive outdoor activity areas (e.g., at residences, schools, or parks) or may include building sound insulation treatments such as sound-rated windows to protect interior spaces in sensitive receptors.

If the noise level is within the "normally unacceptable" level, analysis and mitigation are required. Development should generally not be undertaken unless adequate noise mitigation options have been analyzed and appropriate mitigations incorporated into the Project to reduce the exposure of people to unacceptable noise levels.

If the noise level is within the "clearly unacceptable" level, new construction or development should not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the Project to reduce exposure of people to unacceptable noise levels.

Table 3.G: General Plan Noise and Land Use Compatibility Guidelines

Land Use Category	Exterior Noise Exposure (L_{dn})					
	55	60	65	70	75	80
Residential, Hotels, and Motels						
Outdoor Sports and Recreation, Neighborhood Parks and Playgrounds						
Schools, Libraries, Museums, Hospitals, Personal Care, Meeting Halls, Churches						
Office Buildings, Business Commercial and Professional						
Auditoriums, Concert Halls, Amphitheaters						

NORMALLY ACCEPTABLE: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
CONDITIONALLY ACCEPTABLE: Specific land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features have been incorporated.
UNACCEPTABLE: New construction or development should generally not be undertaken unless all feasible noise mitigation options have been analyzed and appropriate mitigations incorporated into the Project to reduce exposure of people to unacceptable noise levels.

Source: City of Berkeley General Plan (July 2001).

BMC Title 13: Public Peace, Morals and Welfare, Chapter 13.40 (Community Noise) addresses noise impacts. The ordinance establishes exterior and interior noise standards at receiving land uses and construction activity noise regulations as included below.

The City's exterior and interior noise limits are shown in Table 3.H. The hourly noise level standards vary based on the receiving land use type and the time period. In order to assess intermittent or

maximum noise levels, the time weighted noise level additions presented in BMC Section 13.40.050 and described in further detail below, should be applied.

Table 3.H: Exterior and Interior Noise Limits, BMC Section 13.40.050

Zoning District	Time Period	Noise Level (dBA)
Exterior Noise Limits		
R-1, R-2, R-1A, R-2A, and ESR	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	55 45
R-3 and above	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	60 55
Commercial	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	65 60
Industry	Anytime	70
Interior Noise Limits		
All	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	45 40

Source: City of Berkeley Municipal Code Tables 13.40-1 and 13.40-2 (2014).

The maximum noise levels vary based on the receiving land use type and the time period. The ordinance also limits noise generated by construction. The ordinance restricts construction activities to weekdays between the hours of 7:00 a.m. and 7:00 p.m. and on weekdays and holidays, between 9:00 a.m. and 8:00 p.m., except for emergency work.

The following noise standards are outlined in BMC Chapter 13.40.050:

A. Maximum permissible sound levels shall be determined by the zoning district of the property subject to the noise, not the property from which the noise originates.

   1. The noise standards for the various categories of land use in Table 6 [of BMC Chapter 13.40.050 and shown in Table 3.H of the Initial Study Checklist] shall, unless otherwise specifically indicated in other codes, apply to all such property within a designated zone.

   2. No person shall operate or cause to be operated any source of sound at any location within the incorporated City or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the sound level when measured on any other property to exceed:

      a. The noise standard for that land use as specified in Table 6 [Table 3.H of the Initial Study] for a cumulative period of more than 30 minutes in any hour; or

      b. The noise standard for that land use as specified in Table 6 [Table 3.H of the Initial Study] plus 5 dBA for a cumulative period of more than 15 minutes in any hour; or

      c. The noise standard for that land use as specified in Table 6 [Table 3.H of the Initial Study] plus 10 dBA for a cumulative period of more than 5 minutes in any hour; or

d. The noise standard for that land use as specified in Table 6 [Table 3.H of the Initial Study] plus 15 dBA for a cumulative period of more than 1 minute in any hour; or

e. The noise standard for that land use as specified in Table 6 [Table 3.H of the Initial Study] plus 20 dBA for any period of time.

The following interior noise standards are outlined in BMC Section 13.40.060:

1) No person shall operate or cause to be operated within a multi-family dwelling unit any source of sound or allow the creation of any noise which causes the sound level when measured inside a neighboring dwelling unit to exceed:

   a. The noise standard as specified in Table 6 [Table 3.H of the Initial Study] for a cumulative period of more than 5 minutes in any hour; or

   b. The noise standard as specified in Table 6 [Table 3.H of the Initial Study] plus 5 dBA for a cumulative period of more than one minute in any hour; or

   c. The noise standard as specified in Table 6 [Table 3.H of the Initial Study] plus 10 dBA for any period of time.

Section 13.40.070 of the BMC restricts construction activities to weekdays between the hours of 7:00 a.m. and 7:00 p.m. and on weekends and holidays between 9:00 a.m. and 8:00 p.m., except for emergency work. Construction activities are divided into two categories: mobile equipment and stationary equipment. Mobile equipment, as defined by BMC Section 13.40.070, includes sound levels for nonscheduled, intermittent, short-term operation of less than 10 days of jackhammers, drills, saws, sander grinder, and similar tools. Stationary equipment, according to BMC Section 13.40.070, would be repetitively scheduled and relatively long term operation for longer than 10 days. Equipment used during construction of the proposed Project would be considered stationary because construction would last longer than 10 days. Where technically and economically feasible, construction activities shall be conducted in such a manner that maximum sound levels at affected properties will not exceed those listed in Table 3.I below.

Table 3.I: Maximum Stationary Equipment Construction Noise Levels (dBA), BMC Section 13.40.070

	R-1, R-2 Residential	R-3 and above Multi-Family Residential	Commercial/ Industrial
Weekdays 7:00 a.m. to 7:00 p.m.	60	65	70
Weekends 9:00 a.m. to 8:00 p.m. and legal holidays	50	55	60

Source: City of Berkeley Municipal Code Table 13.40-4 (2014).

The West Berkeley Plan was developed in 1993 to reinforce the dynamic mix of industrial, office, arts and crafts, residential, retail and institutional activities in West Berkeley.[141] The Environmental Quality Element's goals and policies follow the strategies included in the Land Use and Transportation Elements and address five specific areas of concern, one of which is noise.

The West Berkeley Plan describes noise pollution as a problem of contamination of the ambient environment. The West Berkeley Plan aspires to reduce irritating noise by mitigating existing noise conflicts and preventing the development of future noise conflicts.[142] The following policies are included to work towards this goal and are applicable to the proposed Project:

- Policy 6.1: To the extent feasible, separate noise emitters from sensitive receptors.
- Policy 6.2: Develop performance standards for new uses.
- Policy 6.3: Investigate problem noise sources and develop appropriate solutions through negotiation or enforcement.
- Policy 6.5: Construct sound walls around freeways where feasible.

a. Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? ***(Less-Than-Significant Impact)***

The following describes how the short-term construction and long-term operational noise impacts of the proposed Project would be less than significant, according to the standards set forth above.

Short-Term (Construction) Noise Impacts. Project construction would result in short-term noise impacts on the nearby sensitive receptors. The closest sensitive receptors include the multi-family residential uses located approximately 65 feet north of the Project site. Project construction would result in short-term noise impacts on these receptors. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The entire construction duration is expected to occur for approximately 24 months. The level and types of noise impacts that would occur during construction are described below.

Short-term noise impacts would occur during grading and site preparation activities. Table 3.J lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the FHWA Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the Project area but would no longer occur once construction of the Project is completed.

141 Berkeley, City of. 1993, op. cit.
142 Ibid.

Table 3.J: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)	Maximum Noise Level (L_{max}) at 50 Feet[1]
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Pick-up Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Welder	40	73

Source: Roadway Construction Noise Model (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Maximum noise levels were developed based on Spec 721.560 from the Central Artery/Tunnel (CA/T) program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
L_{max} = maximum instantaneous sound level

Two types of short-term noise impacts could occur during construction of the proposed Project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site, which would incrementally increase noise levels on roads leading to the site. As shown in Table 3.J, there would be a relatively high single-event noise exposure potential at a maximum level of 84 dBA L_{max} with trucks passing at 50 feet.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction on the Project site. Construction is performed in discrete steps, or phases, each with its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on site. Therefore, the noise levels vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table 3.J lists maximum noise levels recommended for noise impact assessments for typical construction equipment, based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 87 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, including excavation and grading of the site, tends

to generate the highest noise levels because earthmoving machinery is the noisiest construction equipment. Earthmoving equipment includes excavating machinery such as backfillers, bulldozers, draglines, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full-power operation followed by 3 or 4 minutes at lower power settings.

As identified above, the Project site is approximately 65 feet from the closest noise-sensitive receptors (residential uses) located to the north across Addison Street. The 65-foot distance would decrease the noise level by 2.2 dBA compared to the noise level measured at 50 feet from the construction activity. Therefore, the closest off-site residences may be subject to short-term construction noise levels of 84.8 dBA L_{max} when construction is occurring at the northern Project site boundary.

According to the City of Berkeley Noise Ordinance (BMC Section 13.40.070), noise from construction activities is permitted to exceed the established maximum allowable noise performance standards, provided that the activities occur during the permissible hours for construction and all technically and economically feasible noise reduction measures are incorporated. Construction impacts at residential land uses, although permitted and exempted during the construction hours specified by the City, would exceed the suggested maximum noise levels for stationary sources as established by the City.

Implementation of the following standard conditions of approval would reduce construction noise impacts on the off-site nearby sensitive receptors and would require the applicant to implement all technically and economically feasible measures to reduce construction noise, consistent with the requirements of BMC Section 13.40.070.

> ***COA: Construction Noise Reduction Program.*** The applicant shall develop a site specific noise reduction program prepared by a qualified acoustical consultant to reduce construction noise impacts to the maximum extent feasible, subject to review and approval of the Zoning Officer. The noise reduction program shall include the time limits for construction listed above, as measures needed to ensure that construction complies with BMC Section 13.40.070. The noise reduction program should include, but shall not be limited to, the following available controls to reduce construction noise levels as low as practical:
>
> - Construction equipment should be well maintained and used judiciously to be as quiet as practical.
> - Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.
> - Utilize "quiet" models of air compressors and other stationary noise sources where technology exists. Select hydraulically or electrically powered equipment and avoid pneumatically powered equipment where feasible.

- Locate stationary noise-generating equipment as far as possible from sensitive receptors when adjoining construction sites. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.
- Prohibit unnecessary idling of internal combustion engines.
- If impact pile driving is required, pre-drill foundation pile holes to minimize the number of impacts required to seat the pile.
- Construct solid plywood fences around construction sites adjacent to operational business, residences or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.
- Erect temporary noise control blanket barriers, if necessary, along building facades facing construction sites. This mitigation would only be necessary if conflicts occurred which were irresolvable by proper scheduling. Noise control blanket barriers can be rented and quickly erected.
- Route construction related traffic along major roadways and away from sensitive receptors where feasible.

COA: Construction Noise Management - Public Notice Required. At least two weeks prior to initiating any construction activities at the site, the applicant shall provide notice to businesses and residents within 500 feet of the Project site. This notice shall at a minimum provide the following: (1) project description, (2) description of construction activities during extended work hours and reason for extended hours, (3) daily construction schedule (i.e., time of day) and expected duration (number of months), (4) the name and phone number of the Project Liaison for the Project that is responsible for responding to any local complaints, and (5) that construction work is about to commence. The liaison would determine the cause of all construction-related complaints (e.g., starting too early, bad muffler, worker parking, etc.) and institute reasonable measures to correct the problem. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval.

COA: Construction Phases. The applicant shall provide the Zoning Officer with a schedule of major construction phases with start dates and expected duration, a description of the activities and anticipated noise levels of each phase, and the name(s) and phone number(s) of the individual(s) directly supervising each phase. The Zoning Officer or his/her designee shall have the authority to require an onsite meeting with these individuals as necessary to ensure compliance with these conditions. The applicant shall notify the Zoning Officer of any changes to this schedule as soon as possible.

COA: Construction Hours. Construction activity shall be limited to between the hours of 7:00 a.m. and 6:00 p.m. on Monday through Friday, and between 9:00 a.m. and 4:00 p.m. on Saturday. No construction-related activity shall occur on Sunday or any Federal Holiday.

COA: Construction Hours- Exceptions. It is recognized that certain construction activities, such as the placement of concrete, must be performed in a continuous manner and may require an extension of these work hours. Prior to initiating any activity that might require a longer period, the developer must notify the Zoning Officer and request an exception for a finite period of time. If the Zoning Officer approves the request, then two weeks prior to the expanded schedule, the developer shall notify businesses and residents within 500 feet of the Project site describing the expanded construction hours. A copy of such notice and methodology for distributing the notice shall be provided in advance to the City for review and approval. The Project shall not be allowed more than 15 extended working days.

COA: Project Construction Website. The applicant shall establish a Project construction website with the following information clearly accessible and updated monthly or more frequently as changes warrant:

- Contact information (i.e., "hotline" phone number, and email address) for the Project construction manager
- Calendar and schedule of daily/weekly/monthly construction activities
- The final Conditions of Approval, Mitigation Monitoring and Reporting Program, Transportation Construction Plan, Construction Noise Reduction Program, and any other reports or programs related to construction noise, air quality, and traffic.

Implementation of the City's standard conditions of approval would reduce construction noise impacts to the extent feasible, as required by BMC Section 13.40.070. With implementation of the City's standard conditions of approval, construction noise impacts would be reduced to a less-than-significant level.

Operational Noise Impacts. The proposed Project would generate long-term noise impacts from both traffic and stationary noise sources, as discussed below.

Traffic Noise Impacts. Off-site traffic noise impacts would result in a significant impact if traffic noise increases by 4 dBA or more over ambient noise levels without the Project. The guidelines included in the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) were used to evaluate traffic-related noise conditions in the vicinity of the Project site. This approach requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry to compute typical equivalent noise levels during daytime and nighttime hours. The resultant noise levels are weighted and summed over 24-hour periods to determine the L_{dn} values (refer to Appendix C for noise modeling outputs).

Traffic volumes along the roadways in the Project study area were obtained from the Transportation Impact Analysis prepared for the proposed Project.[143] Table 3.K lists traffic noise levels adjacent to roadway segments in the Project vicinity. These noise levels represent worst-case scenarios, which assume that no shielding is provided between the traffic and the location where the noise contours are drawn.

Table 3.K: Traffic Noise Levels Without and With Proposed Project

Roadway Segment	Existing Without Project		Existing With Project[a]		
	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	ADT	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane	Increase from Baseline Conditions
Addison Street – east of Bolivar Drive	560	48.2	1,130	51.3	3.1
Addison Street – east of 2nd Street	1,590	52.7	2,700	55.0	2.3
Bolivar Drive – south of Addison Street	490	47.6	1,060	51.0	3.4
Bancroft Way – east of Bolivar Drive	460	47.4	1,030	50.9	3.5
2nd Street – north of Addison Street	1,510	52.5	3,190	55.8	3.3
Eastbound I-80 off-ramp – west of 2nd Street	230	44.3	470	47.4	3.1
University Avenue – west of 6th Street	27,240	63.6	29,390	63.9	0.3
Bancroft Way – west of Fourth Street	790	49.7	2,400	54.5	4.8
2nd Street – north of Eastbound I-80 off-ramp	1,360	52.1	2,310	54.4	2.3
Hearst Avenue – west of 2nd Street	2,820	55.2	3,300	55.9	0.7
Addison Street – west of Fourth Street	2,060	53.9	3,360	56.0	2.1
Fourth Street – north of Addison Street	3,250	55.8	4,470	57.2	1.4
Bancroft Way – east of Fourth Street	1,490	52.5	2,650	55.0	2.5
6th Street – south of Bancroft Way	11,720	61.4	12,480	61.7	0.3

Source: LSA (May 2020).
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.
Shaded cells indicated roadway segments adjacent to the Project site.
[a] This analysis was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project, which would have resulted in 4,350 net new Project trips per day; therefore, this analysis is conservative and overestimates the number of average daily traffic distributed to surrounding roadways.
ADT = average daily traffic
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels

As shown in Table 3.K below, the roadway segments that would experience the greatest increase caused by Project-generated traffic volumes would be Bancroft Way west of Fourth Street (4.8 dBA increase), Bancroft Way east of Bolivar Drive (3.5 dBA increase), and Bolivar Drive south of Addison Street (3.4 dBA increase). The noise increase of 4.8 dBA along Bancroft Way west of Fourth Street would exceed the significance criteria for noise-level increases of 4 dBA or more with a resulting noise level of 54.5 dBA L_{dn}. Land uses along this segment include commercial and industrial uses. As such, the resulting noise level would be within the normally

[143] Fehr & Peers. 2021, op. cit. This analysis was conducted for a previous, larger (approximately 521,810 square-foot) version of the Project, which would have resulted in 4,350 net new Project trips per day; therefore, this analysis is conservative and overestimates the number of average daily traffic distributed to surrounding roadways.

acceptable exterior noise level for commercial and industrial land uses. In addition, according to the General Plan, the Project site is currently exposed to noise levels reaching 75 dBA L_{dn}. Therefore, traffic noise impacts would be less than significant and the proposed Project would not create a substantial permanent increase in ambient noise levels.

Stationary Source Noise Impacts. Stationary noise sources associated with the proposed Project could include heating, ventilation, and air conditioning (HVAC) mechanical equipment, occasional truck delivery loading/unloading activities, and typical motor vehicle/parking area activities.

As described above, the City of Berkeley establishes the acceptable daytime and nighttime maximum noise levels at receiving land uses. Daytime is considered to be between the hours of 7:00 a.m. and 10:00 p.m., and nighttime hours are between 10:00 p.m. and 7:00 a.m. BMC Section 13.40 establishes interior and exterior noise level standards (as measured at receiving sensitive land uses) not to be exceeded for more than thirty minutes any hour on commercial land uses as 60 dBA during nighttime hours and 65 dBA during daytime hours, and on residential land uses as 45 dBA during nighttime hours and 55 dBA during daytime hours.

Of the onsite stationary noise sources during operation of the Project, noise generated by delivery truck activity would generate the highest maximum noise levels. Typical parking lot activities, such as people conversing or doors slamming, would generate noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet, while delivery truck loading and unloading activities would result in maximum noise levels generate a noise level of 75 dBA L_{max} at 50 feet based on measurements previously conducted by LSA.

Loading activities at the Project site could include the loading of manufactured goods produced on the site. These activities are potential noise sources that could affect noise-sensitive receptors in the Project site vicinity. As shown in Figure 1-6, the proposed Project would include a drop-off area at the northern border of the site, on Addison Street. As identified above, the closest sensitive receptors include the multi-family residential uses located approximately 65 feet north of the Project site. At 65 feet, there would be a decrease of 2.2 dBA due to the decreased distance from the baseline noise level of 75 dBA L_{max} at 50 feet. Therefore, maximum noise levels generated by loading and unloading activities would be approximately 72.8 dBA L_{max} at the closest sensitive receptor. However, peak noise levels from loading and unloading would be intermittent and when averaged over one hour, these sources would not exceed the BMC standard. Additionally, when averaged over the 24-hour period, noise would not cause an increase in noise levels of more than 4 dBA. The following standard condition of approval would further ensure that all loading/unloading activities would occur within between 7:00 a.m. and 10:00 p.m. daily.

COA: Loading. All loading/unloading activities associated with deliveries to all uses shall be restricted to the hours of 7:00 a.m. to 10:00 p.m. daily.

With implementation of COA: Loading, it is not expected that the proposed Project would substantially increase noise levels over existing conditions and impacts would be less than significant.

b. Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? ***(Less-Than-Significant Impact)***

Vibrating objects in contact with the ground radiate vibration waves through various soil and rock strata to the foundations of nearby buildings. As the vibration propagates from the foundation throughout the remainder of the building, the vibration of floors and walls may cause perceptible vibration from the rattling of windows or a rumbling noise. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. When assessing annoyance from groundborne noise, vibration is typically expressed as root mean square (rms) velocity in units of decibels of 1 micro-inch per second. To distinguish vibration levels from noise levels, the unit is written as "VdB." Human perception to vibration in indoor environments starts at levels as low as 67 VdB and sometimes lower. Annoyance due to vibration in residential settings starts at 70 VdB. Groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of the building, the motion does not provoke the same adverse human reaction.

In extreme cases, excessive groundborne vibration has the potential to cause structural damage to buildings. Common sources of groundborne vibration include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment.

Construction and operation of the proposed Project could expose sensitive structures and residential receptors to excessive groundborne vibration, as discussed below.

Construction Vibration. Construction activities that would occur at the Project site have the potential to generate low levels of groundborne vibration or groundborne noise levels. The Project would require demolition of the existing structures on the Project site, as well as site clearing and grading activities. These activities would occur within approximately 65 feet of existing sensitive residential uses. No impact pile driving would occur as part of the proposed Project.

For all other equipment associated with the proposed construction activities, vibration impacts would approach 0.089 inches per second at a distance of 25 feet. This level would not exceed the 0.12 inches per second threshold at which there is virtually no risk resulting in architectural damage to buildings extremely susceptible to vibration damage. It would be structurally safe from the construction activity and equipment operation for these adjacent buildings and no structural damages would occur as a result of onsite construction. In addition, the following COA requires an analysis of potential damage due to construction prior to, or concurrent with demolition building permit.

> ***COA: Damage Due to Construction Vibration.*** The Project applicant shall submit screening level analysis prior to, or concurrent with demolition building permit. If a screening level analysis shows that the Project has the potential to result in damage to structures, a structural engineer or other appropriate professional shall be retained to prepare a vibration impact assessment (assessment). The assessment shall take into account Project specific information such as the composition of the structures, location of the various types of equipment used during each phase of the Project, as well as the soil characteristics in the Project area, in order to determine whether Project construction may cause damage to any of the structures identified as

potentially impacted in the screening level analysis. If the assessment finds that the Project may cause damage to nearby structures, the structural engineer or other appropriate professional shall recommend design means and methods of construction that to avoid the potential damage, if feasible. The assessment and its recommendations shall be reviewed and approved by the Building and Safety Division and the Zoning Officer. If there are no feasible design means or methods to eliminate the potential for damage, the structural engineer or other appropriate professional shall undertake an existing conditions study (study) of any structures (or, in case of large buildings, of the portions of the structures) that may experience damage. This study shall:

- Establish the baseline condition of these structures, including, but not limited to, the location and extent of any visible cracks or spalls; and
- Include written descriptions and photographs.

With implementation of COA: Damage Due to Construction Vibration, construction of the proposed Project would not result in substantial groundborne vibration on properties adjacent to the Project site. Therefore, impacts associated with groundborne vibration and groundborne noise levels during construction would be less than significant.

Operational Vibration. No permanent noise sources that would expose persons to excessive groundborne vibration or noise levels would be located within the Project site. In addition, long-term operational activities associated with the proposed Project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration. Therefore, this impact would be less than significant.

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 2 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? ***(No Impact)***

The airports nearest to the Project site are the Oakland International Airport (approximately 10 miles south of the site) and San Francisco International Airport (approximately 18 miles southwest of the site). The nearest private airport, Buchanan Field Airport, is located approximately 16 miles northeast of the site. Although aircraft-related noise is occasionally audible on the Project site, the site does not lie within an airport land use plan area or within the 60 dBA L_{dn} noise contours of any of these public airports or private airfields. Therefore, the proposed Project would not expose people residing or working in the Project area to excessive noise levels due to the proximity of a public airport. There would be no impact.

3.14 POPULATION AND HOUSING

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

a. Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ***(Less-Than-Significant Impact)***

The proposed Project does not include housing, and therefore would not directly induce population growth on the Project site through the introduction of new residents on the site. In addition, the Project site is located within an urban area and is currently developed with a mix of uses. Introducing new R&D and Office uses to an infill site would not result in an extension of infrastructure beyond that which is needed to serve the proposed Project or expand roadway capacity within the site's vicinity. A fraction of the 1,600 future employees may move to Berkeley solely for reasons of employment, although employees would likely commute from various communities throughout the Bay Area, due to the proximity of the I-80 corridor and nearby transit opportunities. Therefore, the proposed Project would not directly or indirectly induce substantial population growth on the site or in the surrounding area through the increase in employment on the site.

It should be noted that the City requires applicants for large scale office, retail, industrial, and/or other commercial development projects to off-set the Project's impacts on affordable housing. This ordinance applies to all such projects within non-residential and R-4 zones. The proposed Project would be subject to the requirements set forth for construction of new industrial projects, which requires an in-lieu fee not to exceed $4.00 per square foot of the Project's gross square floor area devoted to office and/or retail end use, and $2.00 per square foot of the Project's gross floor area devoted to industrial end use. The Project applicant would be required to pay the appropriate fees prior to issuance of a certificate of occupancy.

b. Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? ***(Less-Than-Significant Impact)***

As previously discussed, the Project site is currently occupied by a warehouse, two manufacturing buildings, and a soil and mulch management facility. Therefore, demolition of these structures and construction of the proposed Project would not displace any people or housing, and there would be no impact.

3.15 PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☒	☐
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☒	☐

a. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: i. Fire protection? Ii. Police protection? iii. Schools? iv. Parks? v. Other public facilities? ***(Less-Than-Significant Impact)***

The following section addresses the Project's potential effects on: fire service, police service, schools, parks, and other public facilities. Impacts to public services would occur if the Project increased demand for services such that new or expanded facilities would be required, and these new facilities would themselves cause environmental impacts.

Fire Protection. The Berkeley Fire Department provides fire protection and emergency medical services to the Project site. The Berkeley Fire Department operates seven fire stations including seven engine companies, two truck companies, and three ambulances.

Primary services to the Project site is provided by Station 1, located at 2242 Eighth Street (at Dwight Way) and Station 6, located at 999 Cedar Street (at Ninth Street). These stations are located approximately 0.6 miles southeast and 1 mile northeast of the Project site, respectively. Station 1 houses an ambulance and is continually staffed by two firefighters/paramedics. Station 6 also houses one engine company and is continually staffed by three firefighters. Station 2, located at 2029 Berkeley Way, provides hazardous materials emergency services and is located approximately 2 miles east of the site. The station is staffed by 16 firefighters, of which four are specially trained hazardous materials response technicians. Station 2 is equipped with one engine company including an aerial ladder truck, engine, medic ambulance, Type IV four-wheel drive truck, hazardous materials vehicle and one reserve truck and ambulance.

Currently, the Fire Department is staffed with 139 sworn fire fighters and 10 civilian staff.[144] The City's goal for staffing is reviewed each budget cycle and considers historical and current year information related to fire and emergency services. Due to increased call volume, the Fire Department has identified a need for additional ambulance response capability.

The City of Berkeley General Plan includes a standard response time goal of four minutes for Berkeley Fire Department's response to Priority 1 non-emergency medical calls. The standard response time for emergency medical service calls is 4.97 minutes.

Development of the proposed Project would increase the daytime population on the site and in West Berkeley in general, incrementally increasing the demand for emergency fire services. The proposed Project would construct R&D and Office uses on the site and buildings would reach up to 45 feet. However, the Fire Department's aerial ladder truck reaches 100 feet and the Department has the appropriate equipment to access these buildings. Although the automobile lane on Bolivar Drive would be narrowed to 11.5 feet, the street would continue to be accessible for fire apparatuses because the automobile lane would be separated from the pathway by a buffer with raised "armadillo" dividers, which can be mounted by emergency vehicle and allow the use of the full 27 feet of width on the street. In addition, fire hydrants would be installed in coordination with the Fire Department. Furthermore, the proposed Project would be required to comply with all applicable codes for fire safety and emergency access and the Fire department would ensure that the appropriate measures are implemented to reduce hazardous conditions at the site. The proposed Project would not adversely affect existing response times to the site or within the City.

The Berkeley Fire Department would continue to provide services to the Project site and would not require additional firefighters to serve the proposed Project. The construction of new or expanded fire stations would not be required to meet response time goals. Therefore, the proposed Project would not result in a substantial adverse physical impact associated with the provision of additional fire facilities or services.

In addition, the Berkeley Fire Department administers the Uniform Fire Code and applicable sections of the California Health and Safety Code, California Administrative Codes, Title 19, Public Safety and Title 24, Building Standards in reviewing and improving plans for development. The proposed Project would be required to comply with all applicable codes for fire safety and emergency access and additional review by the Fire Department to ensure that appropriate measures are implemented to reduce hazardous conditions at the site and provide for adequate emergency access. Compliance with the Uniform Fire Code would further ensure that potential impacts to fire services would be less than significant.

Police Protection. The Berkeley Police Department provides police protection to the Project site. Police headquarters are located at 2100 Martin Luther King Jr. Way, approximately 2 miles east of the Project site. The Police Department consists of 274 employees including 195 sworn officers.[145] This allows for a ratio of 1.5 sworn officers per 1,000 residents. The City's goal for staffing is

[144] Berkeley, City of. 2019. *City of Berkeley Fiscal Years 2020 & 2021 Adopted Annual Budget*. June 25.
[145] Ibid.

reviewed each budget cycle and considers historical and current year information related to police services. City population increases are not weighed in the Police Department's staffing needs.

The Police Department is transitioning to a 16-Beat system; the Project site is located within Beats 13N and 14S.[146] Primary law enforcement concerns in this area include vehicle burglary, family offenses, and robbery.[147] The standard City-wide response time for Priority 1 calls (life-threatening situations) is 5 minutes from the time of dispatch.

Development of the proposed Project would increase the daytime population on the site and within West Berkeley in general, incrementally increasing the demand for police services. However, the increased daytime population, onsite landscaping, and off-site streetscape improvements would also discourage illegal activity in the area by providing more "eyes on the street" and through increasing opportunities for recreational activity in the area. The site would also be fenced and public access would be prohibited, particularly after business hours. Increased demand for police services on the site would not require the alteration of existing police facilities or construction of new facilities in order to maintain existing service standards or staffing ratios. Therefore, the Project would result in a less than significant environmental impact related to demand for police services.

Schools. The Berkeley Unified School District (BUSD) operates 20 schools, including 11 public elementary schools (grades K-5), 3 middle schools (grades 6-8), one high school (grades 9-12), and an alternative high school (grades 9-12). In addition, the district has three preschool facilities and one Adult School serving several thousand students each year.[148] The BUSD has not developed student generation rates to estimate the number of students that might be anticipated with new development. However, the proposed Project does not include any residential uses, and would not directly affect student population. As previously discussed in Section 3.14, a fraction of employees may move to Berkeley solely for employment, but this growth would only result in an incremental increase in student population, and may be spread amongst the whole school district, depending upon place of residence.

Senate Bill 50 (SB50), which revised the existing limitation on developer fees for school facilities, was enacted as urgency legislation which became effective on November 4, 1998 as a result of the California voters approving a bond measure (Proposition 1A). SB50 established a 1998 base amount of allowable developer fees (Level One fee) for residential construction (subject to adjustment) and prohibits school districts, cities, and counties from imposing school impact mitigation fees or other requirements in excess or in addition to those provided in the statute.

The BUSD requires payment of a school impact fee of $0.56 per square foot of new commercial and industrial development. The proposed Project would be required to pay this fee, prior to issuance of a certificate of occupancy. The BUSD is responsible for implementing the specific methods for mitigating school impacts under the Government Code. These fees would be directed towards

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146 Berkeley, City of. 2020. *City of Berkeley Community GIS Portal*. Website: www.cityofberkeley.info/gisportal/?config=config_OtherCityServices.json (accessed July 2020).

147 CrimeMapping. 2020. Home. Website: www.crimemapping.com/home (accessed July 2020).

148 Berkeley Unified School District. 2020. Website: www.berkeleyschools.net/about-the-district/about (accessed July 2020).

maintaining adequate service levels, which would ensure that any impact to schools that could result from the proposed Project would be offset by development fees, and in effect, reduce potential impacts to a less-than-significant level.

Parks. The closest park to the Project site is Aquatic Park, which is one of the City's largest parks. Aquatic Park consists of approximately 33 acres of land and approximately 68 acres of open water within three lagoons and is located adjacent to the Project site, just west of Bolivar Drive, a right-of-way under the jurisdiction of the City's PRW. Aquatic Park was originally built as part of the Berkeley Waterfront Plan along with the construction of the Bayshore Highway (I-80) and Yacht Harbor. Tide gates were constructed to help keep the water level constant in Aquatic Park Lake. In addition to providing various recreation opportunities such as rowing and picnicking, there are numerous wetlands associated with the park the provide bird and fish habitat.[149] Access to Aquatic Park is provided by Bolivar Drive, Addison Street, and Bancroft Way.

A portion of the San Francisco Bay Trail runs through Aquatic Park and provides access to McLaughlin Eastshore State Park and Cesar Chavez State Park (located northwest of the Project site) via a pedestrian bridge at the intersection of Addison Street and Second Street, adjacent to the Project site. Cesar Chavez Park provides 90 acres of parkland and McLaughlin Eastshore provides 8.5 miles of parkland along the East Bay shoreline from the Bay Bridge to Richmond. McLaughlin Eastshore State Park includes 1,854 acres of upland and tidelands along the waterfront that parallels I-580, the most heavily travelled corridor in the East Bay. Other recreation opportunities in the vicinity include James Kenney Recreation Center, a community recreation center that includes outdoor tennis courts, basketball courts, and softball park located on Eighth Street, northeast of the Project site; and San Pablo Park, which is located southeast of the Project site, provides softball and baseball diamonds, a multi-purpose turf used for soccer and other sports, tennis courts, and a children's playground, among other amenities.

Development of the proposed Project could increase the use of these parks as well as other parks within the City and within the region. However, this increase is expected to be incremental due to the absence of residential uses in the proposed Project and is not expected to adversely affect the physical conditions of local and regional open space areas or recreational facilities, or require the provision of new parks of facilities in order to meet established service goals. The proposed Project would also include off-site improvements within and immediately adjacent to Bolivar Drive, a park access driveway. These improvements would enhance the physical condition of and experience for pedestrians, bicyclists, and other recreationists accessing Aquatic Park. In addition, interior landscaped and common areas to be provided as a part of the proposed Project at the ground and terrace levels would reduce the increase in demand for public parks and recreational facilities in Berkeley as these amenities would also be available onsite. Therefore, although the proposed Project would be expected to increase use at surrounding parks, including Aquatic Park, this increase is not expected to require the need for new or physically altered recreational facilities, and this impact would be less than significant.

[149] Berkeley, City of. 2015. Parks and Recreation. Trees and Parks. Website: www.ci.berkeley.ca.us/Parks_Rec_Waterfront/Trees_Parks/Parks__Aquatic_Park.aspx (accessed July 2020).

Other Public Facilities. Development of the Project is unlikely to increase the demand for other public services, including libraries, community centers, and public health care facilities, because no direct population growth would occur. Therefore, the proposed project is not expected to substantially increase the usage of these facilities, such that new facilities would be needed to maintain service standards and this impact would be less than significant.

3.16 RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? ***(Less-Than-Significant Impact)***

As discussed in Section 3.15, tenants, employees, and visitors to the Project site would be expected to use local parks and community facilities in Berkeley as well as regional recreational facilities. Although the Project would incrementally increase use of these facilities, this minor increase in use is not expected to result in substantial physical deterioration of local parks, trails, and community centers and this impact would be less than significant.

In addition, the proposed Project would also include streetscape improvements such as new street trees and widened sidewalks, improving pedestrian connections and access to Aquatic Park and the overall pedestrian experience in the area. Access to this area of the park for those who choose to drive would be maintained via striped parking spaces to be located parallel to Bolivar Drive in coordination with PRW, but the number of spaces would not substantially increase such that greater access to motorists would be provided, a condition which could increase use of the park. Therefore, the proposed Project would not otherwise detract from the user experience or result in the physical deterioration of the park and this impact would be less than significant.

b. Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? ***(No Impact)***

The proposed Project would consist of the redevelopment of the site with R&D and Office uses. The proposed Project does not include or require the construction or expansion of existing public recreational facilities. Therefore, development of the proposed Project and associated recreational opportunities for use by Project occupants would not result in additional environmental effects beyond those described in this document.

3.17 TRANSPORTATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Conflict or be inconsistent with CEQA Guidelines §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?	☐	☐	☒	☐

Unless otherwise noted, the information below is based on the Transportation Impact Analysis (TIA) prepared for the proposed Project[150] and the City of Berkeley VMT Criteria and Thresholds Report (VMT Guidelines).[151]

a. Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(Less-Than-Significant Impact)***

The following includes an evaluation of the proposed Project's potential to conflict with applicable programs, plans, ordinances, and policies addressing the circulation system, including the City's Transportation Strategic Plan.[152] The section begins with a description of the proposed Project's trip generating potential, compared to existing conditions, followed by an analysis of potential impacts to transit, bicycle, pedestrian, and roadway facilities. As discussed, this impact would be less than significant.

Trip Generation. Trip generation is the process of estimating the number of vehicles that would likely access the Project site. Trip generation data is estimated using the data and methodology published by the Institute of Transportation Engineers (ITE) in the Trip Generation Manual, Tenth Edition. However, ITE data are primarily based on data collected at single-use suburban sites. These defining characteristics limit their applicability to developments, such as the proposed Project, which is in a more walkable urban setting near local and regional transit service. Since the Project could ultimately result in the development of the site with a combination of R&D and Office uses, or one of these uses, trip generation estimates assume office uses for the entire Project because office has a higher trip generation rate and results in a more conservative analysis.

To account for trips to and from the Project site that would be made by non-automobile modes, a modal reduction was applied to the raw ITE trip generation. The modal reduction is based on census

150 Fehr & Peers. 2021, op. cit.
151 Berkeley, City of. 2020. *City of Berkeley VMT Criteria and Thresholds.* June 29.
152 Berkeley, City of. 2016c. *Berkeley Strategic Transportation Plan.* June.

data for the Project area. The 2016 5-year American Community Survey shows that about 25 percent of workers in West Berkeley travel to and from work by non-automobile modes, compared to 14 percent for the US as a whole. Therefore, the AM and PM peak hour trip generation for the Project was reduced by about 13 percent.

Table 3.L summarizes the trip generation for the proposed Project based on the ITE methodology and accounts for the non-automobile trips and trips generated by the existing site uses. As shown in Table 3.L, it is estimated that the proposed Project would generate approximately 3,840 daily trips, including 394 AM peak hour and 404 PM peak hour net new trips. Although the Project would include a TDM Plan,[153] which is discussed in more detail in the following section, that would reduce the automobile trips generated by the Project, the Project trip generation does not account for the effectiveness of the TDM Plan in order to present a conservative estimate.

Table 3.L: Proposed Project Automobile Trip Generation

Land Use	Units[a]	Daily	AM Trips			PM Trips		
			In	Out	Total	In	Out	Total
Building A								
Office[b]	265 KSF	2,730	237	39	276	46	241	287
Non-Automobile Trips (-13%)[c]		-350	-30	-5	-35	-6	-31	-37
Existing Site Trips		-330	-24	-6	-30	-9	-27	-36
Building A Net New Trips		**2,050**	**183**	**28**	**211**	**31**	**183**	**214**
Building B								
Office	196.9 KSF	2,050	183	30	212	35	182	217
Non-Automobile Trips (-13%)		-260	-23	-4	-27	-4	-23	-27
Existing Site Trips		0	0	0	0	0	0	0
Building B Net New Trips		**1,790**	**159**	**26**	**185**	**31**	**159**	**190**
Total Net New Trips		**3,840**	**342**	**54**	**394**	**62**	**342**	**404**

Source: Berkeley Commons Project Transportation Impact Analysis (Fehr & Peers, January 2021).

[a] KSF = 1,000 square feet

[b] ITE Trip Generation (10th Edition) land use category 710 (General Office Building) in general urban/suburban setting:
AM Peak Hour: T = 0.94 8 (X) + 26.94 (86% in, 14% out)
PM Peak Hour: Ln(T) = 0.95 * Ln(X) + 0.36 (16% in, 84% out)

[c] Reductions based on mode share estimates as compiled in the American Community Survey 2016 five-year estimate for workers in West Berkeley compared to national data.

Table 3.M summarizes the total trip generation by different travel modes based on current mode splits in West Berkeley. The travel modes include automobile, transit, bicycle, and pedestrian. The proposed Project is estimated to generate a total 491 AM peak hour and 501 PM peak hour trips.

[153] Fehr & Peers. 2021, op. cit.

Table 3.M: Trip Generation by Travel Mode

Mode	Mode Share Adjustment Factors[a]	AM Peak Hour	PM Peak Hour
Automobile	0.81	396	404
Transit	0.08	39	40
Bicycle	0.06	30	31
Pedestrian	0.05	26	26
	Total Trips	**491**	**501**

Source: Berkeley Commons Project Transportation Impact Analysis (Fehr & Peers, January 2021).

[a] Based on mode share estimates as compiled in the American Community Survey 2016 five-year estimate for workers in West Berkeley

Transportation Demand Management Plan. The proposed Project includes a TDM Plan,[154] which would include the following strategies to reduce trip generation and parking demand:

- Provide shuttle service between both Project buildings and the North Berkeley BART Station during weekday peak commute periods (6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m.). The Project would also explore the feasibility and if feasible, would coordinate the shuttle service with existing shuttle services, and/or other employers in West Berkeley. Shuttle service would be adjusted based on ridership.

- Provide bike lockers, showers, personal lockers, and a repair station on-site to encourage bicycling to the site.

- Provide shared bicycles that employees can use during the day for errands.

- Coordinate with City of Berkeley, and/or other regional agencies to facilitate installation of a BayWheels bikeshare station along the Project frontage.

- Offer to provide free parking spaces for at least two car share vehicles (ZIP Car, etc.).

- Offer carpool/ride-matching services, such as ZimRide, ComoVee, or 511.org RideShare, to pair employees interested in forming commute carpools.

- Provide preferential carpool parking including free parking for carpoolers if employees are charged for on-site parking.

- Require tenants to provide full or partial transit subsidy to Project employees. Tenants may offer one of the following to employees that request it:

    - A monthly commuter check for transit (or a Clipper Card, which is accepted by BART, AC Transit, and other major transit providers in the Bay Area) or for bicycle equipment/maintenance;

[154] Fehr & Peers. 2021, op. cit.

  - Subsidized AC Transit bus pass; or
  - Subsidized Capital Corridor monthly ticket.

- Require tenants to provide pre-tax commuter benefits for Project employees.
- Regularly provide Project tenants and employees information about various transportation options in the area and the TDM strategies provided by the Project. The main lobby of each Project building shall also provide all the information on transportation options, including a TransitScreen.
- Provide information on the Bay Area Commuter Benefits Program to all building tenants. As of September 30, 2014, Bay Area employers with 50 or more full-time employees within the BAAQMD geographic boundaries are required to register and offer commuter benefits to their employees in order to comply with BAAQMD Regulation 14, Rule 1, also known as the Bay Area Commuter Benefits Program. Employers must select one of four Commuter Benefit options to offer their employees: a pre-tax benefit, an employer-provided subsidy, employer-provided transit, or an alternative commute benefit. (Information about Commute Benefits Program is at 511.org/employers/commuter/overview.)

Transit Facilities. The proposed project would have a significant impact related to transit facilities if it would conflict with the goals and policies related to transit use in the Berkeley Strategic Transportation Plan, which was adopted in 2016.[155] In particular, the proposed Project would result in a conflict if it would discourage people from using transit or decrease transit efficiency.

The proposed Project is located within close proximity to a variety of transit services, which would encourage the use of these services. In addition, the proposed TDM Plan includes incentives to encourage the use of transit, such as provision of transit subsidies and pre-tax commuter benefits, as well as provision of real-time transit information. As shown in Table 3.M, the proposed Project is estimated to generate about 39 AM peak hour and 40 PM peak hour transit trips. It is expected that most of these trips would use AC Transit buses, with some trips using BART or Amtrak. Approximately 30 buses (Routes 36, 51B, 72, 72M, 72R, 80) operate within 0.5 miles of the site during the peak hours. Assuming that all transit trips would be by bus, the Project would increase bus ridership by about one to two riders per bus during the peak hours. This minimal incremental increase would not have a substantial effect on the efficiency of AC Transit bus service.

The North Berkeley BART Station is about 1.5 miles northeast of the Project site and the Berkeley Amtrak Station is about 0.1 miles northwest of the Project site. The proposed Project is expected to generate a fractional increase in BART and Amtrak trips. Therefore, the proposed Project's small incremental contribution to both BART and Amtrak would be minimal and not have a substantial effect on the efficiency of these systems.

[155] Berkeley, City of. 2016c, op. cit.

Multiple bus stops are provided within walking distance of the Project site, with most stops located northeast of the Project site. Bus riders would use the sidewalks, mostly on Fourth and Addison streets to walk between the Project site and the nearby bus stops or the Amtrak Station. No shuttle service is currently provided on the streets adjacent to the Project site. The proposed Project would include shuttle service between the Project site and a BART station and require employers to provide transit passes as part of the TDM Plan for the Project. Within the Project site, shuttles would be accommodated in the pick-up/drop-off area for each building. Therefore, because the proposed Project would encourage transit use, but would not generate so many transit trips as to decrease the efficiency of public transit in the area, this impact would be a less than significant.

In addition to the existing transit in the vicinity, the Water Emergency Transportation Authority (WETA) is also currently studying the feasibility of ferry service from the Berkeley Marina, which is located approximately 1 mile west of the Project site. In the event that ferry service is implemented, the San Francisco Bay Trail would provide pedestrian and bicycle access from the potential ferry terminal to the Project site, therefore further encouraging the use of public transit.

Bicycle Facilities. The proposed project would have a significant impact to bicycle facilities if it would conflict with the goals and policies related to bicycle use in the Berkeley Strategic Transportation Plan. In particular, the proposed project would result in a conflict if it would impair the implementation of any planned bicycle boulevards, result in street design that would be unsafe for bicyclists, or discourage bicycle use in the vicinity of the Project site.

Bicycle access to the proposed Project is provided through the City's bicycle network, which includes existing Class III facilities on both Addison Street and Bancroft Way, with connections to the existing Fourth Street Class III Bicycle Route, Sixth Street Class II Bicycle Lanes, and the Ninth Street bicycle boulevard. Other bicycle facilities near the Project site include the Channing Way bicycle boulevard one block south of the Project and the Bay Trail connected through the Eastshore Pedestrian Overcrossing just northwest of the Project. The City's Bicycle Plan identifies Addison Street as a future bicycle boulevard.

The Project site plan identifies long-term and short-term bicycle parking for both buildings in secure bicycle rooms adjacent to the garage driveways and the pick-up/drop off areas. Thus, cyclists would approach the site from both north and south and use the driveways on Addison Street and Bancroft Way to reach the bicycle parking facilities.

As shown in Table 3.M, the proposed Project is estimated to generate approximately 30 AM peak hour, and 31 PM peak hour bicycle trips. Project generated bicycle trips would be served by adjacent bicycle facilities described above which currently operate under capacity.

Automobile traffic generated by the proposed Project would increase traffic on designated bicycle facilities serving the Project site, especially on Addison Street and Bancroft Way. Both streets include street signs and pavement markings that notify drivers that they are on a shared-mode facility. In addition, traffic control devices at nearby intersections maintain low automobile speeds.

The proposed Project would not modify Addison Street and would not prevent the implementation of the planned bicycle boulevard on Addison Street. As agreed to by the City's Public Works Department, on-street parking along the Project frontage on the south side of Addison Street between Second Street and the railroad tracks would be prohibited, which would reduce potential conflicts between cyclists and motorists in an area where the Project would increase automobile traffic. The parking prohibition could allow installation of a bicycle lane along the Project frontage. Although there are currently no plans to provide a bicycle lane on eastbound Addison Street along the Project frontage, the City of Berkeley may implement the bicycle lane in the future as part of a separate bicycle improvement project on Addison Street. In addition, the Project would not increase automobile traffic on Addison Street east of Sixth Street since through movements on Addison Street across Sixth Street are currently prohibited for motorists.

While the proposed Project would increase automobile traffic along Bolivar Drive, the proposed Project would also improve Bolivar Drive along the Project frontage between Addison Street and Bancroft Way by narrowing the street to one southbound automobile lane and providing a separate pedestrian/bicycle pathway along the west side of the street which would connect to the existing Eastshore Pedestrian Overcrossing just north of the Project site and the Aquatic Park Trail south of Channing Way. The pathway would be separated from the automobile lane by either a combination of a 2-foot buffer and a 2-foot shoulder or a parallel on-street parking lane. The 2-foot buffer would also include raised "armadillo" dividers that would minimize the potential for automobiles to enter the pathway. Planters between the parking lane and the pathway would result in a de-facto 3-foot buffer, which would minimize the potential for conflicts between bicyclists and parked vehicles. Therefore, the proposed Project would have a less-than-significant impact related to bicycle facilities.

Pedestrian Facilities. The proposed project would have a significant impact to pedestrian facilities if it would conflict with the goals and policies related to bicycle use in the Berkeley Strategic Transportation Plan. In particular, the proposed project would result in a conflict if it would discourage walking in commercial districts, result in street design that would be unsafe for pedestrians, or discourage walking in the vicinity of the Project site.

The sidewalk adjacent to the site along Addison Street currently ranges between 6.5 and 10 feet wide. There are no sidewalks along the Project frontage on Bancroft Way and Bolivar Drive. Consistent with BMC Section 16.06.010, which requires that curbs and sidewalks be installed when new buildings are constructed or substantially remodeled, the proposed Project would include construction of a sidewalk along the Project frontage on Bancroft Way. The Project also proposes to complete a bicycle and pedestrian path on the west side of Bolivar Drive which would connect the Eastshore Pedestrian Overcrossing and the path along Aquatic Park. In addition, as described above, the sidewalk along the Project frontage on Bancroft Way would be extended to the east and connect to the existing sidewalk on Bancroft Way through an ADA-compliant sidewalk across the railroad tracks.

The proposed Project would include raised midblock crosswalk across Bolivar Drive connecting the Project site and Aquatic Park; this proposed improvement is subject to approval by PRW. The raised crossing would increase pedestrian visibility and reduce vehicular speeds along Bolivar Drive.

The proposed Project would also include a continuous accessible sidewalk along the east side of both Parking Garage A and B and adjacent to the service access driveway. The walkway would mostly consist of a 5-foot sidewalk and would connect the Project buildings to Addison Street and Bancroft Way. Although most trucks exiting the loading docks would have adequate sight distance of pedestrians on the walkway, audio/visual warning devices would be installed at the loading dock access points to reduce potential conflicts between trucks and pedestrians. In addition, bollards would be installed along the segments of the walkway that are at the same grade as the service access driveway.

Pedestrians would access the proposed Project along Addison Street, Bancroft Way, and Bolivar Drive. As shown in Table 3.N, the proposed Project is estimated to generate about 26 AM and PM peak hour pedestrian trips. The proposed Project would also generate about 39 AM peak hour and 40 PM peak hour transit trips that would most likely include pedestrian trips between the Project site and the transit stops. The new pedestrian trips generated by the proposed Project can be accommodated on the existing facilities serving the Project site. Therefore, because the proposed Project would result in enhanced and safer pedestrian facilities within and adjacent to the Project site and would encourage walking, the proposed Project would have a less-than-significant impact related to pedestrian safety or facilities.

Roadways. Pursuant to SB 743, described in Section 3.17.b, level of service (LOS) or other measures of automobile delay can no longer be used to identify significant impacts under CEQA. Therefore, the following summary of the proposed Project's effects on roadway operations is provided for informational purposes only. For a detailed discussion of the potential LOS impacts related to implementation of the proposed Project, please refer to the TIA.

The TIA evaluated the potential effects of the traffic generated by the proposed Project on traffic operations during the AM and PM peak hours at 17 intersections under Existing Plus Project conditions. The proposed Project would result in substantial effects at the Gilman Street/Westbound I-80 Ramps and Gilman Street/Eastshore Highway intersections. However, the planned and funded improvements at the I-80/Gilman Street interchange, which consists of two roundabouts currently under design, would improve traffic operations at these intersections. The proposed Project could also result in a substantial effect at the Sixth Street/Bancroft Way intersection; however, as proposed by the Project, the applicant would fund and work with the City's Public Works Department to install a traffic signal at this intersection.

b. Would the Project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)? ***(Less-Than-Significant Impact)***

On September 27, 2013, California Governor Jerry Brown signed SB 743 into law and started a process that changed the way transportation impact analysis is conducted as part of CEQA compliance. These changes include elimination of automobile delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts under CEQA. According to SB 743, these changes are intended to "more appropriately balance the needs of congestion management with Statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

In December 2018, the State Office of Planning and Research (OPR) completed an update to the CEQA Guidelines to implement the requirements of SB 743. The Guidelines state that VMT must be the metric used to determine significant transportation impacts. The Guidelines require all lead agencies in California to use VMT-based thresholds of significance in CEQA documents published after July 1, 2020.

The OPR Guidelines recommend developing screening criteria for development projects that meet certain criteria that can readily lead to the conclusion that they would not cause a significant impact on VMT. The OPR Guidelines also recommend evaluating VMT impacts using an efficiency-based version of the metric, such as VMT per resident for residential developments and/or VMT per worker for office or other employment-based developments. The City of Berkeley uses the metric of home-work VMT per worker for evaluating the impacts of employment-based uses, such as the proposed Project. The home-work VMT per worker measures all of the driving commute trips between homes and workplaces and divides that total distance by the number of workers at the site. Based on the City of Berkeley's guidelines, an employment-generating project's VMT impact is considered less-than-significant if its home-work VMT per worker is at least 15 percent below the regional average home-work VMT per worker.

VMT Screening. The concept of project screening is that some projects have characteristics that would readily lead to the conclusion that they would not cause a VMT impact, and therefore those projects could be screened out of doing a detailed VMT analysis. The screening criteria applicable to the proposed Project is the Transit Priority Area (TPA) criterion, based on the Project site's proximity to a major transit stop[156] or a stop along a high-quality transit corridor.[157] However, the TPA screening criterion does not apply to office developments larger than 200,000 square feet in size. Therefore, because the proposed Project would be approximately 462,000 square feet in size, the proposed Project would not be screened out, and a detailed VMT analysis is required.

VMT Estimates. VMT is typically an output from travel demand models and is calculated based on the number of vehicles multiplied by the distance traveled by each vehicle. This analysis uses VMT per worker, as estimated by the ACTC Countywide Travel Demand Model (ACTC Model), as recommended by the City of Berkeley's VMT Criteria and Thresholds Report. VMT per worker is defined as the total VMT generated by workers with an origin and/or destination within a geographic area and tracked throughout the regional network on a typical weekday divided by the number of workers in that geographic area.

The ACTC Model, which covers the entire nine county Bay Area, is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes, transit ridership, and VMT using a four-step modeling process that includes 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. This

[156] Major transit stop is defined as 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 service interval of 15 minutes or less during the morning and afternoon peak commute periods.

[157] High-quality transit corridor is defined as a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.

analysis uses the latest version of the Alameda CTC Model, which was released in June 2018. The Model is based on the Metropolitan Transportation Commission (MTC) Plan Bay Area 2040 (i.e., Sustainable Communities Strategy) transportation network and land uses for 2020 and 2040.

As a regional planning tool, the Alameda CTC Model was developed through an extensive model validation process and is intended to replicate existing vehicular travel behavior. Therefore, it can provide a reasonable estimate of the VMT generated in various geographic areas on a typical weekday, as well as estimate future VMT that reflects planned local and regional land use and transportation system changes. The Model was used to estimate VMT per worker generated by the Project, as well as average VMT per worker for the entire Bay Area region under 2020 and 2040 conditions. Table 3.N summarizes the VMT estimates under 2020 and 2040 conditions. It is estimated that the Project workers would have an average VMT of 14.9 miles per worker per day in 2020 and 14.7 miles per worker per day in 2040.

Table 3.N: VMT Summary

Geographic Area	Home-Work VMT per Worker (2020)[a]	Home-Work VMT per Worker (2040)[a]
Proposed Project (TAZ 74)	14.9	14.7
Bay Area Region Average	18.1	18.2
Bay Area Region Average minus 15%	15.4	15.5
Significant Impact?	**No**	**No**

Source: Berkeley Commons Project Transportation Impact Analysis (Fehr & Peers, January 2021).

Under 2020 and 2040 conditions, the average VMT per worker for the Project would be more than 15 percent below the citywide, countywide, and regionwide averages; therefore, this impact would be less than significant.

Although the proposed Project would not have a significant impact on VMT and no mitigation is required, the proposed Project would include implementation of a TDM Plan to further reduce VMT. The TDM Plan is described above under Section 3.17.a, and the effectiveness of each strategy is summarized in Table 3.O, on the following page.

Furthermore, although the Project site is located adjacent to I-80 and the proposed Project would not provide a reduced number of vehicle parking spaces compared to the City's parking requirements — two conditions which could contribute to employees that are located outside of the City to prefer driving to the site due to ease of access and parking opportunities — given the location of the Project and proposed improvements, including the proposed TDM Plan, the proposed Project would facilitate transit use and use of alternative modes of transportation, offsetting these conditions to some degree. Specifically, the Project's location supports the use of non-auto travel given that the site is located within a TPA and is within 0.5 miles of several major transit stops/intersecting major bus routes. As previously described, the Berkeley Amtrak Station is located one block north of the site and three AC Transit stops are located within four blocks of the site. A mix of bicycle paths, bicycle boulevards, and bicycle lanes provide access to Project site. Addison Street and Bancroft Way adjacent to the Project site and Fourth Street just east of the Project site are identified as Class III bicycle routes. Existing bicycle boulevards near the Project site

include Virginia Street and Channing Way in the east-west direction and Ninth Street in the north-south direction. The Class I Eastshore Pedestrian Overcrossing which connects to the Berkeley Marina is just northwest of the Project site, and Class II bicycle lanes are currently provided on Sixth Street between Addison Street and Channing Way. The nearest BayWheels bikeshare station is located on Addison Street just east of Fourth Street.

Table 3.O: TDM Plan Measures and Effectiveness

TDM Strategy	Description	Estimated VMT Reduction[a]
BART Shuttle	Provide peak commute period shuttle service to BART	3-6%
Bicycle Amenities	Provide secure bicycle parking, showers and lockers, and repair station	<1%
Bike Share	Allow and facilitate installation of a BayWheels bikeshare station along the site frontage	
Carshare Parking Spaces	Dedicate onsite carshare parking spaces	<1%
Carpool and Ride-Matching Assistance	Assist Project employees in forming carpools and provide preferential carpool parking spaces	1%
Transit Fare Subsidy	Require tenants to provide a monthly transit subsidy to employees	4-8%[b]
Pre-Tax Commuter Benefits	Require tenants to provide pre-tax commuter benefits to employees	
Marketing and Education	Active marketing and education of employees on various commuting options	N/A[c]
	Estimated VMT Reduction	**8-15%**

Source: Berkeley Commons Project Transportation Impact Analysis (Fehr & Peers, January 2021).

[a] Based on Quantifying Greenhouse Gas Mitigation Measures (California Air Pollution Control Officers Association, August 2010)

[b] Assuming a subsidy of about $2.50 per day per employee (value to transit user and not necessarily the cost) available to about half of the Project employees.

[c] The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that existing literature does not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.

In addition, per the proposed TDM Plan described above,[158] the proposed Project would provide the following public transit connections, bicycle facilities, carpooling and carsharing, and incentives: shuttle connection to BART; transit subsidies; onsite amenities for bike commuters; bike sharing; carsharing parking spaces; carpool/ride-match services and preferential parking; real-time transportation information; and would meet the requirements of the BAAQMD Bay Area Commuter Benefits Program. Finally, the proposed Project would result in off-site alternative transportation improvements, including the installation of a bicycle and pedestrian pathway (sidewalk or other) along Bolivar Drive and adjacent to the Aquatic Park shoreline extending from the Project site frontage south to where Bolivar Drive terminates and the Aquatic Park Path continues through the open space area.

[158] Fehr & Peers. 2021, op. cit.

c. Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(Less-Than-Significant with Mitigation Incorporated)***

On-Site Vehicular Circulation. Building A would include a five-level, 530-space parking garage with a full access driveway on Addison Street approximately 100 feet west of the existing at-grade railroad crossing. The one-way pick-up/drop-off area for Building A would be along Addison Street with an inbound driveway across from Second Street and an outbound driveway about 30 feet west of the garage driveway. The Building A pick-up/drop-off area would provide approximately 120 feet of passenger loading space and would accommodate passenger vehicles turning into and out of the pick-up/drop-off area in both directions on Addison Street.

Building B would have a five-level, 394-space parking garage with a full access driveway on Bancroft Way about 75 feet west of the at-grade railroad crossing. The one-way pick-up/drop off area for Building B would be along Bancroft Way with an inbound driveway shared with the garage driveway and the outbound driveway approximately 75 feet west of the garage driveway. The Building B pick-up/drop off area would provide about 75 feet of passenger loading space, and would accommodate passenger vehicles turning into and out of the pick-up/drop-off area in both directions on Bancroft Way.

The proposed Project would also provide a pick-up/drop-off area midblock on Bolivar Drive that would serve the potential secondary lobbies of both buildings. Since Bolivar Drive would be converted to one-way southbound operations, all vehicles accessing the pick-up/drop-off area would approach from the north and leave to the south.

The proposed Project would also include a service access driveway along the east side of the site and between the Project buildings and the railroad tracks. The service access driveway would be one-way northbound, would be used by service, delivery, and emergency access vehicles only, and would be closed to the general public.

All off-street parking spaces for the proposed Project would be provided in the two garages described above. If one or both of the garage entries are controlled by gates, the gates would be located inside the garage and at least 100 feet from the street, which would be adequate for entering vehicles to queue within the garage and minimize the potential for queue spillover onto Addison Street or Bancroft Way.[159]

Currently, Addison Street provides no on-street parking on either side of the street between Second Street and Bolivar Drive. Addison Street provides striped on-street parking on both sides of the street between about 40 feet east of Second Street and the at-grade railroad crossing. On-street automobile parking along the Project frontage along the south side of Addison Street between

[159] It is estimated that up to 185 vehicles would enter each garage during the peak hour. Assuming that the garage gates would be controlled by automatic ticket dispensers, each gate can serve about 500 vehicles per hour. Assuming a normal distribution for vehicle arrivals, the 95th percentile queue during the AM peak hour on a typical weekday is estimated to be about 75 feet.

Second Street and the railroad tracks would be prohibited to ensure adequate sight distance for the Project driveway.

The three outbound Project driveways (two on Addison Street and one on Bancroft Way) would be controlled by stop-signs on the driveway approaches and would have adequate sight distance of pedestrians on the adjacent sidewalks, as well as vehicles in both directions of the adjacent street, with the parking prohibition described above.

Given the above, the proposed project would not create hazardous conditions due to vehicle access and circulation patterns and this impact would be less than significant.

On-Site Truck Loading. Truck loading for both buildings would be provided along the service access driveway on the east side of the Project site. Each building would provide four covered bays. In addition, 12 trucks can also be accommodated along the service access driveway, for a total of 20 trucks. BMC Section 23E.32.030 requires one off-street loading space for the first 10,000 square feet, and one space for each additional 25,000 square feet of area. Thus, the combined approximately 462,000 square feet in Buildings A and B would require 18 loading spaces, which would be included with the proposed Project.

The service access driveway, which would be accessed by all trucks, would be one-way northbound. Thus, all trucks would access the site from the east on Bancroft Way and leave from Addison Street. Considering the roadway network serving the Project site, all trucks are expected to travel to and from the Project site from the east. Most trucks would access the site from either northbound or southbound Sixth Street and turn at Bancroft Way to access the service access driveway. Most trucks would leave the Project site by turning right on Addison Street. Since left-turns are prohibited from eastbound Addison Street onto northbound Sixth Street, trucks would turn right from eastbound Addison Street onto southbound Sixth Street when leaving the site.

As shown in Appendix D to the TIA, WB-50 or smaller trucks would approach the site from the east on Bancroft Way and turn right into the service access driveway; similarly, they would leave the site by turning right from the service access driveway onto Addison Street. Most trucks serving the site would be WB-40 or smaller and WB-50 trucks are expected to serve the site about once per month at most. Trucks larger than WB-50 would not serve the Project site.

As described and shown more fully in the TIA, WB-40 trucks would be able to turn right from westbound Bancroft Way into the proposed service access driveway and from the service access driveway onto eastbound Addison Street without encroaching onto the opposing traffic lane. WB-50 trucks approaching the site on westbound Bancroft Way and turning right into the service access driveway or leaving the site and turning right from the service access driveway onto Addison Street may need to swing across the street centerline and onto the opposite travel lane to complete the right-turn. The trucks making these right-turns would have adequate sight distance of the oncoming traffic and can wait to complete their movements without interrupting traffic operations.

To further minimize the potential for conflicts between WB-50 trucks turning right from the service access driveway onto eastbound Addison Street and vehicles on westbound Addison Street, the service access driveway would be restricted to northbound truck access only and would be

restricted to WB-40 trucks or smaller with larger trucks subject to permission by the Project property manager. In addition, when WB-50 trucks access the site on an occasional basis, the applicant has proposed that the Project property manager would designate a traffic operations coordinator to assist with traffic flows as needed. The coordinator would ensure that westbound traffic on Addison Street east of the railroad tracks is halted, if necessary, when WB-50 trucks are leaving the service access driveway.

The service access driveway would provide a gate at the approach on Addison Street to prevent wrong-way travel along the service access driveway and prevent trucks from turning left from westbound Addison Street onto the service access driveway, which would eliminate the potential for trucks to block the adjacent railroad tracks while waiting to turn left into the Project site.

Given the above, including design and operational measures incorporated into the proposed Project, truck access and circulation patterns would not result in hazardous conditions on- or off-site and this impact would be less than significant.

Bolivar Drive Modifications. As described in Section 1.0, Project Information, the proposed Project would include several improvements to Bolivar Drive adjacent to the Project site to better accommodate bicycles and pedestrians. These improvements would be coordinated with and are subject to final approval by PRW. Improvements would include a bicycle and pedestrian pathway that varies in width but would be an average of approximately 14 feet wide along the west side of the street. Parallel parking spaces accommodating approximately 12 or more vehicles would also be provided along the west side of this segment of Bolivar Drive. A secondary pick-up/drop-off area would be provided on the east side of Bolivar Drive between Buildings A and B. Vehicles would approach the Bolivar Drive pick-up/drop-off area from the north and leave to the south. Thus, the primary passenger loading and unloading would be on the driver's side. The pick-up/drop-of area would be about 13 feet wide, which would be adequate for passenger loading and unloading on the passenger side.

To accommodate the bicycle and pedestrian pathway, one automobile lane on Bolivar Drive would be eliminated and Bolivar Drive would be converted to one-way southbound only operations. The southbound lane on Bolivar Drive would be 11.5 feet wide adjacent to the pathway. The southbound lane would be separated from the pathway by a two-foot buffer, which combined with the two-foot shoulder along the pathway would provide four feet of separation between the automobile lane and the pathway. In addition, the buffer would include raised "armadillo" dividers to minimize the potential for automobiles to swerve into the pathway, while allowing emergency vehicle access.

The southbound lane would be 12 feet wide adjacent to the eight-foot parallel parking lane, which would provide adequate space for vehicles to maneuver into and out of the parallel parking spaces. A speed table just north of the parking area and a raised crosswalk just south of the pick-up/drop-off area would reduce vehicular speeds along Bolivar Drive.

South of Bancroft Way, the pathway would continue with a 12-foot width generally along its current alignment adjacent to the Aquatic Park Main Lagoon and connect with the existing Dreamland Playground and paths that continue south with the open space area. Bolivar Drive south of Bancroft

Way would accommodate two-way travel within an approximately 19.2 to 22-foot right-of-way with up to 26 perpendicular parking spaces. Considering that this segment of Bolivar Drive is a cul-de-sac and the low traffic volumes, the street would provide adequate width to accommodate the existing traffic volumes and vehicle maneuvers into and out of the parking spaces.

At-Grade Railroad Crossings. The proposed Project would be located just west of active railroad tracks, and adjacent to the following two at-grade railroad crossings:

- The at-grade crossing on Addison Street provides automated gate arms on the vehicular approach directions, overhead flashing warning devices, median bollards to minimize vehicles crossing the tracks when the gates are down, and paved pedestrian crossings. The Project's north driveway on Addison Street would be about 100 feet west of the at-grade crossing. The Project is estimated to add about 100 AM and 120 PM peak hour vehicles to the at-grade crossing on Addison Street, increasing the total traffic volume crossing the at-grade crossing to about 380 vehicles during the AM peak hour and 320 vehicles during the PM peak hour.

- The at-grade crossing on Bancroft Way provides automated gate arms on the vehicular approach directions and flashing warning devices, and the pedestrian crossings do not meet ADA standards. The proposed Project's south driveway on Bancroft Way would be about 75 feet west of the at-grade crossing. The proposed Project is estimated to add about 100 AM and 170 PM peak hour vehicles to the at-grade crossing on Bancroft Way, increasing the total traffic volume crossing the at-grade crossing to about 150 vehicles during the AM peak hour and 230 vehicles during the PM peak hour.

At both at-grade crossings, most of the AM peak hour vehicles would be in the westbound direction heading to the Project site and most of the PM peak hour vehicles would be in the eastbound direction leaving the site.

As described above, if one or both of the garage entries are controlled by gates, the gates would be located inside the garage and at least 100 feet from the street, which would be adequate for entering vehicles to queue within the garage and minimize the potential for queue spillover onto Addison Street or Bancroft Way. The TIA determined that average and 95th percentile[160] queues at the intersections along Addison Street and Bancroft Way adjacent to the railroad tracks would not be expected to spill back and block the at-grade crossings.

In addition to automobile traffic, the Project would increase the number of pedestrians and cyclists crossing the two at-grade crossings. Both Addison Street and Bancroft Way are currently Class III bike routes. The City of Berkeley Bicycle Plan identifies Addison Street as a future bicycle boulevard.

Independent of the proposed Project, UPRR is planning to activate an additional track along the existing active rail line, which may trigger improvements at the at-grade railroad crossings in the vicinity of the project site. The Project applicant is coordinating with UPRR, the CPUC, and the City of

[160] 95th percentile queue is defined as the queue length that has only a five percent probability of being exceeded during the analyzed peak hour.

Berkeley to determine the appropriate safety improvements at the two at-grade railroad crossings, the timing for these improvements, and the responsible party.

The Project applicant, representatives from the UPRR, CPUC, and City of Berkeley conducted a field diagnostic meeting at the two at-grade railroad crossings on June 25, 2020 to discuss the proposed Project, the UPRR project, and potential safety improvements needed to accommodate both projects. Based on this and subsequent meetings, potential improvements are under consideration at the two at-grade crossings. To ensure that potential conflicts associated with increased pedestrian and cyclist activity associated with the proposed Project are avoided and would be reduced to a less-than-significant level, one or more of these improvements shall be implemented in coordination with UPRR, CPUC, and the City of Berkeley.

Mitigation Measure TRA-1: One or more of the following improvements at the Addison Street and Bancroft Way at-grade railroad crossings shall be implemented prior to issuance of a certificate of occupancy, in coordination with the Union Pacific Railroad, the California Public Utilities Commission, and the City of Berkeley.

- Potential improvements at the Addison Street at-grade crossing shall include one or more of the following:
  - Relocate the existing gate on eastbound Addison Street to improve truck turns from the service access driveway;
  - Install pedestrian warning devices in the northwest and southeast quadrants of the crossing; and
  - If a permanent median is installed on Addison Street, consider providing mountable curbs to allow large trucks and emergency vehicles to access the service access driveway;
- Potential improvements at the Bancroft Way at-grade crossing shall include one or more of the following:
  - Improve the automatic gate and warning devices at the crossing;
  - Parking on the north side of Bancroft Way west of the railroad tracks would already be eliminated. Note that parking on the south side of Bancroft Way east of the tracks is currently prohibited.
  - Improve the sidewalk on the north side of Bancroft Way, including across the railroad tracks, to meet ADA requirements.

Implementation of these improvements would ensure potential impacts related to pedestrian and bicycle safety at the at-grade railroad crossings would be less than significant.

e. Would the Project result in inadequate emergency access? ***(Less-Than-Significant Impact)***

Emergency vehicle access to the Project site would be provided from Addison Street and Bancroft Way. The proposed Project would not modify the existing roadway network such that it would result in a change in the access for emergency vehicles to or adjacent to the Project site. The streets surrounding the Project site, including Bolivar Drive on the west side of the Project site and the service access driveway on the east would accommodate all fire apparatuses. Although the automobile lane on Bolivar Drive would be narrowed to 11.5 feet and converted from a two-way roadway to a one-way southbound direction, the street would continue to be accessible for fire apparatuses because the automobile lane would be separated from the pathway by a buffer with raised "armadillo" dividers, which can be mounted by emergency vehicle and allow the use of the full 27 feet of width on the street. Additionally, the conversion of Bolivar Drive into a one-way street would not result in inadequate emergency access, as it would not include any barriers that would prevent access in the event of an emergency. Emergency vehicles would be able to access Bolivar Drive from either direction, if necessary.

As previously described, the nearest fire station to the Project site is Station 1 at 2442 Eighth Street just north of Dwight Way, about 0.5 miles southeast of the Project site. Although general traffic congestion may delay emergency vehicle response during peak commute times, response times are expected to remain less than five minutes. Therefore, the proposed Project would have a less-than-significant impact related to emergency access.

3.18 TRIBAL CULTURAL RESOURCES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 Public Resources Code 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

a. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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 Public Resources Code 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 Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. ***(Less-Than-Significant with Mitigation)***

As previously described in Section 1.0, Project Information, a request form describing the Project and map depicting the Project site was sent to the NAHC in West Sacramento requesting a list of tribes eligible to consult with the City, pursuant to Public Resources Code section 21080.3.1. On March 12, 2020, the NAHC responded in a letter with a list of tribal contacts. The City sent letters to these individuals via certified mail on March 18, 2020, notifying them of their opportunity to consult for this Project.

On July 15, 2020, Ms. Gould, representative of the Lisjan Tribe responded to the City's email and requested more information and potential consultation. The City and archaeological consultants

met with Ms. Gould and other representatives of the Lisjan Tribe on the following dates to discuss the Project, share information, and identify potential mitigation measures: August 26, September 2, September 9, September 23, November 4, November 18, and December 16, 2020. At the September 23 meeting, representatives from the Lisjan Tribe, the City, and the archaeological consultant teams met at the Project site. The last two meetings were attended by representatives of the Project applicant team. The final consultation meeting was held on December 16, 2020. In advance of these meetings, the Lisjan Tribe was provided with project plans and the report describing the methods and results of archaeological test excavation conducted by Archeo-Tec in 2019.[161] During these meetings, the Lisjan Tribe representatives articulated concerns related to the potential for encountering precontact archaeological deposits during ground disturbance construction activities; the potential for the disturbance of human remains associated with ancestral burials; cultural significance of views of the western gate (Golden Gate) from the elevated portion of the site adjacent to Bolivar Drive; and the inclusion of traditional medicinal plants in proposed landscaping. In addition, during the consultation process, the Lisjan Tribe also inquired about the potential for reinterring ancestral remains within the site if they were encountered and could not be left in place, as well as the possibility of including a marker to commemorate the fact that the site lies on Ohlone land.

At the November 18 and December 16 meetings, the applicant team presented plans for the inclusion of a garden area at the southeastern quadrant of Bolivar Drive and Addison Street with winding paths and native plants, and the Lisjan Tribe provided a list of recommended native and medicinal plants for inclusion in the landscaping plans. In response to concerns about potential views of the western gate from the Project site, the applicant team presented an elevation analysis that showed those views relative to the proposed development. The applicant also presented plans to include a public plaza/viewing area on Bancroft Way, near the intersection of Bolivar Drive. This viewing area would consist of a deck area with views oriented towards the western gate and vegetation would consist of native and medicinal plantings. This area would be available for tribal use to observe religious practices. Interpretive signage was also discussed. These improvements have been incorporated into the proposed Project and are identified as Project-specific conditions of approval, as follows:

> ***Project-Specific COA-1:*** The final design and landscaping plans for the proposed Project shall include a publicly-accessible garden area near the corner of Addison Street and Bolivar Drive and consisting of raised planter beds planted with a selection of native plants identified in the plant list provided by the Confederated Villages of Lisjan.
>
> ***Project-Specific COA-2:*** The final design and landscaping plans for the proposed Project shall include a publicly-accessible viewing area/plaza on Bancroft Way, near the corner of Bolivar Drive, that optimizes available views of the western gate (Golden Gate Bridge). Plantings in this area shall consist of a selection of native plants identified in the plant list provided by the Confederated Villages of Lisjan. Plantings shall also include vegetation that reduces the potential for bird strikes in this area, consistent with the requirements of Mitigation Measure BIO-1.

[161] Archeo-Tec. 2020, op. cit.

Project-Specific COA-3: The publicly-accessible viewing area/plaza on Bancroft Way shall include interpretive signage developed in consultation with the Confederated Villages of Lisjan and a qualified archaeologist. The signage shall be installed prior to issuance of a certificate of occupancy.

In response to concerns related to ground disturbing activities at the Project site and the potential to encounter tribal cultural resources, including human remains, the City stated during the consultation meetings that archaeological and tribal monitoring of ground-disturbing construction, as called for in Mitigation Measure CUL-3, would occur to identify potential impacts to archaeological deposits and human remains. As described in Section 3.5, Cultural Resources, no archaeological historical resources were identified at the Project site. The Project site is underlain by a 1.5- to 5.5-foot layer of historic and modern fill. Below the fill, natural alluvial soils and Holocene Bay Mud were identified and are therefore potentially sensitive for archaeological resources.

If significant archaeological deposits were unearthed during project construction, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). The proposed Project would have a potentially significant impact on archaeological historical resources unless mitigation described under Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 are incorporated. Due to the sensitivity of the area for the presence of archaeological resources, these measures replace and supplement the City's related COAs for accidental discovery of archeological and tribal cultural resources. With implementation of these measures, impacts to archaeological deposits and human remains that may qualify as Tribal Cultural Resources would be less than significant. The potential impact would be substantially reduced through the implementation of measures developed as the result of consultation conducted per the provisions of Assembly Bill 52, which requires an opportunity for tribal input on the potential for such impacts, as well as feasible means to reduce the severity of the impacts. The inclusion of traditional medicinal plants in landscaping plans, the provision of a re-interment area for disturbance human remains, the availability of a common area for tribal religious observations and practices, and the requirement for tribal and archaeological monitoring of ground-disturbing construction provide the means for addressing potential deposits and remains in a manner that is respectful of tribal perspectives and concerns.

3.19 UTILITIES AND SERVICE SYSTEMS

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater 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?	☐	☐	☒	☐

a. Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? ***(Less-Than-Significant Impact)***

The EBMUD Orinda Water Treatment Plant (Orinda WTP) and the Main Wastewater Treatment Plant (MWWTP) serve the Project site and surrounding area.[162] The proposed Project would connect to existing water delivery and sanitary sewer systems within the vicinity of the site. The proposed Project would connect to these existing facilities and it is anticipated that these pipelines would have sufficient capacity to support Project water and wastewater flows. However, as a condition of project approval, the Project applicant would be required to coordinate with EBMUD, the City's Fire Department, and the City's Public Works Department to assess water and wastewater flow and ensure the proposed Project would comply with the applicable requirements.

The proposed Project would include new connections and upgrades to existing stormwater infrastructure and a new storm drain along Bolivar Drive within the vicinity of the site. The existing Project site is developed with three buildings and a soil and mulch facility, with stockpiles of various soil and mulch materials stored on a concrete pad. Development of the Project would result in 331,198 square feet of total new impervious surface area (56,831 square feet of replaced impervious surface area and 274,367 new impervious surface area). Runoff would be treated in accordance with the applicable MRP, including C.3 requirements, before flowing to the City's storm

[162] East Bay Municipal Utility District. 2016. *2015 Urban Water Management Plan*. June 28.

drain. Please see Section 3.10, Hydrology and Water Quality, for a complete discussion of stormwater drainage facilities and associated impacts, which would be less than significant.

The Project site is currently served by electrical, natural gas, and telecommunications facilities. Therefore, because the proposed Project would consist of infill development on a previously developed site that is currently served by utilities, the expansion of electrical, natural gas, or telecommunications facilities would not be required. In addition, as described in Section 1.0, Project Information, the proposed buildings would be designed to be all-electric, and therefore would not include the use of any traditional gas systems or facilities. Therefore, this impact would be less than significant.

b. Would the Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(Less-Than-Significant Impact)***

Water service at the Project site and in the Project area is provided by EBMUD. 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 mgd from the Mokelumne River.[163] Average daily water demand within the entire EBMUD service area is projected to be 267 million gallons per day (mgd) in 2020, and 312 mgd in 2040.[164]

The proposed Project would increase the building area on the site from approximately 55,000 square feet to approximately 461,822 square feet and increase the number of employees from approximately 87 to approximately 1,600. For research and laboratory and office uses, based on similar projects with similar uses, it is assumed that each employee would increase the demand for water by approximately 20 gallons per day (or 0.00002 mgd), or to approximately 0.032 mgd compared to existing conditions (assumed to be approximately 0.00174 mgd). This accounts for approximately 0.01 percent of EBMUD's projected service-wide daily water demand for 2020. Furthermore, EBMUD's projected water demand accounts for projected growth within the region as identified by the Association of Bay Area Governments. Refer to Section 3.14, Population and Housing. EBMUD would not require new or expanded water entitlements to serve the proposed Project.

EBMUD completed development of a revised Water Supply Management Program (WSMP) 2040 in April of 2012, which is the District's plan for providing water to its customers for a span of 30 years.[165] According to the WSMP, EBMUD's water supplies are estimated to be sufficient during the planning period (2010-2040) in normal and single dry years. Therefore, EBMUD would have

[163] Ibid.

[164] The planning level of demand differs from actual 2015 demand, as the planning level does not reflect the effects of implementing measures to reduce water use. After a drought, a rebound effect is expected wherein demand rises back to projected levels, thus, the projected demand reflects the total planning level demand.

[165] East Bay Municipal Utility District. 2012. *Water Supply Management Program 2040 Plan*. April.

adequate water supply to provide water service to the proposed Project and the impact related to sufficient water supplies would be less than significant.

The WSMP 2040 emphasizes maximum conservation and recycling strategies, with a total of 50 mgd of future supply to be provided from those two component categories. However, looking toward 2040, EBMUD's current supply is insufficient to meet customer needs during multi-year droughts despite EBMUD's aggressive water conservation and recycled water programs.[166] According to the WSMP, the combination of rationing, conservation, and raw and recycled water will satisfy increased customer demand through 2040.[167] Supplemental supply will also be needed to keep rationing at a lower level and to meet the need for water in drought years.

In response to Governor's Executive Order B-29-15, issued on April 1, 2015, EBMUD implemented mandatory water restrictions on all customers within its service area, with the goal of reducing water demand by 20 percent. EBMUD's Policy 3.07 ensures that priority for new water service connections during restrictive periods is given to proposed developments within EBMUD's service area that include housing units affordable to lower income households in accordance with California Government Code 65589.7. The policy also states that EBMUD will not deny an application for services to a proposed development that includes affordable housing unless certain conditions are met (e.g., water shortage emergency conditions are in effect). On May 10, 2016 EBMUD declared an end to the drought emergency in its service area, and eased the drought level to Stage 0, indicating normal water supplies. On April 7, 2017, the drought emergency was lifted for Alameda County. The State Water Board will maintain urban water use reporting requirements and prohibitions on wasteful practices.[168]

Future users of the site (and all EBMUD customers) should plan for shortages in times of drought. Policy EM-26 in the City of Berkeley General Plan promotes water conservation through City programs and requirements, including cooperation with EBMUD to make recycled water available for irrigation and other uses. Compliance with Policy EM-26 of the City's General Plan for incorporating water conservation measures into the Project design will ensure efficient use of water at the Project site and minimize the Project's potential water demand such that the Project's impact would be less than significant.

EBMUD also imposes a system capacity charge on new developments to fund system maintenance and the development of new water sources. The Project applicant would be required to pay this fee and undertake water conservation measures to conserve water such as the installation of low-flow toilets. In addition, the Project applicant would also be required to comply with the City's condition of approval related to Water Efficient Landscaping. The applicant would be required to provide a Bay-Friendly Basics Landscape Checklist that includes detailed notes of any measures that would not be fully met by the Project (if any). Landscape improvements are required to be consistent with the current versions of the State's Water Efficient Landscape Ordinance and Section 31 of EBMUD's Water Service Regulations (Water Efficiency Requirements), which require applicable water-

[166] East Bay Municipal Utility District. 2016, op. cit.
[167] East Bay Municipal Utility District. 2012, op. cit.
[168] California, State of. 2017. *Statewide Water Savings Exceed 25 Percent in February; Conservation to Remain a California Way of Life.* April 7.

efficiency measures be installed on water-using equipment at the Project applicant's expense. The proposed Project meets this by including installation of water-efficient fixtures. The Project applicant would also be required to coordinate with EBMUD and the City of Berkeley Fire Department to assess fire flow requirements and comply with them as part of the Project.

c. Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? ***(Less-Than-Significant Impact)***

In Berkeley, sanitary sewage flows to the EBMUD's wastewater interceptors, which then directly flows to EBMUD's MWWTP in the City of Oakland. Berkeley's network of pipes consists of lower laterals and sewer mains. Building connects at the upper laterals are privately owned and maintained. Within the City of Berkeley, there are approximately 400 miles of sanitary sewer mains, with an estimated 28,000 lateral connections. The sewer mains vary from 1 to 100 years old, and vary in size from 6 to 48 inches in diameter.

The City's sewer system is connected to trunk lines that convey flows to the MWWTP. The MWWTP has a primary treatment capacity of 320 million gallons per day (mgd) and a secondary treatment capacity of 168 mgd.[169] Storage basins provide plant capacity for a short-term hydraulic peak of 415 mgd. The average annual daily flow into the MWWTP is approximately 63 mgd, representing approximately 37.5 percent of the plant's secondary treatment capacity. Treated effluent is disinfected, dechlorinated, and discharged through a deep-water outfall 1 mile off the East Bay shoreline into San Francisco Bay.

In compliance with the July 28, 2014 Consent Decree, the City has implemented a long-term mandated Sanitary Sewer Capital Improvement Program to eliminate Sanitary Sewer Overflows and reduce storm water infiltration and inflow (I/I) in to the sanitary sewer system. Under this program, the City utilizes a comprehensive asset management approach based on complex and evolving hydrologic and hydraulic modeling and condition assessments to repair, replace, or upgrade the City's portion of the sanitary sewer system, ultimately to aid EBMUD in eliminating discharges from their Wet Weather Facilities (which provide additional treatment capacity during storm events) by the end of 2035.

According to a capacity assessment conducted for the City's sewer system,[170] future development within the West Berkeley area includes a total projected development of 1,420 dwelling units and 2 million square feet of non-residential uses. The Project applicant is required to submit projected flow rate information during the building permit process to ensure whether upgrades to the sanitary sewer would be needed as a result of the proposed Project.

The proposed Project would generate wastewater, treated by the EBMUD treatment facilities. EBMUD is required to meet applicable RWQCB treatment requirements in compliance with the

[169] East Bay Municipal Utility District. 2016. Wastewater Treatment. Website: www.ebmud.com/wastewater/collection-treatment/wastewater-treatment (accessed July 2020)

[170] RMC Water and Environment. 2012. *Final Report, Sewer System Hydraulic Modeling and Capacity Assessment*. October.

MRP. In addition, the proposed Project would use an incremental portion of EBMUD's wet weather treatment capacity. Wastewater generated by the proposed Project is assumed to be 10 percent of water demand, or 0.0032 mgd (refer to Section 3.19.b, above), which comprises less than one percent of the remaining capacity of the MWWTP. Therefore, the proposed Project would not generate wastewater exceeding the wastewater treatment requirements of the RWQCB.

Wastewater discharges that may occur at the Project site would be required to comply with the terms of the applicable MRP and may be subject to monitoring by EBMUD to ensure that the development's sewage discharge does not impair the ability of the MWWTP to meet wastewater treatment objectives and requirements. Therefore, the impact to wastewater treatment requirements would be less than significant.

d. Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? ***(Less-Than-Significant Impact)***

The City of Berkeley is one of the few cities in Northern California to operate its own refuse collection system. The City provides curbside recycling and refuse collection services to the Project site. There are two permitted landfills in Alameda County with the capacity to accommodate solid waste generated in Berkeley: Altamont Landfill and the Vasco Road Sanitary Landfill. The combined permitted capacity of waste for these two landfills is 95 million cubic yards, which the proposed Project would not exceed. Solid waste from the site would be transported to the Berkeley Transfer Station, located at 1021 Second Street, and then on to the Altamont Landfill and Resource Recovery Facility, located near the Altamont Pass, northeast of the City of Livermore. In 2011, the City of Berkeley diverted approximately 74 percent of its solid waste from landfills through recycling and/or composting efforts.[171] The proposed Project would not be served by a landfill with insufficient capacity to accommodate the Project's waste disposal needs and this impact would be less than significant.

The existing Project site consists of three buildings and surface pavements. It is estimated that approximately 4,750 tons of demolition waste would be generated by the Project. All demolition and construction waste would be recycled consistent with State and City requirements. The State requires 65 percent diversion (recycling and reuse) of construction waste, and the City requires 100 percent of concrete, asphalt, and land clearing debris to be diverted from landfills. The Project applicant would be required to prepare a Construction Demolition Recycling Plan prior to issuance of a Demolition Permit for the proposed Project. The purpose of the plan is to divert as much debris as possible from the waste stream, consistent with, and in addition to, State and City requirements.

Prior to approval of large development projects, the City of Berkeley Solid Waste Management Division staff reviews proposed plans for the adequate design of trash and recycling facilities. Alameda County Waste Management Authority (ACWMA) Ordinance 2008-01 requires businesses in Alameda County generating four or more cubic yards of garbage per week to separate all plant

[171] Berkeley, City of. 2012. *Department of Public Works Memo to City Council and Mayor. Solid Waste Management: Accomplishments and Operational Improvements*. November 13.

debris from garbage and recyclable materials. Additionally, development projects that require a use permit are required to comply with the following COA that addresses these potential impacts:

> ***COA: Recycling and Organics Collection.*** The Project applicant shall provide recycling and organics collection areas for occupants, clearly marked on site plans, which comply with the Alameda County Mandatory Recycling Ordinance (ACWMA Ordinance 201-01).

Therefore, the proposed Project would not generate solid waste in excess of local standards, and this impact would be less than significant.

e. Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(Less-Than-Significant Impact)***

The proposed Project would comply with all Federal, State, and Local solid waste statutes and/or regulations related to solid waste. Also refer to Section 3.19.f.

3.20 WILDFIRE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

a. Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan? ***(Less-Than-Significant Impact)***

As described in Section 3.9, Hazards and Hazardous Materials, the proposed Project would not impair the implementation of, or physically interfere with, and adopted emergency response plan and is not within a very high fire hazard severity zone.[172] In addition, the Project site is not located within a State Responsibility Area (SRA) for fire service.[173] Therefore, the proposed project would have no impact.

b. Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? ***(No Impact)***

Refer to Section 3.20.a. The proposed project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire and no impact would occur.

[172] Berkeley, City of. 2002, op. cit.

[173] California, State of. 2020. Board of Forestry and Fire Protection. State Responsibility Area View. Website: bof.fire.ca.gov/projects-and-programs/state-responsibility-area-viewer (accessed July 2020).

c. Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? ***(No Impact)***

Refer to Section 3.20.a. The proposed project is not located within an SRA for fire service and is not within a very high fire hazard severity zone. Therefore, the proposed project would not require the installation or maintenance of associated infrastructure and no impact would occur.

d. Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? ***(No Impact)***

Refer to Section 3.20.a and 3.20.b. The project site is generally level and is not located within an SRA for fire service or a very high fire hazard severity zone. Therefore, the proposed project would not expose people or structures to significant risks as a result of post-fire slope instability or drainage and runoff changes.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

a. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? ***(Less-Than-Significant with Mitigation Incorporated)***

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, CUL-4, and GEO-1 would ensure that potential impacts to historic and archaeological resources that could be uncovered during construction activities would be reduced to a less-than-significant level. Implementation of Mitigation Measures BIO-1 through BIO-4 would ensure that potential impacts related to special-status species, State or federally protected wetlands, and protected trees are reduced to a less-than-significant level. Therefore, with the incorporation of mitigation measures, development of the proposed Project would not: (1) degrade the quality of the environment; (2) substantially reduce the habitat of a fish or wildlife species; (3) cause a fish or wildlife species population to drop below self-sustaining levels; (4) threaten to eliminate a plant or animal community; (5) reduce the number or restrict the range of a rare or endangered plant or animal; or (6) eliminate important examples of the major periods of California history.

b. Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? ***(Less-Than-Significant with Mitigation Incorporated)***

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts." Section 15130 of the CEQA Guidelines requires evaluation of potential environmental impacts when the project's incremental effect is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of "reasonably foreseeable probable future" projects, per CEQA Section 15355. Cumulative impacts can result from a combination of the proposed project together with other closely related projects that cause an adverse change in the environment. Cumulative impacts can result from individually minor but collectively significant projects taking place over time.

The proposed Project's impacts would be individually limited and not cumulatively considerable, because these impacts are either temporary in nature (e.g., limited to the construction period) or are limited to the Project site (e.g., potential discovery of unknown cultural or paleontological resources). The potentially significant impacts that can be reduced to a less-than-significant level with implementation of recommended mitigation measures include the topics of biological resources, cultural resources, hydrology and water quality, and transportation. Specifically, implementation of Mitigation Measures BIO-1 through BIO-2 would ensure that impacts to special status-species are reduced to a less-than-significant level, implementation of Mitigation Measures BIO-3 would ensure that impacts to State or federally protected wetlands are reduced to a less-than-significant level, and Mitigation Measure BIO-4 would ensure that impacts related to protected trees are reduced to a less-than-significant level. For the topics of cultural and tribal cultural resources, potentially significant impacts to archaeological and tribal resources would be reduced to less-than-significant levels with implementation of Mitigation Measures CUL-1a through CUL-1d and Project-Specific COA-1 through -3. These impacts would primarily be related to construction-period activities, would be temporary in nature, and would not substantially contribute to any potential cumulative impacts associated with these topics. Furthermore, implementation of Mitigation Measure HYD-1, which requires a Final Hydrology Study to demonstrate that on-site drainage facilities are designed and adequately sized to accommodate stormwater runoff during flooding events, would ensure that operation-period flooding impacts would not occur. Similar measures are required for development projects throughout the City and the County, in compliance with Provision C.3 of the Clean Water Program. Finally, Mitigation Measures TRA-1 and TRA-2 would ensure that potential localized impacts related to pedestrian and bicycle safety at the at-grade railroad crossings would be less than significant.

Implementation of the City's COAs would also further ensure that impacts related to construction-period air quality, nesting birds, paleontological resources, greenhouse gas emissions, release of hazardous materials into the environment, construction- and operation-period water quality, noise and vibration, and solid waste disposal would not occur. For the topics of aesthetics, agricultural and

forestry resources, energy, land use and planning, mineral resources, population and housing, public services, recreation, transportation, utilities and service systems (water, wastewater, and storm drainage), and wildfire, the Project would have no impacts or less-than-significant impacts, and therefore, the Project would not substantially contribute to any potential cumulative impacts for these topics. All environmental impacts that could occur as a result of the proposed Project would be reduced to a less-than-significant level through the implementation of the mitigation measures recommended in this document.

When future development proposals are considered by the City, these proposals would undergo environmental review pursuant to CEQA, and when necessary, mitigation measures would be adopted as appropriate. In most cases, this environmental review and compliance with Project conditions of approval, relevant policies and mitigation measures, and the General Plan, and compliance with applicable regulations would ensure that significant impacts would be avoided or otherwise mitigated to less-than-significant levels.

Implementation of these measures would ensure that the impacts of the Project and other projects within the vicinity would be below established thresholds of significance and that these impacts would not combine with the impacts of other cumulative projects to result in a cumulatively considerable impact on the environment as a result of Project development. Therefore, this impact would be less than significant.

c. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ***(No Impact)***

The proposed Project would not result in any environmental effects that would cause substantial direct or indirect adverse effects to human beings, beyond those topics discussed in Sections 3.1 through 3.21 of this Initial Study.

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APPENDIX A

AIR QUALITY EMISSIONS DATA

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600 Addison Street Project

Bay Area AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	521.81	1000sqft	5.57	521,810.00	0
Enclosed Parking with Elevator	365.80	1000sqft	2.00	365,800.00	0
Other Asphalt Surfaces	35.99	1000sqft	0.83	35,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E 2015)

Land Use - Total project site is 8.4 acres

Construction Phase - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Assuming use of skid steer loaders and tractors/loaders/backhoes

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Trips and VMT - Based on construction activities and schedule assumptions provided by Project Applicant

Demolition - Based on construction activities and schedule assumptions provided by Project Applicant

Grading - Based on construction activities and schedule assumptions provided by Project Applicant

Vehicle Trips - Trip generation based on project's traffic study

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and Tier 4 mitigation

Mobile Land Use Mitigation -

Energy Mitigation - Assuming 3.3% exceedance of 2019 Title 24 standards and the proposed Project would also incorporate photovoltaic systems to provide renewable energy onsite such that the core building operation would be net zero site energy at the onset of the building's operation.

Waste Mitigation - The proposed Project would be consistent with the CalRecycle Waste Diversion and Recycling Mandate which would reduce solid waste production by 75 percen

Water Mitigation -

Table Name	Column Name	Default Value	New Value
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

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tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	10.00	32.00
tblGrading	AcresOfGrading	90.00	8.40
tblGrading	AcresOfGrading	52.50	8.40
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	59,000.00
tblGrading	MaterialExported	0.00	15,000.00
tblLandUse	LotAcreage	11.98	5.57
tblLandUse	LotAcreage	8.40	2.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	162.00
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tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00

tblOffRoadEquipment	HorsePower	63.00	62.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
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tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
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tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00

tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	268.00	605.00
tblTripsAndVMT	HaulingTripNumber	350.00	3,900.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	7,375.00	11,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
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tblTripsAndVMT	VendorTripNumber	0.00	1.00
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tblTripsAndVMT	WorkerTripNumber	67.00	8.00
tblTripsAndVMT	WorkerTripNumber	18.00	25.00

tblVehicleTrips	ST_TR	1.90	8.34
tblVehicleTrips	SU_TR	1.11	8.34
tblVehicleTrips	WD_TR	8.11	8.34

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.2119	3.6803	1.8266	7.2400e-003	0.4445	0.0815	0.5259	0.1782	0.0753	0.2534	0.0000	683.5096	683.5096	0.0878	0.0000	685.7051
2022	3.2038	3.4933	3.9288	6.8700e-003	0.1692	0.1766	0.3458	0.0743	0.1674	0.2417	0.0000	597.2159	597.2159	0.1182	0.0000	600.1716
2023	0.2358	2.0934	2.2976	4.1800e-003	0.3295	0.1003	0.4298	0.1697	0.0945	0.2642	0.0000	362.5935	362.5935	0.0742	0.0000	364.4488
Maximum	**3.2038**	**3.6803**	**3.9288**	**7.2400e-003**	**0.4445**	**0.1766**	**0.5259**	**0.1782**	**0.1674**	**0.2642**	**0.0000**	**683.5096**	**683.5096**	**0.1182**	**0.0000**	**685.7051**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0833	2.2178	1.6642	7.2400e-003	0.2704	8.5400e-003	0.2790	0.0991	8.3100e-003	0.1075	0.0000	683.5094	683.5094	0.0878	0.0000	685.7049
2022	2.9028	0.6128	4.1952	6.8700e-003	0.1088	9.8200e-003	0.1186	0.0421	9.7900e-003	0.0519	0.0000	597.2153	597.2153	0.1182	0.0000	600.1709
2023	0.0605	0.3248	2.4920	4.1800e-003	0.1705	5.9800e-003	0.1765	0.0823	5.9600e-003	0.0883	0.0000	362.5931	362.5931	0.0742	0.0000	364.4484
Maximum	**2.9028**	**2.2178**	**4.1952**	**7.2400e-003**	**0.2704**	**9.8200e-003**	**0.2790**	**0.0991**	**9.7900e-003**	**0.1075**	**0.0000**	**683.5094**	**683.5094**	**0.1182**	**0.0000**	**685.7049**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**16.56**	**65.95**	**-3.71**	**0.00**	**41.71**	**93.21**	**55.89**	**47.04**	**92.87**	**67.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**9-1-2021**	**11-30-2021**	3.1341	1.8944
2	**12-1-2021**	**2-28-2022**	1.7561	0.5308
3	**3-1-2022**	**5-31-2022**	0.7377	0.1148
4	**6-1-2022**	**8-31-2022**	1.9321	1.2241
5	**9-1-2022**	**11-30-2022**	2.6444	1.8863
6	**12-1-2022**	**2-28-2023**	0.8010	0.2272
7	**3-1-2023**	**5-31-2023**	0.6684	0.1113
8	**6-1-2023**	**8-31-2023**	1.0073	0.1653
9	**9-1-2023**	**9-30-2023**	0.2275	0.0377
		Highest	3.1341	1.8944

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3452	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176
Energy	0.0696	0.6331	0.5318	3.8000e-003		0.0481	0.0481		0.0481	0.0481	0.0000	1,597.2246	1,597.2246	0.0933	0.0292	1,608.2601
Mobile	1.0197	4.5649	11.9448	0.0451	4.0590	0.0368	4.0958	1.0894	0.0344	1.1237	0.0000	4,144.6771	4,144.6771	0.1417	0.0000	4,148.2183
Waste						0.0000	0.0000		0.0000	0.0000	8.0486	0.0000	8.0486	0.4757	0.0000	19.9401
Water						0.0000	0.0000		0.0000	0.0000	81.3981	207.0534	288.4515	8.3786	0.2012	557.8701
Total	**3.4345**	**5.1980**	**12.4851**	**0.0489**	**4.0590**	**0.0849**	**4.1439**	**1.0894**	**0.0825**	**1.1719**	**89.4467**	**5,948.9715**	**6,038.4182**	**9.0893**	**0.2304**	**6,334.3062**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.3452	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176
Energy	0.0645	0.5861	0.4923	3.5200e-003		0.0445	0.0445		0.0445	0.0445	0.0000	637.9869	637.9869	0.0122	0.0117	641.7782
Mobile	0.8666	3.6324	8.3461	0.0282	2.4248	0.0237	2.4485	0.6508	0.0221	0.6729	0.0000	2,592.3373	2,592.3373	0.0994	0.0000	2,594.8222
Waste						0.0000	0.0000		0.0000	0.0000	2.0122	0.0000	2.0122	0.1189	0.0000	4.9850
Water						0.0000	0.0000		0.0000	0.0000	65.1185	165.6427	230.7612	6.7029	0.1610	446.2961
Total	**3.2762**	**4.2186**	**8.8469**	**0.0317**	**2.4248**	**0.0683**	**2.4930**	**0.6508**	**0.0667**	**0.7175**	**67.1306**	**3,395.9835**	**3,463.1141**	**6.9335**	**0.1727**	**3,687.8991**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.61**	**18.84**	**29.14**	**35.15**	**40.26**	**19.60**	**39.84**	**40.26**	**19.14**	**38.78**	**24.95**	**42.91**	**42.65**	**23.72**	**25.06**	**41.78**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Demolition	Demolition	9/1/2021	9/21/2021	5	15	
2	Asphalt Demolition	Demolition	9/7/2021	9/20/2021	5	10	
3	Site Preparation	Site Preparation	9/22/2021	10/5/2021	5	10	
4	Rough Grading	Grading	10/6/2021	12/28/2021	5	60	
5	Utility Trenching	Trenching	12/29/2021	2/22/2022	5	40	
6	Fine Grading	Grading	1/12/2022	3/1/2022	5	35	
7	Building Construction	Building Construction	1/19/2022	9/12/2023	5	430	
8	Architectural Coating	Architectural Coating	7/6/2022	12/6/2022	5	110	
9	Finishing/Landscaping	Site Preparation	7/30/2023	9/12/2023	5	32	
10	Asphalt Paving	Paving	9/5/2023	9/12/2023	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 782,715; Non-Residential Outdoor: 260,905; Striped Parking Area: 24,107 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Demolition	Excavators	2	8.00	162	0.38
Building Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition	Excavators	2	8.00	162	0.38

Asphalt Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Asphalt Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	2	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Rough Grading	Excavators	1	8.00	162	0.38
Rough Grading	Graders	1	8.00	174	0.41
Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Rough Grading	Scrapers	1	8.00	361	0.48
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	162	0.38
Utility Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Fine Grading	Excavators	1	8.00	158	0.38
Fine Grading	Graders	1	8.00	174	0.41
Fine Grading	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading	Scrapers	1	8.00	361	0.48
Fine Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	3	8.00	62	0.31
Architectural Coating	Air Compressors	3	8.00	78	0.48
Finishing/Landscaping	Rubber Tired Dozers	3	8.00	247	0.40
Finishing/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Demolition	7	15.00	2.00	605.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition	7	5.00	0.00	3,900.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	7	15.00	2.00	11,700.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	15.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	6	15.00	1.00	180.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	50.00	2.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	6	8.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	7	25.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	3	5.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0290	0.0000	0.0290	4.4000e-003	0.0000	4.4000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0225	0.2215	0.2208	3.1000e-004		0.0108	0.0108		0.0101	0.0101	0.0000	26.8314	26.8314	7.6100e-003	0.0000	27.0216
Total	**0.0225**	**0.2215**	**0.2208**	**3.1000e-004**	**0.0290**	**0.0108**	**0.0399**	**4.4000e-003**	**0.0101**	**0.0145**	**0.0000**	**26.8314**	**26.8314**	**7.6100e-003**	**0.0000**	**27.0216**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4500e-003	0.0547	0.0107	1.3000e-004	2.5600e-003	1.3000e-004	2.6900e-003	7.0000e-004	1.3000e-004	8.3000e-004	0.0000	12.8818	12.8818	8.0000e-004	0.0000	12.9017
Vendor	5.0000e-005	1.5700e-003	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3890	0.3890	2.0000e-005	0.0000	0.3895
Worker	3.5000e-004	2.4000e-004	2.5200e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7515	0.7515	2.0000e-005	0.0000	0.7519
Total	**1.8500e-003**	**0.0565**	**0.0136**	**1.4000e-004**	**3.5500e-003**	**1.4000e-004**	**3.6800e-003**	**9.7000e-004**	**1.4000e-004**	**1.1000e-003**	**0.0000**	**14.0223**	**14.0223**	**8.4000e-004**	**0.0000**	**14.0431**

3.2 Building Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0131	0.0000	0.0131	1.9800e-003	0.0000	1.9800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.6400e-003	0.0158	0.1837	3.1000e-004		4.8000e-004	4.8000e-004		4.8000e-004	4.8000e-004	0.0000	26.8314	26.8314	7.6100e-003	0.0000	27.0216
Total	**3.6400e-003**	**0.0158**	**0.1837**	**3.1000e-004**	**0.0131**	**4.8000e-004**	**0.0136**	**1.9800e-003**	**4.8000e-004**	**2.4600e-003**	**0.0000**	**26.8314**	**26.8314**	**7.6100e-003**	**0.0000**	**27.0216**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4500e-003	0.0547	0.0107	1.3000e-004	2.5600e-003	1.3000e-004	2.6900e-003	7.0000e-004	1.3000e-004	8.3000e-004	0.0000	12.8818	12.8818	8.0000e-004	0.0000	12.9017
Vendor	5.0000e-005	1.5700e-003	3.9000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3890	0.3890	2.0000e-005	0.0000	0.3895
Worker	3.5000e-004	2.4000e-004	2.5200e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7515	0.7515	2.0000e-005	0.0000	0.7519
Total	**1.8500e-003**	**0.0565**	**0.0136**	**1.4000e-004**	**3.5500e-003**	**1.4000e-004**	**3.6800e-003**	**9.7000e-004**	**1.4000e-004**	**1.1000e-003**	**0.0000**	**14.0223**	**14.0223**	**8.4000e-004**	**0.0000**	**14.0431**

3.3 Asphalt Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0379	0.0000	0.0379	5.7400e-003	0.0000	5.7400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0150	0.1476	0.1472	2.0000e-004		7.2300e-003	7.2300e-003		6.7200e-003	6.7200e-003	0.0000	17.8876	17.8876	5.0700e-003	0.0000	18.0144
Total	**0.0150**	**0.1476**	**0.1472**	**2.0000e-004**	**0.0379**	**7.2300e-003**	**0.0451**	**5.7400e-003**	**6.7200e-003**	**0.0125**	**0.0000**	**17.8876**	**17.8876**	**5.0700e-003**	**0.0000**	**18.0144**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.3300e-003	0.3524	0.0688	8.6000e-004	0.0165	8.6000e-004	0.0174	4.5400e-003	8.2000e-004	5.3600e-003	0.0000	83.0395	83.0395	5.1400e-003	0.0000	83.1681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	5.6000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1670	0.1670	0.0000	0.0000	0.1671
Total	**9.4100e-003**	**0.3524**	**0.0693**	**8.6000e-004**	**0.0167**	**8.6000e-004**	**0.0176**	**4.5900e-003**	**8.2000e-004**	**5.4100e-003**	**0.0000**	**83.2065**	**83.2065**	**5.1400e-003**	**0.0000**	**83.3352**

3.3 Asphalt Demolition - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0171	0.0000	0.0171	2.5800e-003	0.0000	2.5800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4200e-003	0.0105	0.1225	2.0000e-004		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	17.8876	17.8876	5.0700e-003	0.0000	18.0144
Total	**2.4200e-003**	**0.0105**	**0.1225**	**2.0000e-004**	**0.0171**	**3.2000e-004**	**0.0174**	**2.5800e-003**	**3.2000e-004**	**2.9000e-003**	**0.0000**	**17.8876**	**17.8876**	**5.0700e-003**	**0.0000**	**18.0144**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	9.3300e-003	0.3524	0.0688	8.6000e-004	0.0165	8.6000e-004	0.0174	4.5400e-003	8.2000e-004	5.3600e-003	0.0000	83.0395	83.0395	5.1400e-003	0.0000	83.1681
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	5.6000e-004	0.0000	2.0000e-004	0.0000	2.0000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1670	0.1670	0.0000	0.0000	0.1671
Total	**9.4100e-003**	**0.3524**	**0.0693**	**8.6000e-004**	**0.0167**	**8.6000e-004**	**0.0176**	**4.5900e-003**	**8.2000e-004**	**5.4100e-003**	**0.0000**	**83.2065**	**83.2065**	**5.1400e-003**	**0.0000**	**83.3352**

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0611	0.0000	0.0611	0.0332	0.0000	0.0332	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1807	0.1514	2.0000e-004		9.2500e-003	9.2500e-003		8.5100e-003	8.5100e-003	0.0000	17.3738	17.3738	5.6200e-003	0.0000	17.5142
Total	**0.0180**	**0.1807**	**0.1514**	**2.0000e-004**	**0.0611**	**9.2500e-003**	**0.0703**	**0.0332**	**8.5100e-003**	**0.0417**	**0.0000**	**17.3738**	**17.3738**	**5.6200e-003**	**0.0000**	**17.5142**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0168	0.6343	0.1238	1.5400e-003	0.0519	1.5500e-003	0.0534	0.0136	1.4800e-003	0.0151	0.0000	149.4711	149.4711	9.2600e-003	0.0000	149.7025
Vendor	3.0000e-005	1.0400e-003	2.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2593	0.2593	1.0000e-005	0.0000	0.2597
Worker	4.6000e-004	3.2000e-004	3.3600e-003	1.0000e-005	2.2100e-003	1.0000e-005	2.2200e-003	5.7000e-004	1.0000e-005	5.7000e-004	0.0000	1.0020	1.0020	2.0000e-005	0.0000	1.0026
Total	**0.0173**	**0.6356**	**0.1274**	**1.5500e-003**	**0.0542**	**1.5600e-003**	**0.0558**	**0.0142**	**1.4900e-003**	**0.0157**	**0.0000**	**150.7325**	**150.7325**	**9.2900e-003**	**0.0000**	**150.9647**

3.4 Site Preparation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0275	0.0000	0.0275	0.0150	0.0000	0.0150	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0104	0.1213	2.0000e-004		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	17.3737	17.3737	5.6200e-003	0.0000	17.5142
Total	**2.4000e-003**	**0.0104**	**0.1213**	**2.0000e-004**	**0.0275**	**3.2000e-004**	**0.0278**	**0.0150**	**3.2000e-004**	**0.0153**	**0.0000**	**17.3737**	**17.3737**	**5.6200e-003**	**0.0000**	**17.5142**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0168	0.6343	0.1238	1.5400e-003	0.0519	1.5500e-003	0.0534	0.0136	1.4800e-003	0.0151	0.0000	149.4711	149.4711	9.2600e-003	0.0000	149.7025
Vendor	3.0000e-005	1.0400e-003	2.6000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2593	0.2593	1.0000e-005	0.0000	0.2597
Worker	4.6000e-004	3.2000e-004	3.3600e-003	1.0000e-005	2.2100e-003	1.0000e-005	2.2200e-003	5.7000e-004	1.0000e-005	5.7000e-004	0.0000	1.0020	1.0020	2.0000e-005	0.0000	1.0026
Total	**0.0173**	**0.6356**	**0.1274**	**1.5500e-003**	**0.0542**	**1.5600e-003**	**0.0558**	**0.0142**	**1.4900e-003**	**0.0157**	**0.0000**	**150.7325**	**150.7325**	**9.2900e-003**	**0.0000**	**150.9647**

3.5 Rough Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1885	0.0000	0.1885	0.1003	0.0000	0.1003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0970	1.0096	0.8632	1.3400e-003		0.0483	0.0483		0.0444	0.0444	0.0000	117.6595	117.6595	0.0381	0.0000	118.6109
Total	**0.0970**	**1.0096**	**0.8632**	**1.3400e-003**	**0.1885**	**0.0483**	**0.2367**	**0.1003**	**0.0444**	**0.1447**	**0.0000**	**117.6595**	**117.6595**	**0.0381**	**0.0000**	**118.6109**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0280	1.0571	0.2063	2.5700e-003	0.0495	2.5900e-003	0.0521	0.0136	2.4700e-003	0.0161	0.0000	249.1186	249.1186	0.0154	0.0000	249.5042
Vendor	1.9000e-004	6.2700e-003	1.5600e-003	2.0000e-005	3.9000e-004	1.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.5561	1.5561	8.0000e-005	0.0000	1.5580
Worker	1.3800e-003	9.5000e-004	0.0101	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	3.0060	3.0060	7.0000e-005	0.0000	3.0076
Total	**0.0296**	**1.0643**	**0.2179**	**2.6200e-003**	**0.0534**	**2.6200e-003**	**0.0561**	**0.0147**	**2.5000e-003**	**0.0172**	**0.0000**	**253.6806**	**253.6806**	**0.0156**	**0.0000**	**254.0698**

3.5 Rough Grading - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0848	0.0000	0.0848	0.0451	0.0000	0.0451	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0164	0.0710	0.7914	1.3400e-003		2.1800e-003	2.1800e-003		2.1800e-003	2.1800e-003	0.0000	117.6594	117.6594	0.0381	0.0000	118.6107
Total	**0.0164**	**0.0710**	**0.7914**	**1.3400e-003**	**0.0848**	**2.1800e-003**	**0.0870**	**0.0451**	**2.1800e-003**	**0.0473**	**0.0000**	**117.6594**	**117.6594**	**0.0381**	**0.0000**	**118.6107**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0280	1.0571	0.2063	2.5700e-003	0.0495	2.5900e-003	0.0521	0.0136	2.4700e-003	0.0161	0.0000	249.1186	249.1186	0.0154	0.0000	249.5042
Vendor	1.9000e-004	6.2700e-003	1.5600e-003	2.0000e-005	3.9000e-004	1.0000e-005	4.1000e-004	1.1000e-004	1.0000e-005	1.3000e-004	0.0000	1.5561	1.5561	8.0000e-005	0.0000	1.5580
Worker	1.3800e-003	9.5000e-004	0.0101	3.0000e-005	3.5600e-003	2.0000e-005	3.5800e-003	9.5000e-004	2.0000e-005	9.7000e-004	0.0000	3.0060	3.0060	7.0000e-005	0.0000	3.0076
Total	**0.0296**	**1.0643**	**0.2179**	**2.6200e-003**	**0.0534**	**2.6200e-003**	**0.0561**	**0.0147**	**2.5000e-003**	**0.0172**	**0.0000**	**253.6806**	**253.6806**	**0.0156**	**0.0000**	**254.0698**

3.6 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2000e-003	0.0118	0.0152	2.0000e-005		6.6000e-004	6.6000e-004		6.1000e-004	6.1000e-004	0.0000	1.9263	1.9263	6.2000e-004	0.0000	1.9418
Total	**1.2000e-003**	**0.0118**	**0.0152**	**2.0000e-005**		**6.6000e-004**	**6.6000e-004**		**6.1000e-004**	**6.1000e-004**	**0.0000**	**1.9263**	**1.9263**	**6.2000e-004**	**0.0000**	**1.9418**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.6000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0389	0.0389	0.0000	0.0000	0.0390
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1503	0.1503	0.0000	0.0000	0.1504
Total	**7.0000e-005**	**2.1000e-004**	**5.4000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1892**	**0.1892**	**0.0000**	**0.0000**	**0.1893**

3.6 Utility Trenching - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7000e-004	1.1600e-003	0.0166	2.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	1.9263	1.9263	6.2000e-004	0.0000	1.9418
Total	**2.7000e-004**	**1.1600e-003**	**0.0166**	**2.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**1.9263**	**1.9263**	**6.2000e-004**	**0.0000**	**1.9418**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.6000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0389	0.0389	0.0000	0.0000	0.0390
Worker	7.0000e-005	5.0000e-005	5.0000e-004	0.0000	1.8000e-004	0.0000	1.8000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1503	0.1503	0.0000	0.0000	0.1504
Total	**7.0000e-005**	**2.1000e-004**	**5.4000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1892**	**0.1892**	**0.0000**	**0.0000**	**0.1893**

3.6 Utility Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0130	0.1267	0.1860	2.7000e-004		6.6300e-003	6.6300e-003		6.1000e-003	6.1000e-003	0.0000	23.7712	23.7712	7.6900e-003	0.0000	23.9634
Total	**0.0130**	**0.1267**	**0.1860**	**2.7000e-004**		**6.6300e-003**	**6.6300e-003**		**6.1000e-003**	**6.1000e-003**	**0.0000**	**23.7712**	**23.7712**	**7.6900e-003**	**0.0000**	**23.9634**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.8300e-003	4.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4751	0.4751	2.0000e-005	0.0000	0.4757
Worker	7.9000e-004	5.3000e-004	5.7200e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	1.7857	1.7857	4.0000e-005	0.0000	1.7867
Total	**8.4000e-004**	**2.3600e-003**	**6.1700e-003**	**2.0000e-005**	**2.3100e-003**	**1.0000e-005**	**2.3300e-003**	**6.2000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**2.2608**	**2.2608**	**6.0000e-005**	**0.0000**	**2.2623**

3.6 Utility Trenching - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.3100e-003	0.0144	0.2043	2.7000e-004		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	23.7711	23.7711	7.6900e-003	0.0000	23.9633
Total	**3.3100e-003**	**0.0144**	**0.2043**	**2.7000e-004**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**23.7711**	**23.7711**	**7.6900e-003**	**0.0000**	**23.9633**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.8300e-003	4.5000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4751	0.4751	2.0000e-005	0.0000	0.4757
Worker	7.9000e-004	5.3000e-004	5.7200e-003	2.0000e-005	2.1900e-003	1.0000e-005	2.2100e-003	5.8000e-004	1.0000e-005	6.0000e-004	0.0000	1.7857	1.7857	4.0000e-005	0.0000	1.7867
Total	**8.4000e-004**	**2.3600e-003**	**6.1700e-003**	**2.0000e-005**	**2.3100e-003**	**1.0000e-005**	**2.3300e-003**	**6.2000e-004**	**1.0000e-005**	**6.4000e-004**	**0.0000**	**2.2608**	**2.2608**	**6.0000e-005**	**0.0000**	**2.2623**

3.7 Fine Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1098	0.0000	0.1098	0.0584	0.0000	0.0584	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0478	0.4884	0.3846	7.2000e-004		0.0230	0.0230		0.0212	0.0212	0.0000	63.1525	63.1525	0.0204	0.0000	63.6631
Total	**0.0478**	**0.4884**	**0.3846**	**7.2000e-004**	**0.1098**	**0.0230**	**0.1329**	**0.0584**	**0.0212**	**0.0796**	**0.0000**	**63.1525**	**63.1525**	**0.0204**	**0.0000**	**63.6631**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	0.0152	3.1000e-003	4.0000e-005	7.6000e-004	3.0000e-005	8.0000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	3.7821	3.7821	2.3000e-004	0.0000	3.7879
Vendor	5.0000e-005	1.7300e-003	4.3000e-004	0.0000	1.1000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.4494	0.4494	2.0000e-005	0.0000	0.4499
Worker	7.5000e-004	5.0000e-004	5.4100e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6892	1.6892	4.0000e-005	0.0000	1.6901
Total	**1.2100e-003**	**0.0174**	**8.9400e-003**	**6.0000e-005**	**2.9400e-003**	**4.0000e-005**	**3.0100e-003**	**7.9000e-004**	**4.0000e-005**	**8.4000e-004**	**0.0000**	**5.9207**	**5.9207**	**2.9000e-004**	**0.0000**	**5.9279**

3.7 Fine Grading - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0494	0.0000	0.0494	0.0263	0.0000	0.0263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8000e-003	0.0381	0.4168	7.2000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	63.1524	63.1524	0.0204	0.0000	63.6631
Total	**8.8000e-003**	**0.0381**	**0.4168**	**7.2000e-004**	**0.0494**	**1.1700e-003**	**0.0506**	**0.0263**	**1.1700e-003**	**0.0275**	**0.0000**	**63.1524**	**63.1524**	**0.0204**	**0.0000**	**63.6631**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-004	0.0152	3.1000e-003	4.0000e-005	7.6000e-004	3.0000e-005	8.0000e-004	2.1000e-004	3.0000e-005	2.4000e-004	0.0000	3.7821	3.7821	2.3000e-004	0.0000	3.7879
Vendor	5.0000e-005	1.7300e-003	4.3000e-004	0.0000	1.1000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	4.0000e-005	0.0000	0.4494	0.4494	2.0000e-005	0.0000	0.4499
Worker	7.5000e-004	5.0000e-004	5.4100e-003	2.0000e-005	2.0700e-003	1.0000e-005	2.0900e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.6892	1.6892	4.0000e-005	0.0000	1.6901
Total	**1.2100e-003**	**0.0174**	**8.9400e-003**	**6.0000e-005**	**2.9400e-003**	**4.0000e-005**	**3.0100e-003**	**7.9000e-004**	**4.0000e-005**	**8.4000e-004**	**0.0000**	**5.9207**	**5.9207**	**2.9000e-004**	**0.0000**	**5.9279**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2657	2.4204	2.6235	4.3300e-003		0.1268	0.1268		0.1202	0.1202	0.0000	372.8866	372.8866	0.0772	0.0000	374.8158
Total	**0.2657**	**2.4204**	**2.6235**	**4.3300e-003**		**0.1268**	**0.1268**		**0.1202**	**0.1202**	**0.0000**	**372.8866**	**372.8866**	**0.0772**	**0.0000**	**374.8158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.3000e-004	0.0245	6.0800e-003	7.0000e-005	1.6300e-003	5.0000e-005	1.6800e-003	4.7000e-004	5.0000e-005	5.2000e-004	0.0000	6.3687	6.3687	3.0000e-004	0.0000	6.3762
Worker	0.0177	0.0118	0.1278	4.4000e-004	0.0490	3.1000e-004	0.0493	0.0130	2.9000e-004	0.0133	0.0000	39.8970	39.8970	8.3000e-004	0.0000	39.9179
Total	**0.0185**	**0.0363**	**0.1339**	**5.1000e-004**	**0.0506**	**3.6000e-004**	**0.0510**	**0.0135**	**3.4000e-004**	**0.0138**	**0.0000**	**46.2657**	**46.2657**	**1.1300e-003**	**0.0000**	**46.2941**

3.8 Building Construction - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0510	0.3219	2.8060	4.3300e-003		6.4300e-003	6.4300e-003		6.4300e-003	6.4300e-003	0.0000	372.8861	372.8861	0.0772	0.0000	374.8153
Total	**0.0510**	**0.3219**	**2.8060**	**4.3300e-003**		**6.4300e-003**	**6.4300e-003**		**6.4300e-003**	**6.4300e-003**	**0.0000**	**372.8861**	**372.8861**	**0.0772**	**0.0000**	**374.8153**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.3000e-004	0.0245	6.0800e-003	7.0000e-005	1.6300e-003	5.0000e-005	1.6800e-003	4.7000e-004	5.0000e-005	5.2000e-004	0.0000	6.3687	6.3687	3.0000e-004	0.0000	6.3762
Worker	0.0177	0.0118	0.1278	4.4000e-004	0.0490	3.1000e-004	0.0493	0.0130	2.9000e-004	0.0133	0.0000	39.8970	39.8970	8.3000e-004	0.0000	39.9179
Total	**0.0185**	**0.0363**	**0.1339**	**5.1000e-004**	**0.0506**	**3.6000e-004**	**0.0510**	**0.0135**	**3.4000e-004**	**0.0138**	**0.0000**	**46.2657**	**46.2657**	**1.1300e-003**	**0.0000**	**46.2941**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1797	1.6369	1.9131	3.1800e-003		0.0805	0.0805		0.0763	0.0763	0.0000	273.7230	273.7230	0.0561	0.0000	275.1258
Total	**0.1797**	**1.6369**	**1.9131**	**3.1800e-003**		**0.0805**	**0.0805**		**0.0763**	**0.0763**	**0.0000**	**273.7230**	**273.7230**	**0.0561**	**0.0000**	**275.1258**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0139	3.9900e-003	5.0000e-005	1.1900e-003	2.0000e-005	1.2100e-003	3.5000e-004	2.0000e-005	3.6000e-004	0.0000	4.5428	4.5428	1.9000e-004	0.0000	4.5475
Worker	0.0122	7.7700e-003	0.0863	3.1000e-004	0.0360	2.2000e-004	0.0362	9.5600e-003	2.1000e-004	9.7700e-003	0.0000	28.1580	28.1580	5.5000e-004	0.0000	28.1717
Total	**0.0126**	**0.0217**	**0.0903**	**3.6000e-004**	**0.0371**	**2.4000e-004**	**0.0374**	**9.9100e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.7007**	**32.7007**	**7.4000e-004**	**0.0000**	**32.7192**

3.8 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0374	0.2362	2.0592	3.1800e-003		4.7200e-003	4.7200e-003		4.7200e-003	4.7200e-003	0.0000	273.7227	273.7227	0.0561	0.0000	275.1255
Total	**0.0374**	**0.2362**	**2.0592**	**3.1800e-003**		**4.7200e-003**	**4.7200e-003**		**4.7200e-003**	**4.7200e-003**	**0.0000**	**273.7227**	**273.7227**	**0.0561**	**0.0000**	**275.1255**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-004	0.0139	3.9900e-003	5.0000e-005	1.1900e-003	2.0000e-005	1.2100e-003	3.5000e-004	2.0000e-005	3.6000e-004	0.0000	4.5428	4.5428	1.9000e-004	0.0000	4.5475
Worker	0.0122	7.7700e-003	0.0863	3.1000e-004	0.0360	2.2000e-004	0.0362	9.5600e-003	2.1000e-004	9.7700e-003	0.0000	28.1580	28.1580	5.5000e-004	0.0000	28.1717
Total	**0.0126**	**0.0217**	**0.0903**	**3.6000e-004**	**0.0371**	**2.4000e-004**	**0.0374**	**9.9100e-003**	**2.3000e-004**	**0.0101**	**0.0000**	**32.7007**	**32.7007**	**7.4000e-004**	**0.0000**	**32.7192**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0509	0.4008	0.5766	9.3000e-004		0.0197	0.0197		0.0195	0.0195	0.0000	80.1270	80.1270	0.0114	0.0000	80.4122
Total	**2.8556**	**0.4008**	**0.5766**	**9.3000e-004**		**0.0197**	**0.0197**		**0.0195**	**0.0195**	**0.0000**	**80.1270**	**80.1270**	**0.0114**	**0.0000**	**80.4122**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2600e-003	8.4000e-004	9.0700e-003	3.0000e-005	3.4800e-003	2.0000e-005	3.5000e-003	9.2000e-004	2.0000e-005	9.5000e-004	0.0000	2.8314	2.8314	6.0000e-005	0.0000	2.8329
Total	**1.2600e-003**	**8.4000e-004**	**9.0700e-003**	**3.0000e-005**	**3.4800e-003**	**2.0000e-005**	**3.5000e-003**	**9.2000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**2.8314**	**2.8314**	**6.0000e-005**	**0.0000**	**2.8329**

3.9 Architectural Coating - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.8047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1816	0.6101	9.3000e-004		1.3200e-003	1.3200e-003		1.3200e-003	1.3200e-003	0.0000	80.1269	80.1269	0.0114	0.0000	80.4121
Total	**2.8180**	**0.1816**	**0.6101**	**9.3000e-004**		**1.3200e-003**	**1.3200e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**80.1269**	**80.1269**	**0.0114**	**0.0000**	**80.4121**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2600e-003	8.4000e-004	9.0700e-003	3.0000e-005	3.4800e-003	2.0000e-005	3.5000e-003	9.2000e-004	2.0000e-005	9.5000e-004	0.0000	2.8314	2.8314	6.0000e-005	0.0000	2.8329
Total	**1.2600e-003**	**8.4000e-004**	**9.0700e-003**	**3.0000e-005**	**3.4800e-003**	**2.0000e-005**	**3.5000e-003**	**9.2000e-004**	**2.0000e-005**	**9.5000e-004**	**0.0000**	**2.8314**	**2.8314**	**6.0000e-005**	**0.0000**	**2.8329**

3.10 Finishing/Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2891	0.0000	0.2891	0.1589	0.0000	0.1589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0398	0.4189	0.2648	5.8000e-004		0.0188	0.0188		0.0173	0.0173	0.0000	50.5865	50.5865	0.0164	0.0000	50.9955
Total	**0.0398**	**0.4189**	**0.2648**	**5.8000e-004**	**0.2891**	**0.0188**	**0.3078**	**0.1589**	**0.0173**	**0.1762**	**0.0000**	**50.5865**	**50.5865**	**0.0164**	**0.0000**	**50.9955**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	6.8000e-004	7.5800e-003	3.0000e-005	3.1600e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4754	2.4754	5.0000e-005	0.0000	2.4766
Total	**1.0700e-003**	**6.8000e-004**	**7.5800e-003**	**3.0000e-005**	**3.1600e-003**	**2.0000e-005**	**3.1800e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.4754**	**2.4754**	**5.0000e-005**	**0.0000**	**2.4766**

3.10 Finishing/Landscaping - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1301	0.0000	0.1301	0.0715	0.0000	0.0715	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.8600e-003	0.0642	0.3092	5.8000e-004		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	50.5864	50.5864	0.0164	0.0000	50.9954
Total	**7.8600e-003**	**0.0642**	**0.3092**	**5.8000e-004**	**0.1301**	**9.4000e-004**	**0.1310**	**0.0715**	**9.4000e-004**	**0.0724**	**0.0000**	**50.5864**	**50.5864**	**0.0164**	**0.0000**	**50.9954**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0700e-003	6.8000e-004	7.5800e-003	3.0000e-005	3.1600e-003	2.0000e-005	3.1800e-003	8.4000e-004	2.0000e-005	8.6000e-004	0.0000	2.4754	2.4754	5.0000e-005	0.0000	2.4766
Total	**1.0700e-003**	**6.8000e-004**	**7.5800e-003**	**3.0000e-005**	**3.1600e-003**	**2.0000e-005**	**3.1800e-003**	**8.4000e-004**	**2.0000e-005**	**8.6000e-004**	**0.0000**	**2.4754**	**2.4754**	**5.0000e-005**	**0.0000**	**2.4766**

3.11 Asphalt Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5200e-003	0.0150	0.0214	3.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	2.9401	2.9401	9.5000e-004	0.0000	2.9639
Paving	1.0900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.6100e-003**	**0.0150**	**0.0214**	**3.0000e-005**		**7.5000e-004**	**7.5000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.9401**	**2.9401**	**9.5000e-004**	**0.0000**	**2.9639**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.3000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0749	0.0749	0.0000	0.0000	0.0750
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0928	0.0928	0.0000	0.0000	0.0929
Total	**5.0000e-005**	**2.6000e-004**	**3.5000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1677**	**0.1677**	**0.0000**	**0.0000**	**0.1678**

3.11 Asphalt Paving - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.1000e-004	1.7800e-003	0.0254	3.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	2.9401	2.9401	9.5000e-004	0.0000	2.9639
Paving	1.0900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.5000e-003**	**1.7800e-003**	**0.0254**	**3.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**2.9401**	**2.9401**	**9.5000e-004**	**0.0000**	**2.9639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.3000e-004	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0749	0.0749	0.0000	0.0000	0.0750
Worker	4.0000e-005	3.0000e-005	2.8000e-004	0.0000	1.2000e-004	0.0000	1.2000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0928	0.0928	0.0000	0.0000	0.0929
Total	**5.0000e-005**	**2.6000e-004**	**3.5000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1677**	**0.1677**	**0.0000**	**0.0000**	**0.1678**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.8666	3.6324	8.3461	0.0282	2.4248	0.0237	2.4485	0.6508	0.0221	0.6729	0.0000	2,592.3373	2,592.3373	0.0994	0.0000	2,594.8222
Unmitigated	1.0197	4.5649	11.9448	0.0451	4.0590	0.0368	4.0958	1.0894	0.0344	1.1237	0.0000	4,144.6771	4,144.6771	0.1417	0.0000	4,148.2183

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Research & Development	4,351.90	4,351.90	4351.90	10,906,926	6,515,588
Total	4,351.90	4,351.90	4,351.90	10,906,926	6,515,588

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Other Asphalt Surfaces	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Research & Development	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	908.0418	908.0418	0.0801	0.0166	914.9819
NaturalGas Mitigated	0.0645	0.5861	0.4923	3.5200e-003		0.0445	0.0445		0.0445	0.0445	0.0000	637.9869	637.9869	0.0122	0.0117	641.7782
NaturalGas Unmitigated	0.0696	0.6331	0.5318	3.8000e-003		0.0481	0.0481		0.0481	0.0481	0.0000	689.1828	689.1828	0.0132	0.0126	693.2783

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.29148e+007	0.0696	0.6331	0.5318	3.8000e-003		0.0481	0.0481		0.0481	0.0481	0.0000	689.1828	689.1828	0.0132	0.0126	693.2783
Total		**0.0696**	**0.6331**	**0.5318**	**3.8000e-003**		**0.0481**	**0.0481**		**0.0481**	**0.0481**	**0.0000**	**689.1828**	**689.1828**	**0.0132**	**0.0126**	**693.2783**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.19554e+007	0.0645	0.5861	0.4923	3.5200e-003		0.0445	0.0445		0.0445	0.0445	0.0000	637.9869	637.9869	0.0122	0.0117	641.7782
Total		**0.0645**	**0.5861**	**0.4923**	**3.5200e-003**		**0.0445**	**0.0445**		**0.0445**	**0.0445**	**0.0000**	**637.9869**	**637.9869**	**0.0122**	**0.0117**	**641.7782**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	2.14359e+006	319.6972	0.0282	5.8300e-003	322.1407
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Research & Development	3.94488e+006	588.3446	0.0519	0.0107	592.8413
Total		**908.0418**	**0.0801**	**0.0166**	**914.9819**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Research & Development	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.3452	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176
Unmitigated	2.3452	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2805					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0639					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9000e-004	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176
Total	**2.3452**	**8.0000e-005**	**8.4900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0165**	**0.0165**	**4.0000e-005**	**0.0000**	**0.0176**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2805					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.0639					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	7.9000e-004	8.0000e-005	8.4900e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0165	0.0165	4.0000e-005	0.0000	0.0176
Total	**2.3452**	**8.0000e-005**	**8.4900e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0165**	**0.0165**	**4.0000e-005**	**0.0000**	**0.0176**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	230.7612	6.7029	0.1610	446.2961
Unmitigated	288.4515	8.3786	0.2012	557.8701

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	256.571 / 0	288.4515	8.3786	0.2012	557.8701
Total		**288.4515**	**8.3786**	**0.2012**	**557.8701**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	205.257 / 0	230.7612	6.7029	0.1610	446.2961
Total		**230.7612**	**6.7029**	**0.1610**	**446.2961**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.0122	0.1189	0.0000	4.9850
Unmitigated	8.0486	0.4757	0.0000	19.9401

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Research & Development	39.65	8.0486	0.4757	0.0000	19.9401
Total		**8.0486**	**0.4757**	**0.0000**	**19.9401**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Research & Development	9.9125	2.0122	0.1189	0.0000	4.9850
Total		**2.0122**	**0.1189**	**0.0000**	**4.9850**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

600 Addison Street Project

Bay Area AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	521.81	1000sqft	5.57	521,810.00	0
Enclosed Parking with Elevator	365.80	1000sqft	2.00	365,800.00	0
Other Asphalt Surfaces	35.99	1000sqft	0.83	35,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E 2015)

Land Use - Total project site is 8.4 acres

Construction Phase - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Assuming use of skid steer loaders and tractors/loaders/backhoes

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Trips and VMT - Based on construction activities and schedule assumptions provided by Project Applicant

Demolition - Based on construction activities and schedule assumptions provided by Project Applicant

Grading - Based on construction activities and schedule assumptions provided by Project Applicant

Vehicle Trips - Trip generation based on project's traffic study

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and Tier 4 mitigation

Mobile Land Use Mitigation -

Energy Mitigation - Assuming 3.3% exceedance of 2019 Title 24 standards and the proposed Project would also incorporate photovoltaic systems to provide renewable energy onsite such that the core building operation would be net zero site energy at the onset of the building's operation.

Waste Mitigation - The proposed Project would be consistent with the CalRecycle Waste Diversion and Recycling Mandate which would reduce solid waste production by 75 percen

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	20.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

tblConstructionPhase	NumDays	20.00	110.00
tblConstructionPhase	NumDays	230.00	430.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	10.00	32.00
tblGrading	AcresOfGrading	90.00	8.40
tblGrading	AcresOfGrading	52.50	8.40
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	59,000.00
tblGrading	MaterialExported	0.00	15,000.00
tblLandUse	LotAcreage	11.98	5.57
tblLandUse	LotAcreage	8.40	2.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	HorsePower	132.00	130.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00

tblOffRoadEquipment	HorsePower	63.00	62.00
tblOffRoadEquipment	HorsePower	158.00	162.00
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tblOffRoadEquipment	HorsePower	367.00	361.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
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tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00

tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	268.00	605.00
tblTripsAndVMT	HaulingTripNumber	350.00	3,900.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	7,375.00	11,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
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tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	151.00	2.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	18.00	5.00
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tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	336.00	50.00
tblTripsAndVMT	WorkerTripNumber	67.00	8.00
tblTripsAndVMT	WorkerTripNumber	18.00	25.00

tblVehicleTrips	ST_TR	1.90	8.34
tblVehicleTrips	SU_TR	1.11	8.34
tblVehicleTrips	WD_TR	8.11	8.34

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	8.0914	161.9095	73.7666	0.3543	23.4780	3.0806	25.6356	9.5926	2.8688	11.5889	0.0000	37,497.0315	37,497.0315	3.4551	0.0000	37,577.6488
2022	54.2416	55.6612	55.2582	0.1001	7.0059	2.7031	9.7090	3.5322	2.5156	6.0477	0.0000	9,675.1961	9,675.1961	2.4626	0.0000	9,736.7599
2023	5.5603	49.5175	46.4502	0.0888	18.7438	2.3119	21.0557	10.1108	2.1519	12.2627	0.0000	8,551.4736	8,551.4736	2.1710	0.0000	8,605.7488
Maximum	**54.2416**	**161.9095**	**73.7666**	**0.3543**	**23.4780**	**3.0806**	**25.6356**	**10.1108**	**2.8688**	**12.2627**	**0.0000**	**37,497.0315**	**37,497.0315**	**3.4551**	**0.0000**	**37,577.6488**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	3.8787	127.8462	63.8652	0.3543	16.7604	0.3721	17.1325	5.9372	0.3587	6.2959	0.0000	37,497.0315	37,497.0315	3.4551	0.0000	37,577.6488
2022	51.8262	6.9344	59.5572	0.1001	3.5537	0.1496	3.7033	1.6964	0.1491	1.8455	0.0000	9,675.1961	9,675.1961	2.4626	0.0000	9,736.7599
2023	1.6322	7.5514	52.1483	0.0888	8.8073	0.1331	8.9405	4.6490	0.1328	4.7818	0.0000	8,551.4736	8,551.4736	2.1710	0.0000	8,605.7487
Maximum	**51.8262**	**127.8462**	**63.8652**	**0.3543**	**16.7604**	**0.3721**	**17.1325**	**5.9372**	**0.3587**	**6.2959**	**0.0000**	**37,497.0315**	**37,497.0315**	**3.4551**	**0.0000**	**37,577.6488**

600 Addison Street Project - Bay Area AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**15.55**	**46.71**	**-0.05**	**0.00**	**40.84**	**91.91**	**47.21**	**47.14**	**91.50**	**56.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Energy	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436
Mobile	6.4248	24.2852	68.6819	0.2624	23.1703	0.2020	23.3723	6.1987	0.1887	6.3873		26,553.7190	26,553.7190	0.8652		26,575.3498
Total	**19.6610**	**27.7550**	**71.6900**	**0.2832**	**23.1703**	**0.4660**	**23.6363**	**6.1987**	**0.4526**	**6.6513**		**30,716.6278**	**30,716.6278**	**0.9456**	**0.0763**	**30,763.0087**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Energy	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
Mobile	5.5649	19.4836	46.3717	0.1638	13.8415	0.1301	13.9716	3.7030	0.1214	3.8244		16,595.7197	16,595.7197	0.5979		16,610.6678
Total	**18.7728**	**22.6957**	**49.1634**	**0.1831**	**13.8415**	**0.3745**	**14.2160**	**3.7030**	**0.3658**	**4.0688**		**20,449.4025**	**20,449.4025**	**0.6723**	**0.0707**	**20,487.2632**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.52**	**18.23**	**31.42**	**35.34**	**40.26**	**19.64**	**39.86**	**40.26**	**19.19**	**38.83**	**0.00**	**33.43**	**33.43**	**28.90**	**7.43**	**33.40**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Demolition	Demolition	9/1/2021	9/21/2021	5	15	
2	Asphalt Demolition	Demolition	9/7/2021	9/20/2021	5	10	
3	Site Preparation	Site Preparation	9/22/2021	10/5/2021	5	10	
4	Rough Grading	Grading	10/6/2021	12/28/2021	5	60	
5	Utility Trenching	Trenching	12/29/2021	2/22/2022	5	40	
6	Fine Grading	Grading	1/12/2022	3/1/2022	5	35	
7	Building Construction	Building Construction	1/19/2022	9/12/2023	5	430	
8	Architectural Coating	Architectural Coating	7/6/2022	12/6/2022	5	110	
9	Finishing/Landscaping	Site Preparation	7/30/2023	9/12/2023	5	32	
10	Asphalt Paving	Paving	9/5/2023	9/12/2023	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 782,715; Non-Residential Outdoor: 260,905; Striped Parking Area: 24,107 (Architectural Coating – sqft)

OffRoad Equipment

600 Addison Street Project - Bay Area AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Demolition	Excavators	2	8.00	162	0.38
Building Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition	Excavators	2	8.00	162	0.38
Asphalt Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Asphalt Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	2	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Rough Grading	Excavators	1	8.00	162	0.38
Rough Grading	Graders	1	8.00	174	0.41
Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Rough Grading	Scrapers	1	8.00	361	0.48
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	162	0.38
Utility Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Fine Grading	Excavators	1	8.00	158	0.38
Fine Grading	Graders	1	8.00	174	0.41
Fine Grading	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading	Scrapers	1	8.00	361	0.48
Fine Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	3	8.00	62	0.31
Architectural Coating	Air Compressors	3	8.00	78	0.48
Finishing/Landscaping	Rubber Tired Dozers	3	8.00	247	0.40
Finishing/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Demolition	7	15.00	2.00	605.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition	7	5.00	0.00	3,900.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	7	15.00	2.00	11,700.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	15.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	6	15.00	1.00	180.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	50.00	2.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	6	8.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	7	25.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	3	5.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.8718	0.0000	3.8718	0.5862	0.0000	0.5862			0.0000			0.0000
Off-Road	3.0004	29.5265	29.4434	0.0409		1.4458	1.4458		1.3440	1.3440		3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**3.0004**	**29.5265**	**29.4434**	**0.0409**	**3.8718**	**1.4458**	**5.3176**	**0.5862**	**1.3440**	**1.9302**		**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.2 Building Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1893	7.2106	1.3440	0.0179	0.3528	0.0176	0.3703	0.0967	0.0168	0.1135		1,917.3497	1,917.3497	0.1136		1,920.1907
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3300e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.2438**	**7.4454**	**1.7612**	**0.0197**	**0.4895**	**0.0188**	**0.5083**	**0.1333**	**0.0180**	**0.1513**		**2,093.9354**	**2,093.9354**	**0.1190**		**2,096.9105**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7423	0.0000	1.7423	0.2638	0.0000	0.2638			0.0000			0.0000
Off-Road	0.4847	2.1004	24.4927	0.0409		0.0646	0.0646		0.0646	0.0646	0.0000	3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**0.4847**	**2.1004**	**24.4927**	**0.0409**	**1.7423**	**0.0646**	**1.8069**	**0.2638**	**0.0646**	**0.3284**	**0.0000**	**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.2 Building Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1893	7.2106	1.3440	0.0179	0.3528	0.0176	0.3703	0.0967	0.0168	0.1135		1,917.3497	1,917.3497	0.1136		1,920.1907
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3300e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.2438**	**7.4454**	**1.7612**	**0.0197**	**0.4895**	**0.0188**	**0.5083**	**0.1333**	**0.0180**	**0.1513**		**2,093.9354**	**2,093.9354**	**0.1190**		**2,096.9105**

3.3 Asphalt Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5795	0.0000	7.5795	1.1476	0.0000	1.1476			0.0000			0.0000
Off-Road	3.0004	29.5265	29.4434	0.0409		1.4458	1.4458		1.3440	1.3440		3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**3.0004**	**29.5265**	**29.4434**	**0.0409**	**7.5795**	**1.4458**	**9.0253**	**1.1476**	**1.3440**	**2.4916**		**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.3 Asphalt Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8307	69.7220	12.9958	0.1733	3.4110	0.1700	3.5809	0.9351	0.1626	1.0977		18,539.6625	18,539.6625	1.0988		18,567.1332
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	9.4000e-003	0.1228	4.0000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		39.5980	39.5980	8.9000e-004		39.6201
Total	**1.8468**	**69.7314**	**13.1187**	**0.1737**	**3.4520**	**0.1703**	**3.6223**	**0.9460**	**0.1629**	**1.1089**		**18,579.2605**	**18,579.2605**	**1.0997**		**18,606.7533**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4108	0.0000	3.4108	0.5164	0.0000	0.5164			0.0000			0.0000
Off-Road	0.4847	2.1004	24.4927	0.0409		0.0646	0.0646		0.0646	0.0646	0.0000	3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**0.4847**	**2.1004**	**24.4927**	**0.0409**	**3.4108**	**0.0646**	**3.4754**	**0.5164**	**0.0646**	**0.5811**	**0.0000**	**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.3 Asphalt Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.8307	69.7220	12.9958	0.1733	3.4110	0.1700	3.5809	0.9351	0.1626	1.0977		18,539.6625	18,539.6625	1.0988		18,567.1332
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0161	9.4000e-003	0.1228	4.0000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		39.5980	39.5980	8.9000e-004		39.6201
Total	**1.8468**	**69.7314**	**13.1187**	**0.1737**	**3.4520**	**0.1703**	**3.6223**	**0.9460**	**0.1629**	**1.1089**		**18,579.2605**	**18,579.2605**	**1.0997**		**18,606.7533**

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.2138	0.0000	12.2138	6.6461	0.0000	6.6461			0.0000			0.0000
Off-Road	3.6045	36.1469	30.2762	0.0395		1.8497	1.8497		1.7017	1.7017		3,830.2593	3,830.2593	1.2388		3,861.2289
Total	**3.6045**	**36.1469**	**30.2762**	**0.0395**	**12.2138**	**1.8497**	**14.0635**	**6.6461**	**1.7017**	**8.3478**		**3,830.2593**	**3,830.2593**	**1.2388**		**3,861.2289**

3.4 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2952	125.4996	23.3925	0.3119	10.7803	0.3060	11.0863	2.8223	0.2927	3.1150		33,371.3926	33,371.3926	1.9779		33,420.8397
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0232	4.5000e-004	0.0236	6.2700e-003	4.3000e-004	6.6900e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0965	0.0564	0.7369	2.3800e-003	0.4606	1.5500e-003	0.4622	0.1179	1.4300e-003	0.1194		237.5879	237.5879	5.3100e-003		237.7206
Total	**3.3979**	**125.7627**	**24.1781**	**0.3148**	**11.2641**	**0.3080**	**11.5721**	**2.9465**	**0.2946**	**3.2410**		**33,666.7721**	**33,666.7721**	**1.9859**		**33,716.4199**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4962	0.0000	5.4962	2.9908	0.0000	2.9908			0.0000			0.0000
Off-Road	0.4808	2.0835	24.2525	0.0395		0.0641	0.0641		0.0641	0.0641	0.0000	3,830.2593	3,830.2593	1.2388		3,861.2289
Total	**0.4808**	**2.0835**	**24.2525**	**0.0395**	**5.4962**	**0.0641**	**5.5603**	**2.9908**	**0.0641**	**3.0549**	**0.0000**	**3,830.2593**	**3,830.2593**	**1.2388**		**3,861.2289**

3.4 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2952	125.4996	23.3925	0.3119	10.7803	0.3060	11.0863	2.8223	0.2927	3.1150		33,371.3926	33,371.3926	1.9779		33,420.8397
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0232	4.5000e-004	0.0236	6.2700e-003	4.3000e-004	6.6900e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0965	0.0564	0.7369	2.3800e-003	0.4606	1.5500e-003	0.4622	0.1179	1.4300e-003	0.1194		237.5879	237.5879	5.3100e-003		237.7206
Total	**3.3979**	**125.7627**	**24.1781**	**0.3148**	**11.2641**	**0.3080**	**11.5721**	**2.9465**	**0.2946**	**3.2410**		**33,666.7721**	**33,666.7721**	**1.9859**		**33,716.4199**

3.5 Rough Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2818	0.0000	6.2818	3.3431	0.0000	3.3431			0.0000			0.0000
Off-Road	3.2324	33.6529	28.7733	0.0446		1.6092	1.6092		1.4804	1.4804		4,323.2478	4,323.2478	1.3982		4,358.2035
Total	**3.2324**	**33.6529**	**28.7733**	**0.0446**	**6.2818**	**1.6092**	**7.8909**	**3.3431**	**1.4804**	**4.8235**		**4,323.2478**	**4,323.2478**	**1.3982**		**4,358.2035**

3.5 Rough Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9153	34.8610	6.4979	0.0866	1.7055	0.0850	1.7905	0.4676	0.0813	0.5489		9,269.8313	9,269.8313	0.5494		9,283.5666
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3300e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.9698**	**35.0959**	**6.9151**	**0.0884**	**1.8422**	**0.0862**	**1.9285**	**0.5041**	**0.0825**	**0.5866**		**9,446.4169**	**9,446.4169**	**0.5548**		**9,460.2864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8268	0.0000	2.8268	1.5044	0.0000	1.5044			0.0000			0.0000
Off-Road	0.5459	2.3655	26.3801	0.0446		0.0728	0.0728		0.0728	0.0728	0.0000	4,323.2478	4,323.2478	1.3982		4,358.2034
Total	**0.5459**	**2.3655**	**26.3801**	**0.0446**	**2.8268**	**0.0728**	**2.8996**	**1.5044**	**0.0728**	**1.5772**	**0.0000**	**4,323.2478**	**4,323.2478**	**1.3982**		**4,358.2034**

3.5 Rough Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9153	34.8610	6.4979	0.0866	1.7055	0.0850	1.7905	0.4676	0.0813	0.5489		9,269.8313	9,269.8313	0.5494		9,283.5666
Vendor	6.2000e-003	0.2067	0.0487	5.5000e-004	0.0135	4.5000e-004	0.0140	3.9000e-003	4.3000e-004	4.3300e-003		57.7917	57.7917	2.7100e-003		57.8595
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.9698**	**35.0959**	**6.9151**	**0.0884**	**1.8422**	**0.0862**	**1.9285**	**0.5041**	**0.0825**	**0.5866**		**9,446.4169**	**9,446.4169**	**0.5548**		**9,460.2864**

3.6 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7968	7.8953	10.1354	0.0146		0.4424	0.4424		0.4070	0.4070		1,415.5553	1,415.5553	0.4578		1,427.0008
Total	**0.7968**	**7.8953**	**10.1354**	**0.0146**		**0.4424**	**0.4424**		**0.4070**	**0.4070**		**1,415.5553**	**1,415.5553**	**0.4578**		**1,427.0008**

3.6 Utility Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1000e-003	0.1033	0.0244	2.7000e-004	6.7700e-003	2.2000e-004	6.9900e-003	1.9500e-003	2.1000e-004	2.1600e-003		28.8959	28.8959	1.3600e-003		28.9298
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.0513**	**0.1315**	**0.3928**	**1.4600e-003**	**0.1300**	**1.0000e-003**	**0.1310**	**0.0346**	**9.2000e-004**	**0.0356**		**147.6898**	**147.6898**	**4.0200e-003**		**147.7901**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1791	0.7760	11.0434	0.0146		0.0239	0.0239		0.0239	0.0239	0.0000	1,415.5553	1,415.5553	0.4578		1,427.0008
Total	**0.1791**	**0.7760**	**11.0434**	**0.0146**		**0.0239**	**0.0239**		**0.0239**	**0.0239**	**0.0000**	**1,415.5553**	**1,415.5553**	**0.4578**		**1,427.0008**

3.6 Utility Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.1000e-003	0.1033	0.0244	2.7000e-004	6.7700e-003	2.2000e-004	6.9900e-003	1.9500e-003	2.1000e-004	2.1600e-003		28.8959	28.8959	1.3600e-003		28.9298
Worker	0.0482	0.0282	0.3685	1.1900e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		118.7939	118.7939	2.6600e-003		118.8603
Total	**0.0513**	**0.1315**	**0.3928**	**1.4600e-003**	**0.1300**	**1.0000e-003**	**0.1310**	**0.0346**	**9.2000e-004**	**0.0356**		**147.6898**	**147.6898**	**4.0200e-003**		**147.7901**

3.6 Utility Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7017	6.8489	10.0514	0.0146		0.3585	0.3585		0.3298	0.3298		1,416.3907	1,416.3907	0.4581		1,427.8430
Total	**0.7017**	**6.8489**	**10.0514**	**0.0146**		**0.3585**	**0.3585**		**0.3298**	**0.3298**		**1,416.3907**	**1,416.3907**	**0.4581**		**1,427.8430**

3.6 Utility Trenching - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8900e-003	0.0979	0.0229	2.7000e-004	6.7700e-003	1.9000e-004	6.9600e-003	1.9500e-003	1.9000e-004	2.1300e-003		28.6145	28.6145	1.3000e-003		28.6469
Worker	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0478**	**0.1232**	**0.3624**	**1.4200e-003**	**0.1300**	**9.5000e-004**	**0.1309**	**0.0346**	**8.9000e-004**	**0.0355**		**143.0488**	**143.0488**	**3.6800e-003**		**143.1408**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1791	0.7760	11.0434	0.0146		0.0239	0.0239		0.0239	0.0239	0.0000	1,416.3907	1,416.3907	0.4581		1,427.8430
Total	**0.1791**	**0.7760**	**11.0434**	**0.0146**		**0.0239**	**0.0239**		**0.0239**	**0.0239**	**0.0000**	**1,416.3907**	**1,416.3907**	**0.4581**		**1,427.8430**

3.6 Utility Trenching - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8900e-003	0.0979	0.0229	2.7000e-004	6.7700e-003	1.9000e-004	6.9600e-003	1.9500e-003	1.9000e-004	2.1300e-003		28.6145	28.6145	1.3000e-003		28.6469
Worker	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0478**	**0.1232**	**0.3624**	**1.4200e-003**	**0.1300**	**9.5000e-004**	**0.1309**	**0.0346**	**8.9000e-004**	**0.0355**		**143.0488**	**143.0488**	**3.6800e-003**		**143.1408**

3.7 Fine Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2766	0.0000	6.2766	3.3377	0.0000	3.3377			0.0000			0.0000
Off-Road	2.7288	27.9092	21.9794	0.0411		1.3154	1.3154		1.2102	1.2102		3,977.9278	3,977.9278	1.2865		4,010.0914
Total	**2.7288**	**27.9092**	**21.9794**	**0.0411**	**6.2766**	**1.3154**	**7.5920**	**3.3377**	**1.2102**	**4.5479**		**3,977.9278**	**3,977.9278**	**1.2865**		**4,010.0914**

3.7 Fine Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.8570	0.1679	2.2500e-003	0.0450	1.9200e-003	0.0469	0.0123	1.8300e-003	0.0142		241.2885	241.2885	0.0140		241.6388
Vendor	2.8900e-003	0.0979	0.0229	2.7000e-004	6.7700e-003	1.9000e-004	6.9600e-003	1.9500e-003	1.9000e-004	2.1300e-003		28.6145	28.6145	1.3000e-003		28.6469
Worker	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0705**	**0.9802**	**0.5303**	**3.6700e-003**	**0.1750**	**2.8700e-003**	**0.1778**	**0.0470**	**2.7200e-003**	**0.0497**		**384.3372**	**384.3372**	**0.0177**		**384.7796**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8245	0.0000	2.8245	1.5020	0.0000	1.5020			0.0000			0.0000
Off-Road	0.5029	2.1793	23.8147	0.0411		0.0671	0.0671		0.0671	0.0671	0.0000	3,977.9278	3,977.9278	1.2865		4,010.0914
Total	**0.5029**	**2.1793**	**23.8147**	**0.0411**	**2.8245**	**0.0671**	**2.8915**	**1.5020**	**0.0671**	**1.5690**	**0.0000**	**3,977.9278**	**3,977.9278**	**1.2865**		**4,010.0914**

3.7 Fine Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0227	0.8570	0.1679	2.2500e-003	0.0450	1.9200e-003	0.0469	0.0123	1.8300e-003	0.0142		241.2885	241.2885	0.0140		241.6388
Vendor	2.8900e-003	0.0979	0.0229	2.7000e-004	6.7700e-003	1.9000e-004	6.9600e-003	1.9500e-003	1.9000e-004	2.1300e-003		28.6145	28.6145	1.3000e-003		28.6469
Worker	0.0449	0.0253	0.3395	1.1500e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		114.4343	114.4343	2.3800e-003		114.4939
Total	**0.0705**	**0.9802**	**0.5303**	**3.6700e-003**	**0.1750**	**2.8700e-003**	**0.1778**	**0.0470**	**2.7200e-003**	**0.0497**		**384.3372**	**384.3372**	**0.0177**		**384.7796**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1428	19.5196	21.1573	0.0349		1.0225	1.0225		0.9693	0.9693		3,314.8151	3,314.8151	0.6860		3,331.9650
Total	**2.1428**	**19.5196**	**21.1573**	**0.0349**		**1.0225**	**1.0225**		**0.9693**	**0.9693**		**3,314.8151**	**3,314.8151**	**0.6860**		**3,331.9650**

3.8 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7800e-003	0.1959	0.0458	5.4000e-004	0.0135	3.9000e-004	0.0139	3.9000e-003	3.7000e-004	4.2700e-003		57.2289	57.2289	2.5900e-003		57.2937
Worker	0.1496	0.0843	1.1317	3.8300e-003	0.4107	2.5200e-003	0.4133	0.1090	2.3200e-003	0.1113		381.4477	381.4477	7.9500e-003		381.6464
Total	**0.1554**	**0.2802**	**1.1775**	**4.3700e-003**	**0.4243**	**2.9100e-003**	**0.4272**	**0.1129**	**2.6900e-003**	**0.1155**		**438.6766**	**438.6766**	**0.0105**		**438.9402**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4111	2.5956	22.6290	0.0349		0.0519	0.0519		0.0519	0.0519	0.0000	3,314.8151	3,314.8151	0.6860		3,331.9650
Total	**0.4111**	**2.5956**	**22.6290**	**0.0349**		**0.0519**	**0.0519**		**0.0519**	**0.0519**	**0.0000**	**3,314.8151**	**3,314.8151**	**0.6860**		**3,331.9650**

3.8 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.7800e-003	0.1959	0.0458	5.4000e-004	0.0135	3.9000e-004	0.0139	3.9000e-003	3.7000e-004	4.2700e-003		57.2289	57.2289	2.5900e-003		57.2937
Worker	0.1496	0.0843	1.1317	3.8300e-003	0.4107	2.5200e-003	0.4133	0.1090	2.3200e-003	0.1113		381.4477	381.4477	7.9500e-003		381.6464
Total	**0.1554**	**0.2802**	**1.1775**	**4.3700e-003**	**0.4243**	**2.9100e-003**	**0.4272**	**0.1129**	**2.6900e-003**	**0.1155**		**438.6766**	**438.6766**	**0.0105**		**438.9402**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9745	17.9879	21.0234	0.0349		0.8843	0.8843		0.8385	0.8385		3,315.6916	3,315.6916	0.6797		3,332.6843
Total	**1.9745**	**17.9879**	**21.0234**	**0.0349**		**0.8843**	**0.8843**		**0.8385**	**0.8385**		**3,315.6916**	**3,315.6916**	**0.6797**		**3,332.6843**

3.8 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.3400e-003	0.1514	0.0413	5.2000e-004	0.0135	1.7000e-004	0.0137	3.9000e-003	1.6000e-004	4.0600e-003		55.6190	55.6190	2.2200e-003		55.6744
Worker	0.1397	0.0758	1.0437	3.6800e-003	0.4107	2.4700e-003	0.4132	0.1090	2.2800e-003	0.1112		366.8244	366.8244	7.1400e-003		367.0028
Total	**0.1440**	**0.2272**	**1.0850**	**4.2000e-003**	**0.4243**	**2.6400e-003**	**0.4269**	**0.1129**	**2.4400e-003**	**0.1153**		**422.4434**	**422.4434**	**9.3600e-003**		**422.6772**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4111	2.5956	22.6290	0.0349		0.0519	0.0519		0.0519	0.0519	0.0000	3,315.6916	3,315.6916	0.6797		3,332.6843
Total	**0.4111**	**2.5956**	**22.6290**	**0.0349**		**0.0519**	**0.0519**		**0.0519**	**0.0519**	**0.0000**	**3,315.6916**	**3,315.6916**	**0.6797**		**3,332.6843**

3.8 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.3400e-003	0.1514	0.0413	5.2000e-004	0.0135	1.7000e-004	0.0137	3.9000e-003	1.6000e-004	4.0600e-003		55.6190	55.6190	2.2200e-003		55.6744
Worker	0.1397	0.0758	1.0437	3.6800e-003	0.4107	2.4700e-003	0.4132	0.1090	2.2800e-003	0.1112		366.8244	366.8244	7.1400e-003		367.0028
Total	**0.1440**	**0.2272**	**1.0850**	**4.2000e-003**	**0.4243**	**2.6400e-003**	**0.4269**	**0.1129**	**2.4400e-003**	**0.1153**		**422.4434**	**422.4434**	**9.3600e-003**		**422.6772**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.9948					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.9246	7.2881	10.4842	0.0169		0.3576	0.3576		0.3551	0.3551		1,605.9079	1,605.9079	0.2286		1,611.6223
Total	**51.9195**	**7.2881**	**10.4842**	**0.0169**		**0.3576**	**0.3576**		**0.3551**	**0.3551**		**1,605.9079**	**1,605.9079**	**0.2286**		**1,611.6223**

3.9 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0239	0.0135	0.1811	6.1000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		61.0316	61.0316	1.2700e-003		61.0634
Total	**0.0239**	**0.0135**	**0.1811**	**6.1000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**61.0316**	**61.0316**	**1.2700e-003**		**61.0634**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.9948					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2409	3.3015	11.0924	0.0169		0.0240	0.0240		0.0240	0.0240	0.0000	1,605.9079	1,605.9079	0.2286		1,611.6223
Total	**51.2357**	**3.3015**	**11.0924**	**0.0169**		**0.0240**	**0.0240**		**0.0240**	**0.0240**	**0.0000**	**1,605.9079**	**1,605.9079**	**0.2286**		**1,611.6223**

3.9 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0239	0.0135	0.1811	6.1000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		61.0316	61.0316	1.2700e-003		61.0634
Total	**0.0239**	**0.0135**	**0.1811**	**6.1000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**61.0316**	**61.0316**	**1.2700e-003**		**61.0634**

3.10 Finishing/Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4869	26.1822	16.5525	0.0360		1.1729	1.1729		1.0791	1.0791		3,485.1276	3,485.1276	1.1272		3,513.3066
Total	**2.4869**	**26.1822**	**16.5525**	**0.0360**	**18.0663**	**1.1729**	**19.2392**	**9.9307**	**1.0791**	**11.0098**		**3,485.1276**	**3,485.1276**	**1.1272**		**3,513.3066**

3.10 Finishing/Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0379	0.5219	1.8400e-003	0.2054	1.2400e-003	0.2066	0.0545	1.1400e-003	0.0556		183.4122	183.4122	3.5700e-003		183.5014
Total	**0.0699**	**0.0379**	**0.5219**	**1.8400e-003**	**0.2054**	**1.2400e-003**	**0.2066**	**0.0545**	**1.1400e-003**	**0.0556**		**183.4122**	**183.4122**	**3.5700e-003**		**183.5014**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4914	4.0128	19.3237	0.0360		0.0587	0.0587		0.0587	0.0587	0.0000	3,485.1276	3,485.1276	1.1272		3,513.3066
Total	**0.4914**	**4.0128**	**19.3237**	**0.0360**	**8.1298**	**0.0587**	**8.1886**	**4.4688**	**0.0587**	**4.5276**	**0.0000**	**3,485.1276**	**3,485.1276**	**1.1272**		**3,513.3066**

3.10 Finishing/Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0699	0.0379	0.5219	1.8400e-003	0.2054	1.2400e-003	0.2066	0.0545	1.1400e-003	0.0556		183.4122	183.4122	3.5700e-003		183.5014
Total	**0.0699**	**0.0379**	**0.5219**	**1.8400e-003**	**0.2054**	**1.2400e-003**	**0.2066**	**0.0545**	**1.1400e-003**	**0.0556**		**183.4122**	**183.4122**	**3.5700e-003**		**183.5014**

3.11 Asphalt Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5064	4.9991	7.1425	0.0112		0.2505	0.2505		0.2305	0.2305		1,080.3069	1,080.3069	0.3494		1,089.0418
Paving	0.3624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8688**	**4.9991**	**7.1425**	**0.0112**		**0.2505**	**0.2505**		**0.2305**	**0.2305**		**1,080.3069**	**1,080.3069**	**0.3494**		**1,089.0418**

3.11 Asphalt Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.1700e-003	0.0757	0.0206	2.6000e-004	6.7700e-003	9.0000e-005	6.8600e-003	1.9500e-003	8.0000e-005	2.0300e-003		27.8095	27.8095	1.1100e-003		27.8372
Worker	0.0140	7.5800e-003	0.1044	3.7000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		36.6824	36.6824	7.1000e-004		36.7003
Total	**0.0161**	**0.0833**	**0.1250**	**6.3000e-004**	**0.0478**	**3.4000e-004**	**0.0482**	**0.0128**	**3.1000e-004**	**0.0132**		**64.4919**	**64.4919**	**1.8200e-003**		**64.5375**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1373	0.5948	8.4638	0.0112		0.0183	0.0183		0.0183	0.0183	0.0000	1,080.3069	1,080.3069	0.3494		1,089.0418
Paving	0.3624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4997**	**0.5948**	**8.4638**	**0.0112**		**0.0183**	**0.0183**		**0.0183**	**0.0183**	**0.0000**	**1,080.3069**	**1,080.3069**	**0.3494**		**1,089.0418**

3.11 Asphalt Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.1700e-003	0.0757	0.0206	2.6000e-004	6.7700e-003	9.0000e-005	6.8600e-003	1.9500e-003	8.0000e-005	2.0300e-003		27.8095	27.8095	1.1100e-003		27.8372
Worker	0.0140	7.5800e-003	0.1044	3.7000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		36.6824	36.6824	7.1000e-004		36.7003
Total	**0.0161**	**0.0833**	**0.1250**	**6.3000e-004**	**0.0478**	**3.4000e-004**	**0.0482**	**0.0128**	**3.1000e-004**	**0.0132**		**64.4919**	**64.4919**	**1.8200e-003**		**64.5375**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.5649	19.4836	46.3717	0.1638	13.8415	0.1301	13.9716	3.7030	0.1214	3.8244		16,595.7197	16,595.7197	0.5979		16,610.6678
Unmitigated	6.4248	24.2852	68.6819	0.2624	23.1703	0.2020	23.3723	6.1987	0.1887	6.3873		26,553.7190	26,553.7190	0.8652		26,575.3498

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Research & Development	4,351.90	4,351.90	4351.90	10,906,926	6,515,588
Total	4,351.90	4,351.90	4,351.90	10,906,926	6,515,588

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Other Asphalt Surfaces	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Research & Development	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
NaturalGas Unmitigated	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	35383	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436
Total		**0.3816**	**3.4689**	**2.9139**	**0.0208**		**0.2636**	**0.2636**		**0.2636**	**0.2636**		**4,162.7067**	**4,162.7067**	**0.0798**	**0.0763**	**4,187.4436**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	32.7546	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
Total		**0.3532**	**3.2112**	**2.6974**	**0.0193**		**0.2441**	**0.2441**		**0.2441**	**0.2441**		**3,853.4807**	**3,853.4807**	**0.0739**	**0.0707**	**3,876.3800**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Unmitigated	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.3091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.7300e-003	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Total	**12.8546**	**8.6000e-004**	**0.0943**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**		**0.2021**	**0.2021**	**5.3000e-004**		**0.2154**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.3091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.7300e-003	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Total	**12.8546**	**8.6000e-004**	**0.0943**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**		**0.2021**	**0.2021**	**5.3000e-004**		**0.2154**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

600 Addison Street Project

Bay Area AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	521.81	1000sqft	5.57	521,810.00	0
Enclosed Parking with Elevator	365.80	1000sqft	2.00	365,800.00	0
Other Asphalt Surfaces	35.99	1000sqft	0.83	35,990.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	64
Climate Zone	5			**Operational Year**	2023
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	328.8	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO2 intensity based on 5-year average (PG&E 2015)

Land Use - Total project site is 8.4 acres

Construction Phase - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Assuming use of skid steer loaders and tractors/loaders/backhoes

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Off-road Equipment - Based on construction activities and schedule assumptions provided by Project Applicant

Trips and VMT - Based on construction activities and schedule assumptions provided by Project Applicant

Demolition - Based on construction activities and schedule assumptions provided by Project Applicant

Grading - Based on construction activities and schedule assumptions provided by Project Applicant

Vehicle Trips - Trip generation based on project's traffic study

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and Tier 4 mitigation

Mobile Land Use Mitigation -

Energy Mitigation - Assuming 3.3% exceedance of 2019 Title 24 standards and the proposed Project would also incorporate photovoltaic systems to provide renewable energy onsite such that the core building operation would be net zero site energy at the onset of the building's operation.

Waste Mitigation - The proposed Project would be consistent with the CalRecycle Waste Diversion and Recycling Mandate which would reduce solid waste production by 75 percen

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstructionPhase	NumDays	20.00	110.00
tblConstructionPhase	NumDays	230.00	430.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	60.00
tblConstructionPhase	NumDays	20.00	35.00
tblConstructionPhase	NumDays	20.00	6.00
tblConstructionPhase	NumDays	10.00	32.00
tblGrading	AcresOfGrading	90.00	8.40
tblGrading	AcresOfGrading	52.50	8.40
tblGrading	AcresOfGrading	10.00	0.00
tblGrading	MaterialExported	0.00	59,000.00
tblGrading	MaterialExported	0.00	15,000.00
tblLandUse	LotAcreage	11.98	5.57
tblLandUse	LotAcreage	8.40	2.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	130.00	125.00
tblOffRoadEquipment	HorsePower	132.00	130.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00
tblOffRoadEquipment	HorsePower	247.00	255.00

tblOffRoadEquipment	HorsePower	63.00	62.00
tblOffRoadEquipment	HorsePower	158.00	162.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	HorsePower	367.00	361.00
tblOffRoadEquipment	HorsePower	367.00	361.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	2.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	328.8
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00

tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripLength	20.00	10.00
tblTripsAndVMT	HaulingTripNumber	268.00	605.00
tblTripsAndVMT	HaulingTripNumber	350.00	3,900.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	1,875.00	3,510.00
tblTripsAndVMT	HaulingTripNumber	7,375.00	11,700.00
tblTripsAndVMT	HaulingTripNumber	0.00	180.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	151.00	2.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	8.00	5.00
tblTripsAndVMT	WorkerTripNumber	18.00	5.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	18.00	15.00
tblTripsAndVMT	WorkerTripNumber	10.00	15.00
tblTripsAndVMT	WorkerTripNumber	336.00	50.00
tblTripsAndVMT	WorkerTripNumber	67.00	8.00
tblTripsAndVMT	WorkerTripNumber	18.00	25.00

tblVehicleTrips	ST_TR	1.90	8.34
tblVehicleTrips	SU_TR	1.11	8.34
tblVehicleTrips	WD_TR	8.11	8.34

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	8.1884	162.8819	75.6651	0.3448	23.4780	3.0870	25.6460	9.5926	2.8749	11.5989	0.0000	36,480.0595	36,480.0595	3.5431	0.0000	36,564.2657
2022	54.2527	55.7013	55.1701	0.0995	7.0059	2.7032	9.7091	3.5322	2.5157	6.0478	0.0000	9,616.9178	9,616.9178	2.4631	0.0000	9,678.4945
2023	5.5754	49.5470	46.3380	0.0883	18.7438	2.3119	21.0557	10.1108	2.1519	12.2628	0.0000	8,503.1485	8,503.1485	2.1704	0.0000	8,557.4087
Maximum	**54.2527**	**162.8819**	**75.6651**	**0.3448**	**23.4780**	**3.0870**	**25.6460**	**10.1108**	**2.8749**	**12.2628**	**0.0000**	**36,480.0595**	**36,480.0595**	**3.5431**	**0.0000**	**36,564.2657**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	4.0362	128.8186	65.7637	0.3448	16.7604	0.3825	17.1429	5.9372	0.3687	6.3059	0.0000	36,480.0595	36,480.0595	3.5431	0.0000	36,564.2657
2022	51.8373	6.9745	59.4692	0.0995	3.5537	0.1497	3.7034	1.6964	0.1492	1.8456	0.0000	9,616.9178	9,616.9178	2.4631	0.0000	9,678.4945
2023	1.6474	7.5809	52.0361	0.0883	8.8073	0.1332	8.9405	4.6490	0.1328	4.7818	0.0000	8,503.1485	8,503.1485	2.1704	0.0000	8,557.4087
Maximum	**51.8373**	**128.8186**	**65.7637**	**0.3448**	**16.7604**	**0.3825**	**17.1429**	**5.9372**	**0.3687**	**6.3059**	**0.0000**	**36,480.0595**	**36,480.0595**	**3.5431**	**0.0000**	**36,564.2657**

600 Addison Street Project - Bay Area AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**15.43**	**46.53**	**-0.05**	**0.00**	**40.84**	**91.79**	**47.20**	**47.14**	**91.37**	**56.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Energy	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436
Mobile	5.5499	25.5896	68.5019	0.2457	23.1703	0.2029	23.3732	6.1987	0.1895	6.3882		24,872.6716	24,872.6716	0.8779		24,894.6196
Total	**18.7861**	**29.0594**	**71.5101**	**0.2665**	**23.1703**	**0.4669**	**23.6372**	**6.1987**	**0.4535**	**6.6522**		**29,035.5805**	**29,035.5805**	**0.9582**	**0.0763**	**29,082.2785**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Energy	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
Mobile	4.7019	20.2411	48.6516	0.1533	13.8415	0.1310	13.9725	3.7030	0.1223	3.8252		15,526.5574	15,526.5574	0.6222		15,542.1115
Total	**17.9097**	**23.4532**	**51.4433**	**0.1726**	**13.8415**	**0.3754**	**14.2169**	**3.7030**	**0.3667**	**4.0696**		**19,380.2402**	**19,380.2402**	**0.6966**	**0.0707**	**19,418.7068**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.66**	**19.29**	**28.06**	**35.25**	**40.26**	**19.60**	**39.85**	**40.26**	**19.15**	**38.82**	**0.00**	**33.25**	**33.25**	**27.31**	**7.43**	**33.23**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Demolition	Demolition	9/1/2021	9/21/2021	5	15	
2	Asphalt Demolition	Demolition	9/7/2021	9/20/2021	5	10	
3	Site Preparation	Site Preparation	9/22/2021	10/5/2021	5	10	
4	Rough Grading	Grading	10/6/2021	12/28/2021	5	60	
5	Utility Trenching	Trenching	12/29/2021	2/22/2022	5	40	
6	Fine Grading	Grading	1/12/2022	3/1/2022	5	35	
7	Building Construction	Building Construction	1/19/2022	9/12/2023	5	430	
8	Architectural Coating	Architectural Coating	7/6/2022	12/6/2022	5	110	
9	Finishing/Landscaping	Site Preparation	7/30/2023	9/12/2023	5	32	
10	Asphalt Paving	Paving	9/5/2023	9/12/2023	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.83

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 782,715; Non-Residential Outdoor: 260,905; Striped Parking Area: 24,107 (Architectural Coating – sqft)

OffRoad Equipment

600 Addison Street Project - Bay Area AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Demolition	Excavators	2	8.00	162	0.38
Building Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Building Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Asphalt Demolition	Excavators	2	8.00	162	0.38
Asphalt Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Asphalt Demolition	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Graders	2	8.00	174	0.41
Site Preparation	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Rough Grading	Excavators	1	8.00	162	0.38
Rough Grading	Graders	1	8.00	174	0.41
Rough Grading	Rubber Tired Dozers	1	8.00	255	0.40
Rough Grading	Scrapers	1	8.00	361	0.48
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Utility Trenching	Excavators	1	8.00	162	0.38
Utility Trenching	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Fine Grading	Excavators	1	8.00	158	0.38
Fine Grading	Graders	1	8.00	174	0.41
Fine Grading	Rubber Tired Dozers	1	8.00	247	0.40
Fine Grading	Scrapers	1	8.00	361	0.48
Fine Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	4	8.00	89	0.20
Building Construction	Generator Sets	2	8.00	84	0.74

Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Aerial Lifts	3	8.00	62	0.31
Architectural Coating	Air Compressors	3	8.00	78	0.48
Finishing/Landscaping	Rubber Tired Dozers	3	8.00	247	0.40
Finishing/Landscaping	Skid Steer Loaders	2	8.00	65	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Asphalt Paving	Pavers	1	8.00	125	0.42
Asphalt Paving	Paving Equipment	1	8.00	130	0.36
Asphalt Paving	Rollers	1	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Demolition	7	15.00	2.00	605.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demolition	7	5.00	0.00	3,900.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	15.00	1.00	3,510.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	7	15.00	2.00	11,700.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	4	15.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	6	15.00	1.00	180.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Building Construction	11	50.00	2.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	6	8.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	7	25.00	0.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT
Asphalt Paving	3	5.00	1.00	0.00	10.80	7.30	10.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.8718	0.0000	3.8718	0.5862	0.0000	0.5862			0.0000			0.0000
Off-Road	3.0004	29.5265	29.4434	0.0409		1.4458	1.4458		1.3440	1.3440		3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**3.0004**	**29.5265**	**29.4434**	**0.0409**	**3.8718**	**1.4458**	**5.3176**	**0.5862**	**1.3440**	**1.9302**		**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.2 Building Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1980	7.2656	1.5242	0.0174	0.3528	0.0182	0.3709	0.0967	0.0174	0.1141		1,860.0799	1,860.0799	0.1219		1,863.1273
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0135	4.6000e-004	0.0140	3.9000e-003	4.4000e-004	4.3400e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.2557**	**7.5089**	**1.9250**	**0.0190**	**0.4895**	**0.0194**	**0.5089**	**0.1333**	**0.0185**	**0.1518**		**2,025.8358**	**2,025.8358**	**0.1273**		**2,029.0185**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.7423	0.0000	1.7423	0.2638	0.0000	0.2638			0.0000			0.0000
Off-Road	0.4847	2.1004	24.4927	0.0409		0.0646	0.0646		0.0646	0.0646	0.0000	3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**0.4847**	**2.1004**	**24.4927**	**0.0409**	**1.7423**	**0.0646**	**1.8069**	**0.2638**	**0.0646**	**0.3284**	**0.0000**	**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.2 Building Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1980	7.2656	1.5242	0.0174	0.3528	0.0182	0.3709	0.0967	0.0174	0.1141		1,860.0799	1,860.0799	0.1219		1,863.1273
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0135	4.6000e-004	0.0140	3.9000e-003	4.4000e-004	4.3400e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.2557**	**7.5089**	**1.9250**	**0.0190**	**0.4895**	**0.0194**	**0.5089**	**0.1333**	**0.0185**	**0.1518**		**2,025.8358**	**2,025.8358**	**0.1273**		**2,029.0185**

3.3 Asphalt Demolition - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.5795	0.0000	7.5795	1.1476	0.0000	1.1476			0.0000			0.0000
Off-Road	3.0004	29.5265	29.4434	0.0409		1.4458	1.4458		1.3440	1.3440		3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**3.0004**	**29.5265**	**29.4434**	**0.0409**	**7.5795**	**1.4458**	**9.0253**	**1.1476**	**1.3440**	**2.4916**		**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.3 Asphalt Demolition - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9148	70.2539	14.7385	0.1681	3.4110	0.1758	3.5867	0.9351	0.1682	1.1033		17,985.8965	17,985.8965	1.1787		18,015.3629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0170	0.0116	0.1149	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.4768	36.4768	8.3000e-004		36.4975
Total	**1.9318**	**70.2655**	**14.8534**	**0.1685**	**3.4520**	**0.1760**	**3.6281**	**0.9460**	**0.1684**	**1.1144**		**18,022.3734**	**18,022.3734**	**1.1795**		**18,051.8604**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.4108	0.0000	3.4108	0.5164	0.0000	0.5164			0.0000			0.0000
Off-Road	0.4847	2.1004	24.4927	0.0409		0.0646	0.0646		0.0646	0.0646	0.0000	3,943.5426	3,943.5426	1.1182		3,971.4965
Total	**0.4847**	**2.1004**	**24.4927**	**0.0409**	**3.4108**	**0.0646**	**3.4754**	**0.5164**	**0.0646**	**0.5811**	**0.0000**	**3,943.5426**	**3,943.5426**	**1.1182**		**3,971.4965**

3.3 Asphalt Demolition - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	1.9148	70.2539	14.7385	0.1681	3.4110	0.1758	3.5867	0.9351	0.1682	1.1033		17,985.8965	17,985.8965	1.1787		18,015.3629
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0170	0.0116	0.1149	3.7000e-004	0.0411	2.6000e-004	0.0413	0.0109	2.4000e-004	0.0111		36.4768	36.4768	8.3000e-004		36.4975
Total	**1.9318**	**70.2655**	**14.8534**	**0.1685**	**3.4520**	**0.1760**	**3.6281**	**0.9460**	**0.1684**	**1.1144**		**18,022.3734**	**18,022.3734**	**1.1795**		**18,051.8604**

3.4 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					12.2138	0.0000	12.2138	6.6461	0.0000	6.6461			0.0000			0.0000
Off-Road	3.6045	36.1469	30.2762	0.0395		1.8497	1.8497		1.7017	1.7017		3,830.2593	3,830.2593	1.2388		3,861.2289
Total	**3.6045**	**36.1469**	**30.2762**	**0.0395**	**12.2138**	**1.8497**	**14.0635**	**6.6461**	**1.7017**	**8.3478**		**3,830.2593**	**3,830.2593**	**1.2388**		**3,861.2289**

3.4 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4466	126.4570	26.5293	0.3025	10.7803	0.3164	11.0967	2.8223	0.3027	3.1249		32,374.6138	32,374.6138	2.1216		32,427.6532
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0232	4.6000e-004	0.0237	6.2700e-003	4.4000e-004	6.7100e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.1022	0.0696	0.6894	2.2000e-003	0.4606	1.5500e-003	0.4622	0.1179	1.4300e-003	0.1194		218.8610	218.8610	4.9500e-003		218.9848
Total	**3.5554**	**126.7351**	**27.2747**	**0.3053**	**11.2641**	**0.3184**	**11.5825**	**2.9465**	**0.3046**	**3.2510**		**32,649.8002**	**32,649.8002**	**2.1295**		**32,703.0368**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.4962	0.0000	5.4962	2.9908	0.0000	2.9908			0.0000			0.0000
Off-Road	0.4808	2.0835	24.2525	0.0395		0.0641	0.0641		0.0641	0.0641	0.0000	3,830.2593	3,830.2593	1.2388		3,861.2289
Total	**0.4808**	**2.0835**	**24.2525**	**0.0395**	**5.4962**	**0.0641**	**5.5603**	**2.9908**	**0.0641**	**3.0549**	**0.0000**	**3,830.2593**	**3,830.2593**	**1.2388**		**3,861.2289**

3.4 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4466	126.4570	26.5293	0.3025	10.7803	0.3164	11.0967	2.8223	0.3027	3.1249		32,374.6138	32,374.6138	2.1216		32,427.6532
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0232	4.6000e-004	0.0237	6.2700e-003	4.4000e-004	6.7100e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.1022	0.0696	0.6894	2.2000e-003	0.4606	1.5500e-003	0.4622	0.1179	1.4300e-003	0.1194		218.8610	218.8610	4.9500e-003		218.9848
Total	**3.5554**	**126.7351**	**27.2747**	**0.3053**	**11.2641**	**0.3184**	**11.5825**	**2.9465**	**0.3046**	**3.2510**		**32,649.8002**	**32,649.8002**	**2.1295**		**32,703.0368**

3.5 Rough Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2818	0.0000	6.2818	3.3431	0.0000	3.3431			0.0000			0.0000
Off-Road	3.2324	33.6529	28.7733	0.0446		1.6092	1.6092		1.4804	1.4804		4,323.2478	4,323.2478	1.3982		4,358.2035
Total	**3.2324**	**33.6529**	**28.7733**	**0.0446**	**6.2818**	**1.6092**	**7.8909**	**3.3431**	**1.4804**	**4.8235**		**4,323.2478**	**4,323.2478**	**1.3982**		**4,358.2035**

3.5 Rough Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9574	35.1269	7.3692	0.0840	1.7055	0.0879	1.7934	0.4676	0.0841	0.5516		8,992.9483	8,992.9483	0.5893		9,007.6815
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0135	4.6000e-004	0.0140	3.9000e-003	4.4000e-004	4.3400e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**1.0151**	**35.3702**	**7.7700**	**0.0857**	**1.8422**	**0.0891**	**1.9314**	**0.5041**	**0.0852**	**0.5894**		**9,158.7042**	**9,158.7042**	**0.5947**		**9,173.5726**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8268	0.0000	2.8268	1.5044	0.0000	1.5044			0.0000			0.0000
Off-Road	0.5459	2.3655	26.3801	0.0446		0.0728	0.0728		0.0728	0.0728	0.0000	4,323.2478	4,323.2478	1.3982		4,358.2034
Total	**0.5459**	**2.3655**	**26.3801**	**0.0446**	**2.8268**	**0.0728**	**2.8996**	**1.5044**	**0.0728**	**1.5772**	**0.0000**	**4,323.2478**	**4,323.2478**	**1.3982**		**4,358.2034**

3.5 Rough Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.9574	35.1269	7.3692	0.0840	1.7055	0.0879	1.7934	0.4676	0.0841	0.5516		8,992.9483	8,992.9483	0.5893		9,007.6815
Vendor	6.5700e-003	0.2085	0.0560	5.3000e-004	0.0135	4.6000e-004	0.0140	3.9000e-003	4.4000e-004	4.3400e-003		56.3254	56.3254	2.9300e-003		56.3988
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**1.0151**	**35.3702**	**7.7700**	**0.0857**	**1.8422**	**0.0891**	**1.9314**	**0.5041**	**0.0852**	**0.5894**		**9,158.7042**	**9,158.7042**	**0.5947**		**9,173.5726**

3.6 Utility Trenching - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7968	7.8953	10.1354	0.0146		0.4424	0.4424		0.4070	0.4070		1,415.5553	1,415.5553	0.4578		1,427.0008
Total	**0.7968**	**7.8953**	**10.1354**	**0.0146**		**0.4424**	**0.4424**		**0.4070**	**0.4070**		**1,415.5553**	**1,415.5553**	**0.4578**		**1,427.0008**

3.6 Utility Trenching - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2900e-003	0.1042	0.0280	2.7000e-004	6.7700e-003	2.3000e-004	7.0000e-003	1.9500e-003	2.2000e-004	2.1700e-003		28.1627	28.1627	1.4700e-003		28.1994
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.0544**	**0.1391**	**0.3727**	**1.3700e-003**	**0.1300**	**1.0100e-003**	**0.1310**	**0.0346**	**9.3000e-004**	**0.0356**		**137.5932**	**137.5932**	**3.9500e-003**		**137.6918**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1791	0.7760	11.0434	0.0146		0.0239	0.0239		0.0239	0.0239	0.0000	1,415.5553	1,415.5553	0.4578		1,427.0008
Total	**0.1791**	**0.7760**	**11.0434**	**0.0146**		**0.0239**	**0.0239**		**0.0239**	**0.0239**	**0.0000**	**1,415.5553**	**1,415.5553**	**0.4578**		**1,427.0008**

3.6 Utility Trenching - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.2900e-003	0.1042	0.0280	2.7000e-004	6.7700e-003	2.3000e-004	7.0000e-003	1.9500e-003	2.2000e-004	2.1700e-003		28.1627	28.1627	1.4700e-003		28.1994
Worker	0.0511	0.0348	0.3447	1.1000e-003	0.1232	7.8000e-004	0.1240	0.0327	7.1000e-004	0.0334		109.4305	109.4305	2.4800e-003		109.4924
Total	**0.0544**	**0.1391**	**0.3727**	**1.3700e-003**	**0.1300**	**1.0100e-003**	**0.1310**	**0.0346**	**9.3000e-004**	**0.0356**		**137.5932**	**137.5932**	**3.9500e-003**		**137.6918**

3.6 Utility Trenching - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7017	6.8489	10.0514	0.0146		0.3585	0.3585		0.3298	0.3298		1,416.3907	1,416.3907	0.4581		1,427.8430
Total	**0.7017**	**6.8489**	**10.0514**	**0.0146**		**0.3585**	**0.3585**		**0.3298**	**0.3298**		**1,416.3907**	**1,416.3907**	**0.4581**		**1,427.8430**

3.6 Utility Trenching - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0600e-003	0.0987	0.0263	2.6000e-004	6.7700e-003	2.0000e-004	6.9700e-003	1.9500e-003	1.9000e-004	2.1400e-003		27.8839	27.8839	1.4000e-003		27.9189
Worker	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0508**	**0.1299**	**0.3427**	**1.3200e-003**	**0.1300**	**9.6000e-004**	**0.1310**	**0.0346**	**8.9000e-004**	**0.0355**		**133.3027**	**133.3027**	**3.6200e-003**		**133.3932**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1791	0.7760	11.0434	0.0146		0.0239	0.0239		0.0239	0.0239	0.0000	1,416.3907	1,416.3907	0.4581		1,427.8430
Total	**0.1791**	**0.7760**	**11.0434**	**0.0146**		**0.0239**	**0.0239**		**0.0239**	**0.0239**	**0.0000**	**1,416.3907**	**1,416.3907**	**0.4581**		**1,427.8430**

3.6 Utility Trenching - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0600e-003	0.0987	0.0263	2.6000e-004	6.7700e-003	2.0000e-004	6.9700e-003	1.9500e-003	1.9000e-004	2.1400e-003		27.8839	27.8839	1.4000e-003		27.9189
Worker	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0508**	**0.1299**	**0.3427**	**1.3200e-003**	**0.1300**	**9.6000e-004**	**0.1310**	**0.0346**	**8.9000e-004**	**0.0355**		**133.3027**	**133.3027**	**3.6200e-003**		**133.3932**

3.7 Fine Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.2766	0.0000	6.2766	3.3377	0.0000	3.3377			0.0000			0.0000
Off-Road	2.7288	27.9092	21.9794	0.0411		1.3154	1.3154		1.2102	1.2102		3,977.9278	3,977.9278	1.2865		4,010.0914
Total	**2.7288**	**27.9092**	**21.9794**	**0.0411**	**6.2766**	**1.3154**	**7.5920**	**3.3377**	**1.2102**	**4.5479**		**3,977.9278**	**3,977.9278**	**1.2865**		**4,010.0914**

3.7 Fine Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0238	0.8624	0.1897	2.1800e-003	0.0450	1.9900e-003	0.0470	0.0123	1.9000e-003	0.0142		234.0150	234.0150	0.0150		234.3902
Vendor	3.0600e-003	0.0987	0.0263	2.6000e-004	6.7700e-003	2.0000e-004	6.9700e-003	1.9500e-003	1.9000e-004	2.1400e-003		27.8839	27.8839	1.4000e-003		27.9189
Worker	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0745**	**0.9923**	**0.5324**	**3.5000e-003**	**0.1750**	**2.9500e-003**	**0.1779**	**0.0470**	**2.7900e-003**	**0.0498**		**367.3177**	**367.3177**	**0.0186**		**367.7834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8245	0.0000	2.8245	1.5020	0.0000	1.5020			0.0000			0.0000
Off-Road	0.5029	2.1793	23.8147	0.0411		0.0671	0.0671		0.0671	0.0671	0.0000	3,977.9278	3,977.9278	1.2865		4,010.0914
Total	**0.5029**	**2.1793**	**23.8147**	**0.0411**	**2.8245**	**0.0671**	**2.8915**	**1.5020**	**0.0671**	**1.5690**	**0.0000**	**3,977.9278**	**3,977.9278**	**1.2865**		**4,010.0914**

3.7 Fine Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0238	0.8624	0.1897	2.1800e-003	0.0450	1.9900e-003	0.0470	0.0123	1.9000e-003	0.0142		234.0150	234.0150	0.0150		234.3902
Vendor	3.0600e-003	0.0987	0.0263	2.6000e-004	6.7700e-003	2.0000e-004	6.9700e-003	1.9500e-003	1.9000e-004	2.1400e-003		27.8839	27.8839	1.4000e-003		27.9189
Worker	0.0477	0.0312	0.3163	1.0600e-003	0.1232	7.6000e-004	0.1240	0.0327	7.0000e-004	0.0334		105.4188	105.4188	2.2200e-003		105.4742
Total	**0.0745**	**0.9923**	**0.5324**	**3.5000e-003**	**0.1750**	**2.9500e-003**	**0.1779**	**0.0470**	**2.7900e-003**	**0.0498**		**367.3177**	**367.3177**	**0.0186**		**367.7834**

3.8 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1428	19.5196	21.1573	0.0349		1.0225	1.0225		0.9693	0.9693		3,314.8151	3,314.8151	0.6860		3,331.9650
Total	**2.1428**	**19.5196**	**21.1573**	**0.0349**		**1.0225**	**1.0225**		**0.9693**	**0.9693**		**3,314.8151**	**3,314.8151**	**0.6860**		**3,331.9650**

3.8 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1300e-003	0.1974	0.0527	5.3000e-004	0.0135	4.0000e-004	0.0139	3.9000e-003	3.8000e-004	4.2800e-003		55.7678	55.7678	2.8000e-003		55.8379
Worker	0.1590	0.1041	1.0544	3.5200e-003	0.4107	2.5200e-003	0.4133	0.1090	2.3200e-003	0.1113		351.3960	351.3960	7.3900e-003		351.5808
Total	**0.1651**	**0.3014**	**1.1071**	**4.0500e-003**	**0.4243**	**2.9200e-003**	**0.4272**	**0.1129**	**2.7000e-003**	**0.1156**		**407.1638**	**407.1638**	**0.0102**		**407.4186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4111	2.5956	22.6290	0.0349		0.0519	0.0519		0.0519	0.0519	0.0000	3,314.8151	3,314.8151	0.6860		3,331.9650
Total	**0.4111**	**2.5956**	**22.6290**	**0.0349**		**0.0519**	**0.0519**		**0.0519**	**0.0519**	**0.0000**	**3,314.8151**	**3,314.8151**	**0.6860**		**3,331.9650**

3.8 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	6.1300e-003	0.1974	0.0527	5.3000e-004	0.0135	4.0000e-004	0.0139	3.9000e-003	3.8000e-004	4.2800e-003		55.7678	55.7678	2.8000e-003		55.8379
Worker	0.1590	0.1041	1.0544	3.5200e-003	0.4107	2.5200e-003	0.4133	0.1090	2.3200e-003	0.1113		351.3960	351.3960	7.3900e-003		351.5808
Total	**0.1651**	**0.3014**	**1.1071**	**4.0500e-003**	**0.4243**	**2.9200e-003**	**0.4272**	**0.1129**	**2.7000e-003**	**0.1156**		**407.1638**	**407.1638**	**0.0102**		**407.4186**

3.8 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9745	17.9879	21.0234	0.0349		0.8843	0.8843		0.8385	0.8385		3,315.6916	3,315.6916	0.6797		3,332.6843
Total	**1.9745**	**17.9879**	**21.0234**	**0.0349**		**0.8843**	**0.8843**		**0.8385**	**0.8385**		**3,315.6916**	**3,315.6916**	**0.6797**		**3,332.6843**

3.8 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.6100e-003	0.1521	0.0468	5.1000e-004	0.0135	1.8000e-004	0.0137	3.9000e-003	1.7000e-004	4.0700e-003		54.2132	54.2132	2.3800e-003		54.2727
Worker	0.1489	0.0936	0.9684	3.3900e-003	0.4107	2.4700e-003	0.4132	0.1090	2.2800e-003	0.1112		337.9391	337.9391	6.6100e-003		338.1044
Total	**0.1535**	**0.2457**	**1.0152**	**3.9000e-003**	**0.4243**	**2.6500e-003**	**0.4269**	**0.1129**	**2.4500e-003**	**0.1153**		**392.1523**	**392.1523**	**8.9900e-003**		**392.3771**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4111	2.5956	22.6290	0.0349		0.0519	0.0519		0.0519	0.0519	0.0000	3,315.6916	3,315.6916	0.6797		3,332.6843
Total	**0.4111**	**2.5956**	**22.6290**	**0.0349**		**0.0519**	**0.0519**		**0.0519**	**0.0519**	**0.0000**	**3,315.6916**	**3,315.6916**	**0.6797**		**3,332.6843**

3.8 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.6100e-003	0.1521	0.0468	5.1000e-004	0.0135	1.8000e-004	0.0137	3.9000e-003	1.7000e-004	4.0700e-003		54.2132	54.2132	2.3800e-003		54.2727
Worker	0.1489	0.0936	0.9684	3.3900e-003	0.4107	2.4700e-003	0.4132	0.1090	2.2800e-003	0.1112		337.9391	337.9391	6.6100e-003		338.1044
Total	**0.1535**	**0.2457**	**1.0152**	**3.9000e-003**	**0.4243**	**2.6500e-003**	**0.4269**	**0.1129**	**2.4500e-003**	**0.1153**		**392.1523**	**392.1523**	**8.9900e-003**		**392.3771**

3.9 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.9948					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.9246	7.2881	10.4842	0.0169		0.3576	0.3576		0.3551	0.3551		1,605.9079	1,605.9079	0.2286		1,611.6223
Total	**51.9195**	**7.2881**	**10.4842**	**0.0169**		**0.3576**	**0.3576**		**0.3551**	**0.3551**		**1,605.9079**	**1,605.9079**	**0.2286**		**1,611.6223**

3.9 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0254	0.0167	0.1687	5.6000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		56.2234	56.2234	1.1800e-003		56.2529
Total	**0.0254**	**0.0167**	**0.1687**	**5.6000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**56.2234**	**56.2234**	**1.1800e-003**		**56.2529**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	50.9948					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2409	3.3015	11.0924	0.0169		0.0240	0.0240		0.0240	0.0240	0.0000	1,605.9079	1,605.9079	0.2286		1,611.6223
Total	**51.2357**	**3.3015**	**11.0924**	**0.0169**		**0.0240**	**0.0240**		**0.0240**	**0.0240**	**0.0000**	**1,605.9079**	**1,605.9079**	**0.2286**		**1,611.6223**

3.9 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0254	0.0167	0.1687	5.6000e-004	0.0657	4.0000e-004	0.0661	0.0174	3.7000e-004	0.0178		56.2234	56.2234	1.1800e-003		56.2529
Total	**0.0254**	**0.0167**	**0.1687**	**5.6000e-004**	**0.0657**	**4.0000e-004**	**0.0661**	**0.0174**	**3.7000e-004**	**0.0178**		**56.2234**	**56.2234**	**1.1800e-003**		**56.2529**

3.10 Finishing/Landscaping - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	2.4869	26.1822	16.5525	0.0360		1.1729	1.1729		1.0791	1.0791		3,485.1276	3,485.1276	1.1272		3,513.3066
Total	**2.4869**	**26.1822**	**16.5525**	**0.0360**	**18.0663**	**1.1729**	**19.2392**	**9.9307**	**1.0791**	**11.0098**		**3,485.1276**	**3,485.1276**	**1.1272**		**3,513.3066**

3.10 Finishing/Landscaping - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0745	0.0468	0.4842	1.6900e-003	0.2054	1.2400e-003	0.2066	0.0545	1.1400e-003	0.0556		168.9695	168.9695	3.3100e-003		169.0522
Total	**0.0745**	**0.0468**	**0.4842**	**1.6900e-003**	**0.2054**	**1.2400e-003**	**0.2066**	**0.0545**	**1.1400e-003**	**0.0556**		**168.9695**	**168.9695**	**3.3100e-003**		**169.0522**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.1298	0.0000	8.1298	4.4688	0.0000	4.4688			0.0000			0.0000
Off-Road	0.4914	4.0128	19.3237	0.0360		0.0587	0.0587		0.0587	0.0587	0.0000	3,485.1276	3,485.1276	1.1272		3,513.3066
Total	**0.4914**	**4.0128**	**19.3237**	**0.0360**	**8.1298**	**0.0587**	**8.1886**	**4.4688**	**0.0587**	**4.5276**	**0.0000**	**3,485.1276**	**3,485.1276**	**1.1272**		**3,513.3066**

3.10 Finishing/Landscaping - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0745	0.0468	0.4842	1.6900e-003	0.2054	1.2400e-003	0.2066	0.0545	1.1400e-003	0.0556		168.9695	168.9695	3.3100e-003		169.0522
Total	**0.0745**	**0.0468**	**0.4842**	**1.6900e-003**	**0.2054**	**1.2400e-003**	**0.2066**	**0.0545**	**1.1400e-003**	**0.0556**		**168.9695**	**168.9695**	**3.3100e-003**		**169.0522**

3.11 Asphalt Paving - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5064	4.9991	7.1425	0.0112		0.2505	0.2505		0.2305	0.2305		1,080.3069	1,080.3069	0.3494		1,089.0418
Paving	0.3624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.8688**	**4.9991**	**7.1425**	**0.0112**		**0.2505**	**0.2505**		**0.2305**	**0.2305**		**1,080.3069**	**1,080.3069**	**0.3494**		**1,089.0418**

3.11 Asphalt Paving - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3000e-003	0.0761	0.0234	2.6000e-004	6.7700e-003	9.0000e-005	6.8600e-003	1.9500e-003	9.0000e-005	2.0300e-003		27.1066	27.1066	1.1900e-003		27.1364
Worker	0.0149	9.3500e-003	0.0968	3.4000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		33.7939	33.7939	6.6000e-004		33.8104
Total	**0.0172**	**0.0854**	**0.1202**	**6.0000e-004**	**0.0478**	**3.4000e-004**	**0.0482**	**0.0128**	**3.2000e-004**	**0.0132**		**60.9005**	**60.9005**	**1.8500e-003**		**60.9468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1373	0.5948	8.4638	0.0112		0.0183	0.0183		0.0183	0.0183	0.0000	1,080.3069	1,080.3069	0.3494		1,089.0418
Paving	0.3624					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4997**	**0.5948**	**8.4638**	**0.0112**		**0.0183**	**0.0183**		**0.0183**	**0.0183**	**0.0000**	**1,080.3069**	**1,080.3069**	**0.3494**		**1,089.0418**

3.11 Asphalt Paving - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.3000e-003	0.0761	0.0234	2.6000e-004	6.7700e-003	9.0000e-005	6.8600e-003	1.9500e-003	9.0000e-005	2.0300e-003		27.1066	27.1066	1.1900e-003		27.1364
Worker	0.0149	9.3500e-003	0.0968	3.4000e-004	0.0411	2.5000e-004	0.0413	0.0109	2.3000e-004	0.0111		33.7939	33.7939	6.6000e-004		33.8104
Total	**0.0172**	**0.0854**	**0.1202**	**6.0000e-004**	**0.0478**	**3.4000e-004**	**0.0482**	**0.0128**	**3.2000e-004**	**0.0132**		**60.9005**	**60.9005**	**1.8500e-003**		**60.9468**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.7019	20.2411	48.6516	0.1533	13.8415	0.1310	13.9725	3.7030	0.1223	3.8252		15,526.5574	15,526.5574	0.6222		15,542.1115
Unmitigated	5.5499	25.5896	68.5019	0.2457	23.1703	0.2029	23.3732	6.1987	0.1895	6.3882		24,872.6716	24,872.6716	0.8779		24,894.6196

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Research & Development	4,351.90	4,351.90	4351.90	10,906,926	6,515,588
Total	4,351.90	4,351.90	4,351.90	10,906,926	6,515,588

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Other Asphalt Surfaces	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749
Research & Development	0.578638	0.038775	0.193686	0.110919	0.015677	0.005341	0.018293	0.026358	0.002641	0.002200	0.005832	0.000891	0.000749

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
NaturalGas Unmitigated	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	35383	0.3816	3.4689	2.9139	0.0208		0.2636	0.2636		0.2636	0.2636		4,162.7067	4,162.7067	0.0798	0.0763	4,187.4436
Total		**0.3816**	**3.4689**	**2.9139**	**0.0208**		**0.2636**	**0.2636**		**0.2636**	**0.2636**		**4,162.7067**	**4,162.7067**	**0.0798**	**0.0763**	**4,187.4436**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	32.7546	0.3532	3.2112	2.6974	0.0193		0.2441	0.2441		0.2441	0.2441		3,853.4807	3,853.4807	0.0739	0.0707	3,876.3800
Total		**0.3532**	**3.2112**	**2.6974**	**0.0193**		**0.2441**	**0.2441**		**0.2441**	**0.2441**		**3,853.4807**	**3,853.4807**	**0.0739**	**0.0707**	**3,876.3800**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Unmitigated	12.8546	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.3091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.7300e-003	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Total	**12.8546**	**8.6000e-004**	**0.0943**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**		**0.2021**	**0.2021**	**5.3000e-004**		**0.2154**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.5368					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	11.3091					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.7300e-003	8.6000e-004	0.0943	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004		0.2021	0.2021	5.3000e-004		0.2154
Total	**12.8546**	**8.6000e-004**	**0.0943**	**1.0000e-005**		**3.4000e-004**	**3.4000e-004**		**3.4000e-004**	**3.4000e-004**		**0.2021**	**0.2021**	**5.3000e-004**		**0.2154**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

HEALTH RISK ASSESSMENT DATA

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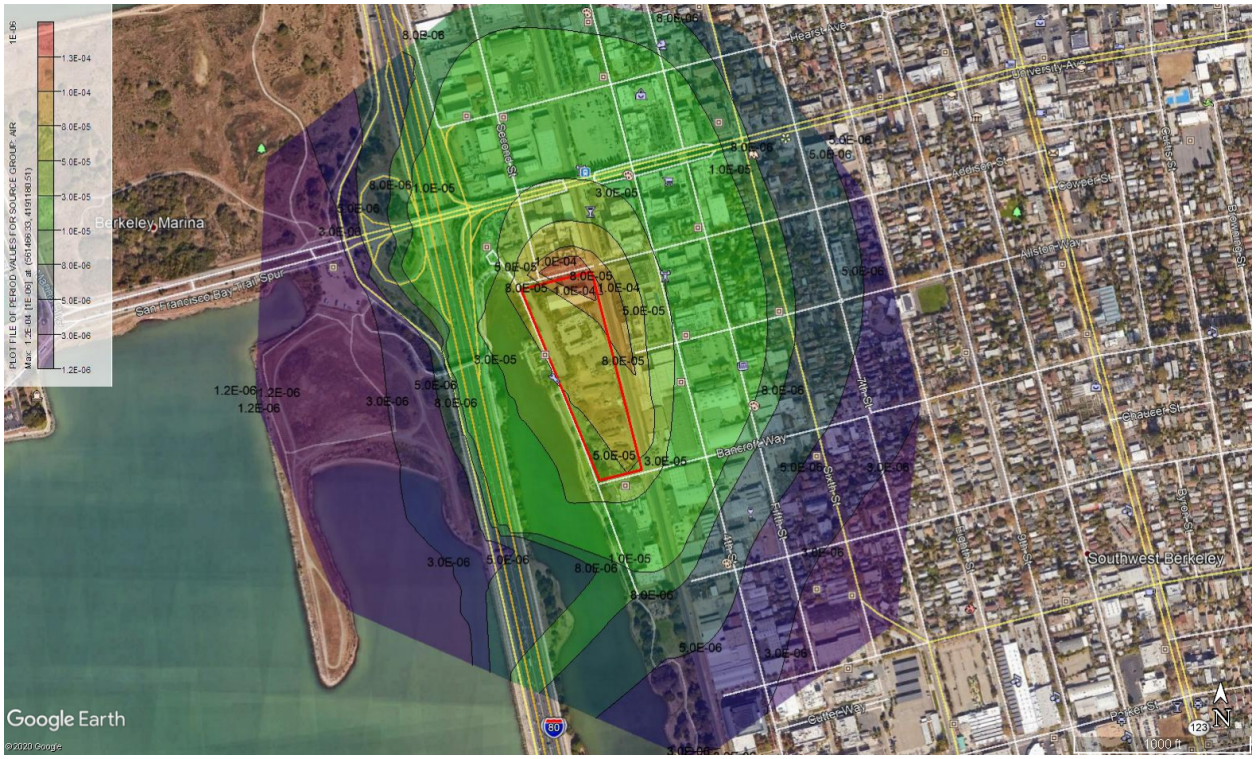
Project Boundary

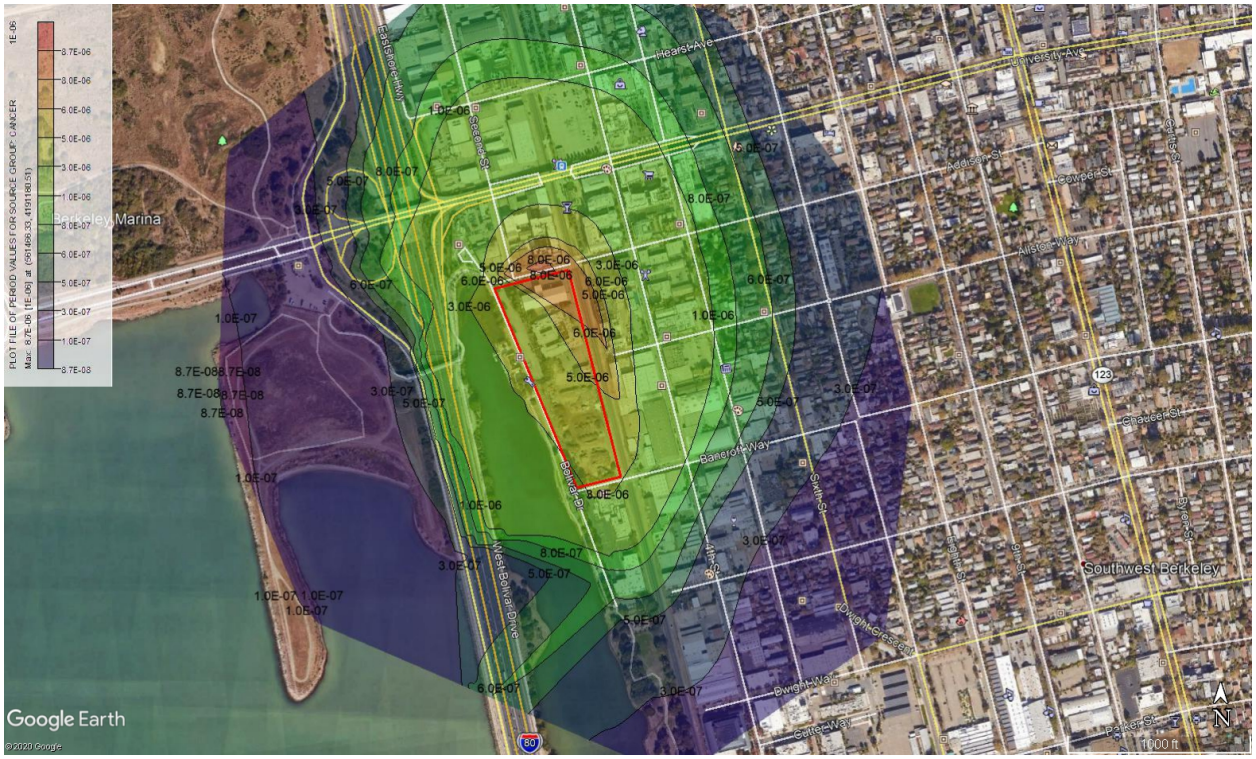
Sensitive Receptors

Cancer Risk with Tier 2 Construction Equipment



Chronic Inhalation Hazard Index with Tier 2 Construction Equipment

Cancer Risk with Tier 4 Construction Equipment



Chronic Inhalation Hazard Index with Tier 4 Construction Equipment

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APPENDIX C

NOISE MODEL DATA

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TABLE Existing Without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – east of Bolivar Drive
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 560 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 48.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – east of Second Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1590 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bolivar Drive – South of Addison Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 490 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 47.63

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way - east of Bolivar Drive
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 460 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 47.35

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 2nd Street – north of Addison Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1510 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Eastbound I-80 off-ramp - west of 2nd Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 230 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 44.34

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: University Avenue – west of 6th Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27240 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	61.1	123.5	261.9

TABLE Existing Without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way - west of 4th Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 790 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 49.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 2nd Street – north of Eastbound I-80 off-ramp
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1360 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Hearst Avenue – west of 2nd Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2820 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	58.0

TABLE Existing Without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – west of 4th Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2060 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 53.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 4th Street – north of Addison Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3250 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.84

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	63.6

TABLE Existing Without Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way – east of 4th Street
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1490 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 52.46

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing Without Project-14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 6th Street – south of Bancroft Way
NOTES: 600 Addison - Existing Without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11720 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	69.4	149.1

TABLE Existing With Project -01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – east of Bolivar Drive
NOTES: 600 Addison - Existing With Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1130 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 51.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project -02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – east of Second Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.04

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	56.3

TABLE Existing With Project -03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bolivar Drive - South of Addison Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1060 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.98

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project -04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way – east of Bolivar Drive
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 1030 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 50.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project -05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 2nd Street – north of Addison Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3190 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	62.9

TABLE Existing With Project -06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Eastbound I-80 off-ramp – west of 2nd Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 470 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 47.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

TABLE Existing With Project -07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: University Avenue – west of 6th Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29390 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	63.8	129.6	275.4

TABLE Existing With Project -08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way – west of 4th Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2400 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	52.1

TABLE Existing With Project -09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 2nd Street – north of Eastbound I-80 off-ramp
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2310 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.36

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	50.8

TABLE Existing With Project -10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Hearst Avenue – west of 2nd Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3300 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	64.3

TABLE Existing With Project -11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Addison Street – west of 4th Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3360 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 55.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	65.1

TABLE Existing With Project -12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 4th Street – north of Addison Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4470 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.23

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	78.6

TABLE Existing With Project -13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: Bancroft Way – east of 4th Street
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2650 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 54.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	55.6

TABLE Existing With Project -14
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 05/19/2020
ROADWAY SEGMENT: 6th Street – south of Bancroft Way
NOTES: 600 Addison - Existing With Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12480 SPEED (MPH): 25 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	72.4	155.5