GE SITE REMEDIATION AND REDEVELOPMENT PROJECT (PLN19-076/ER18-013) DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2018122043

December 2019

BASELINE ENVIRONMENTAL CONSULTING

CITY OF OAKLAND

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COMBINED NOTICE OF RELEASE AND AVAILABILITY OF THE DRAFT ENVIRONMENTAL IMPACT REPORT AND NOTICE OF PUBLIC HEARINGS ON THE GE SITE REMEDIATION AND REDEVELOPMENT PROJECT

PROJECT TITLE:	**GE Site Remediation and Redevelopment Project International Boulevard**
CASE NO.	**PLN19-076/ER18-013**
PROJECT SPONSOR:	**Bridge Development Partners**
PROJECT LOCATION:	**5441 International Blvd. (Assessor's Parcel Number 041-3848-001-00)**

DESCRIPTION OF PROJECT:

Bridge Development Partners has proposed to demolish eight existing contaminated buildings, remediate the site, and construct a warehouse on the site previously owned by General Electric. The site is located within the historic 57th Avenue Industrial District Area of Primary Importance (API), and the proposed project includes two contributors to the District: Building #1, which is a primary anchor to the District and has an OCHS rating of A1+, and Building #2, which has a rating of Dc1+. Buildings #1 and #2 on the site, which are among the buildings proposed for demolition, are considered historic resources under CEQA. As part of the proposed project, the front "bulkhead" portion of Building #1 (i.e., the façade that contains early-20th century Classical Revival-inspire industrial architecture and a portion of the sides of the building) would be preserved, treated or encapsulated to contain any contaminated materials, and incorporated into the design of the new warehouse. A variant to the project that requires all project-related truck trips to access San Leandro Street rather than International Boulevard has also been proposed.

The site is located on the southern side of International Boulevard between 54th and 57th Avenues. The General Plan land use classification for the site is General Industrial for the majority of the site and Neighborhood Center Mixed Use for the 100 foot deep portion fronting International Boulevard. The zoning designation for the project site is IG/S-19 (General Industrial Zone/Health & Safety Combining Zone) and CN-3 (Neighborhood Commercial Zone-3). Required discretionary permits for the project include design review including demolition findings.

The project site consists of approximately 24 acres formerly used as a manufacturing facility for General Electric. The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), in coordination with the California Department of Toxic Substances Control (DTSC) and the United States Environmental Protection Agency (USEPA), issued Cleanup and Abatement Order No. 80-011 (CAO No. 80-011) in early December 1980 due to surface and subsurface contamination issues on the site. Hazardous materials are also within the buildings themselves. Numerous remediation activities have been ongoing since 1980.

The environmental review process is consistent with CEQA and local requirements, as further detailed below.

ENVIRONMENTAL REVIEW:

A Draft Environmental Impact Report (Draft EIR) was prepared for the project under the requirements of the California Environmental Quality Act (CEQA), pursuant to Public Resources Code Section 21000 *et. seq.* The Draft EIR analyzes potentially significant environmental impacts in the following environmental

categories: Cultural and Tribal Cultural Resources, Hazards and Hazardous Materials, Transportation and Circulation, Air Quality, Greenhouse Gas Emissions and Energy, Noise and Groundborne Vibration, Geology, Soils and Seismicity, and Hydrology and Water Quality. The Draft EIR identifies significant and unavoidable environmental impacts related to Historic Resources and Greenhouse Gas Emissions. Copies of the Draft EIR are available for review or distribution to interested parties at no charge at the Department of Planning and Building, Bureau of Planning, 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612, Monday through Friday, 8:00 a.m. to 4:00 p.m. The Draft EIR may also be reviewed at the following website:

https://www.oaklandca.gov/documents/current-environmental-review-documents-2011-2019

PUBLIC HEARINGS: The Landmarks Preservation Advisory Board will conduct a public meeting on the Draft EIR for the project on **January 13, 2020**, at 6 p.m. in Council Chambers, City Hall, 1 Frank H. Ogawa Plaza, Oakland, CA 94612.

The City Planning Commission will conduct a public hearing on the Draft EIR for the project on **January 22, 2020**, at 6 p.m. in Council Chambers, City Hall, 1 Frank H. Ogawa Plaza, Oakland, CA 94612.

The City of Oakland is hereby releasing this Draft EIR, finding it to be accurate and complete and ready for public review. Members of the public are invited to comment on the EIR and the project. There is no fee for commenting, and all comments received will be considered by the City prior to finalizing the EIR and making a decision on the project. Comments on the Draft EIR should focus on the sufficiency of the EIR in discussing possible impacts on the physical environment, ways in which potential adverse effects might be minimized, and alternatives to the project in light of the EIR's purpose to provide useful and accurate information about such factors. Comments may be made at the public hearing described above or in writing.

Please address all written comments to Peterson Vollmann, Planner IV, City of Oakland, Department of Planning and Building, Bureau of Planning, 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612; (510) 238-6167(phone); (510) 238-4730(fax) or by e-mail at pvollmann@oaklandca.gov. Comments should be received no later than 4:00 p.m. on February 3, 2020. Please reference case number PLN19-07/ER18-013 in all correspondence. If you challenge the environmental document or project in court, you may be limited to raising only those issues raised at the Planning Commission public hearing described above, or in written correspondence received by the Bureau of Planning on or prior to 4:00 p.m. on February 3, 2020. After all comments are received, a Final EIR will be prepared and the Planning Commission will consider certification of the Final EIR and render a decision/make a recommendation on the project at a later meeting date to be scheduled. For further information, please contact Peterson Vollmann, Planner IV at (510) 238-6167 or at pvollmann@oaklandca.gov.

December 20, 2019
File Number: PLN19-076/ER18-013

ED MANASSE
Planning and Building Department
Environmental Review Officer

GE SITE REMEDIATION AND REDEVELOPMENT PROJECT (PLN19-076/ER18-013)

DRAFT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2018122043

Prepared for:

City of Oakland

Planning and Building Department, Bureau of Planning

250 Frank H. Ogawa Plaza, Suite 2114

Oakland, CA 94612

Prepared by:

Baseline Environmental Consulting

5900 Hollis Street, Suite D

Emeryville, CA 94608

December 2019

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APPENDICES (*All appendices are provided on a CD on the back cover of this document)*

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GLOSSARY

AC	Alameda-Contra Costa
ACDEH	Alameda County Department of Environmental Health
ACM	Asbestos-containing materials
AMP	Perimeter Air Monitoring Plan
APE	Area of Potential Effects
API	Area of Primary Importance
APN	Assessor Parcel Number
ASI	Area of Secondary Importance
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Baseline	Baseline Environmental Consulting
BMPs	Best Management Practices
Cal/OSHA	California Occupational Safety and Health Administration
CAO	Cleanup and Abatement Order
CARB	California Air Resource Board
CCR	California Code of Regulations
CEDA	City of Oakland Community and Economic Development Agency
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Oakland
CMU	Concrete masonry unit
CRHR	California Register of Historical Resources
CULT	Cultural Resources
CUPA	Certified Unified Program Agency
CVOCs	Chlorinated volatile organic compounds
Declaration	Declaration of Public Nuisance - Substandard
DHS	California Department of Health Services
DIR	California Department of Industrial Relations

DOSH	Division of Occupational Safety and Health
DOT	U.S. Department of Transportation
DPR 523	California Department of Parks and Recreation 523 series forms
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
GE	General Electric Company
GETS	Groundwater Extraction and Treatment System
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HAZ	Hazards and Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
HMPB	Hazardous Materials Business Plan
HPE	Historic Preservation Element
I-880	Interstate 880
LPAB	Landmarks Preservation Advisory Board
LSA	LSA Associates, Inc.
LTS	Less-Than-Significant impact
MLD	Most Likely Descendent
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966, as amended
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OCHS	Oakland Cultural Heritage Survey
OHA	Oakland Heritage Alliance
OHP	California Office of Historic Preservation

OSHA	U.S. Department of Labor, Occupational Safety, and Health Administration
OVM	Organic vapor meter
PCBs	Polychlorinated biphenyls
PDHP	Potential Designated Historic Properties
PM	Particulate matter
ppm	Parts per million
PRC	California Public Resources Code
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
RWQCB	California Regional Water Quality Control Board, San Francisco Bay Region
S	Significant impact
SCA	Standard Conditions of Approval
Section 106	Section 106 of the National Historic Preservation Act of 1966, as amended
SHPO	State Historic Preservation Officer
Status Code	California Historical Resource Status Code
SVOC	Semi- volatile organic compounds
SU	Significant and Unavoidable impact
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TCB	Trichlorobenzene
TIRG	City of Oakland Transportation Impact Review Guidelines
TPH	Total petroleum hydrocarbons compounds
TSCA	Toxic Substances Control Act
UPRR	Union Pacific Railroad
VIMS	Vapor Intrusion Management System
VOC	Volatile organic compounds
WCCM	Waste Characterization, Minimization, and Management Plan
WRRP	Waste Reduction and Recycling Plan

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1.0 INTRODUCTION

1.1 PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) analyzes the potential environmental impacts of the General Electric (GE) Site Remediation and Redevelopment Project at 5441 International Boulevard in Oakland, California (proposed project, Case Numbers PLN19-076/ER18 013). The proposed project is the demolition of contaminated buildings, site remediation and construction of a warehouse on the site previously owned by GE. Bridge Development Partners is the project applicant. The City of Oakland is the Lead Agency for the environmental review of the proposed project.

This EIR is designed to inform the City of Oakland decision-makers, responsible agencies and the general public of the proposed project and the potential physical impacts of project approval. This EIR also examines alternatives to the proposed project, and applies City of Oakland standard conditions of approval and mitigation measures to reduce or avoid potentially significant physical impacts.

1.2 PROPOSED PROJECT

The GE site consists of approximately 24 acres on International Boulevard (State Route (SR) 185), between 54th and 57th Avenues, and is located east of San Leandro Street and the Bay Area Rapid Transit (BART) tracks in the Melrose neighborhood of Oakland, CA. As of October 2019, a bus rapid transit line (BRT) is being constructed on International Boulevard with stops within .01 mile of the project site. The BRT line is expected to be in operation in early 2020. The eight existing buildings on the site are vacant and were formerly used for manufacturing, although a portion of Building #1 fronting International Boulevard contained accessory office uses.

Nearly all of the site has a General Plan designation of General Industry and Transportation and a zoning designation of General Industrial (IG), which allows manufacturing and distribution uses. The northwestern portion of the site has a zoning designation of IG/S-19 General Industrial/Health and Safety Protection Overlay due to the residential uses adjacent to the site boundary. An area of the site within approximately 100 feet from International Boulevard is within the Neighborhood Center Mixed Use General Plan designation and is zoned CN-3, Neighborhood Center Commercial Zone the intent of which is to create, preserve and enhance mixed-use neighborhood commercial centers.

The project site is included in the list of Hazardous Waste and Substances sites in the Department of Toxic Substances Control (DTSC) EnviroStor database, one of the lists meeting the “Cortese List” requirements. The buildings and site contain hazardous chemicals in the soil and groundwater (including PCBs) and have been undergoing remediation and monitoring

under the oversight of DTSC and the United States Environmental Protection Agency (USEPA). In 1993 a deed restriction was imposed on the property by DTSC and only commercial or industrial uses are allowed and all other types of uses are prohibited.

The Oakland Cultural Heritage Survey (OCHS) assigned a property rating of "A1+" to Building #1, also listed on the California Register of Historical Resources on the site and "Dc1+" to Building #2, indicating that Building #1 is of "Highest Importance" and that both Building #1 and Building #2 are contributing elements to the 57th Avenue Industrial District Area of Primary Importance (API), and are therefore CEQA historic resources.

The remediation and redevelopment project would include demolition of the eight existing structures, foundations and associated equipment, including Building #2 and the majority (approximately 94 percent) of Building #1. The front "bulkhead" portion (i.e., the façade that contains early-20th century utilitarian Classical Revival-inspire industrial architecture and a portion of the sides of the building) would be preserved, treated or encapsulated to contain any contaminated materials, and incorporated into the design of the new building. The site would be sufficiently remediated to permit its reuse. The demolition, abatement, remediation and ongoing monitoring activities would be conducted with regulatory agency oversight by the USEPA and DTSC.

After demolition and remediation, an approximately 534,208-square-foot industrial building would be constructed, with 524,208 square feet of warehouse space, 5,000 square feet of accessory office uses, and 5,000 square feet of accessory mezzanine office. There would be 93,522 square feet of landscaping provided. The warehouse would have 85 dock doors and 219 parking stalls would be provided on the site. Building construction would include soil vapor barriers, clean utility corridors and other protections for construction workers and employees of the new facility and will be overseen by the USEPA and DTSC. New connections would be made to existing utility systems.

For the proposed project, automobile and heavy truck access to and from the site would occur on International Boulevard via new access points. As part of the project, the signal and striping at the intersection with 55th Avenue would be modified to allow for left in and left out vehicle access movements. A variant to the project, referred to as the San Leandro Street variant or access variant, is also being considered in this EIR. The access variant would include the same remediation and warehouse development as the project, but would expand the project site to include leased Union Pacific right-of-way along the southwestern site boundary sufficient to allow all project-related truck traffic to access the site to and from San Leandro Street via 54th Avenue. All project-related automobile and light trucks would continue to use the International Boulevard access as described above. Please see Chapter 3.0, Project Description, for a full description of the project and access variant.

1.3 EIR SCOPE

The City of Oakland circulated a Notice of Preparation (NOP), notifying responsible agencies and interested parties that an EIR would be prepared for the proposed project and indicating the environmental topics anticipated to be addressed in this EIR. The NOP was published on December 21, 2018 (SCH# 2018122043) and the public comment period lasted from December 21, 2018 to January 22, 2019. The NOP was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the project. A public scoping meeting was held on January 14, 2019 before the Landmarks Preservation Advisory Board (LPAB) and another public scoping meeting was held on January 16, 2019 before the Oakland Planning Commission. The NOP, a summary of comments received at the scoping meetings and copies of each comment letter received are provided in Appendix A. Written comments received by the City and verbal comments received at the scoping meetings were taken into account during the preparation of this EIR.

1.4 REPORT ORGANIZATION

This EIR is organized into the following chapters:

Chapter 1.0 – Introduction: Discusses the overall EIR purpose; provides a summary of the proposed project; describes the EIR scope; and summarizes the organization of the EIR.

Chapter 2.0 – Summary: Provides a summary of the impacts that would result from implementation of the proposed project, and describes the City's Standard Conditions of Approval incorporated into the project and mitigation measures recommended to reduce or avoid significant impacts. A summary discussion of alternatives to the proposed project is also provided.

Chapter 3.0 – Project Description: Provides a description of the project site, site characteristics and conditions, proposed project objectives, required approval process, and details of the project and access variant.

Chapter 4.0 – Setting, Impacts, Standard Conditions of Approval, and Mitigation Measures: Describes the following for each environmental topic: existing conditions (setting); Standard Conditions of Approval (if applicable); significance criteria; potential environmental impacts and their level of significance; and identified mitigation measures when necessary to mitigate significant impacts. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). Cumulative impacts are also discussed in each technical topic section. The significance of each impact is identified before and after implementation of any recommended mitigation measure(s).

Chapter 5.0 – Alternatives: Provides an evaluation of four alternatives to the proposed project, the No Project alternative, the Approved Remedy alternative, the No Reuse alternative, and the Preservation and Reuse alternative.

Chapter 6.0 – Other CEQA Considerations: Provides additional specifically-required analyses of the proposed project's growth-inducing effects, significant unavoidable environmental impacts, significant irreversible changes, and effects found not to be significant,

Chapter 7.0 – Report Preparation: Identifies preparers of the EIR and references used.

Appendices: The appendices contain the NOP, written comments received on the NOP and a summary of comments from the scoping meetings. In addition, the appendices contain the Declaration of Public Nuisance issued by the City of Oakland, site deed restrictions, and technical reports prepared for the project.

All supporting technical documents, the reference documents and full sets of project plans are available for public review at the City of Oakland, Department of Planning and Building, Case File Number ER18-013.

This EIR is available for public review for the period identified in the Notice of Availability (NOA) attached to the front of this document. During this timeframe, written comments on the EIR may be submitted to the City of Oakland, Planning and Building Department, Bureau of Planning at the address indicated on the NOA. Responses to all comments received on the environmental analysis in this EIR during the specified review period will be included in the Responses to Comments/Final EIR.

2.0 SUMMARY

2.1 PROJECT UNDER REVIEW

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) analyzes the potential environmental impacts of the General Electric (GE) Site Remediation and Redevelopment Project at 5441 International Boulevard in Oakland, California (proposed project, Case Numbers PLN19-076/ER18 013). The proposed project is the demolition of contaminated buildings, site remediation and construction of a warehouse on the site previously owned by GE. Bridge Development Partners is the project applicant. A variant to the project that requires all project-related truck trips to access San Leandro Street rather than International Boulevard is also analyzed in this EIR. Buildings #1 and #2 on the site, which are among the buildings proposed for demolition, are considered historic resources under CEQA and contribute to the 57th Avenue Industrial District Area of Primary Importance (API). The City of Oakland is the Lead Agency for this review and cannot issue the requested demolition permits without completion of a CEQA review process and a Regular Design Review for demolition of a historic resource.

GE's past transformer manufacturing and electrical equipment maintenance and repair operations at the project site resulted in releases of hazardous materials including PCBs, petroleum hydrocarbons, CVOCs and metals that have impacted the surface, subsurface and groundwater of the project site. Structures on the project site also contain hazardous building materials including asbestos containing materials, paints containing heavy metals and PCBs, and chemically treated wood. The remediation and redevelopment project would include demolition of the eight existing structures, foundations and associated equipment, including Building #2 and the majority of Building #1. The front "bulkhead" portion (i.e., the façade that contains early-20th century utilitarian Classical Revival-inspired industrial architecture and a portion of the sides of the building) would be preserved, treated or encapsulated to contain any contaminated materials, and incorporated into the design of the new warehouse building. The site and bulkhead portion of Building #1 would be sufficiently remediated to permit its reuse for industrial/warehouse uses. The demolition, abatement, remediation and ongoing monitoring activities would be conducted with regulatory agency oversight by the United States Environmental Protection Agency (USEPA) and the State Department of Toxic Substances Control (DTSC). The proposed project is described in greater detail in Chapter 3.0, Project Description.

2.2 SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter 4.0, Setting, Impacts, Standard Conditions of Approval and Mitigation Measures. In addition to a brief description of the proposed actions and consequences of the project, CEQA Guidelines Section 15123 requires a summary to include a discussion of: 1) areas of controversy; 2) issues to be resolved;

3) alternatives that would reduce or avoid significant effects; and 4) each significant effect with proposed mitigation measures. Each of these topics is summarized below.

A. Potential Areas of Controversy

Letters received on the Notice of Preparation (NOP, included in Appendix A) and verbal comments offered by those in attendance at the CEQA scoping sessions, held on January 14, 2019 and January 16, 2019, raised a number of topics that commenters wished to see addressed in the EIR including:

- Project compliance with federal, State and local statutes and regulations related to hazardous waste and hazardous substances during demolition, remediation, construction and operation of the project.
- Detailed information on contaminated soil management; excavation and disposal of contaminated soil; air monitoring for total dust and PCBs during demolition and remediation activities; installation of a vapor intrusion mitigation system; stormwater controls, and implementation of an operation and maintenance plan after redevelopment.
- Level of contamination of the historic buildings.
- Review and analysis of project alternatives.

B. Issues to be Resolved

Section 15123 of the CEQA Guidelines requires the summary section of an EIR include "issues to be resolved including choices among alternatives and whether and how to mitigate significant effects." The following issues fit this requirement:

- Whether to include all modifications proposed in this EIR as mitigation measures and approve the proposed project;
- Whether to include all modifications proposed in this EIR as mitigation measures and approve the San Leandro Street access variant;
- Whether to approve an alternative to the proposed project or access variant; and
- Whether to issue the requested demolition permits for the project.

C. Significant Impacts

Under CEQA Sections 21060.5 and 21068, a significant impact on the environment is defined as a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Based on a review of the proposed project and access variant and the City of Oakland’s CEQA Thresholds of Significance Guidelines and implementation of the City’s Standard Conditions of Approval (SCAs), the proposed project or variant would not result in significant impacts related

to the following environmental topics: Aesthetics, Shadow, Wind, Agricultural and Forestry Resources; Biological Resources; Land Use and Planning; Mineral Resources; Population and Housing; Public Services; Recreation; and Utilities. These topics are discussed in Chapter 6.0, Other CEQA Considerations.

Potential impacts related to the following topics were analyzed in separate sections of the EIR, and with implementation of the City's SCAs and recommended mitigation measures, all impacts were determined to be less than significant: Hazards and Hazardous Materials; Transportation and Circulation; Air Quality; Noise and Groundborne Vibration; Geology, Soils and Seismicity; and Hydrology and Water Quality.

D. Significant Unavoidable Environmental Effects

The following significant unavoidable impacts have been identified for the project:

- Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA.
- Demolition of buildings on the project site would adversely affect two historical buildings that qualify as historical resources under CEQA and would contribute to a significant cumulative impact to historical resources in Oakland.
- Project construction and operation would generate greenhouse gas (GHG) emissions that would exceed the City's target threshold and result in a significant and unavoidable impact.
- Project operations could conflict with applicable GHG plans, policies, or regulations resulting in a significant and unavoidable impact.
- Project construction and operation would generate GHG emissions and would contribute to a significant and unavoidable cumulative impact.

E. Significant Impacts and Mitigation Measures

Table 2-1, Summary of Impacts, Standard Conditions of Approval and Mitigation Measures from the EIR, is included at the end of this chapter. Table 2-1 includes all environmental impact statements, SCAs, recommended mitigation measures, and the level of significance of the impact after SCAs and recommended mitigation measures are implemented. The proposed project would result in significant and unavoidable project-level impacts associated with historic resources and greenhouse gas emissions. The proposed project combined with cumulative development would result in significant and unavoidable cumulative impacts associated with historic resources and greenhouse gas emissions. These impacts are considered significant and unavoidable because they cannot be reduced to less-than-significant levels even with SCAs and feasible mitigation measures applied

F. Alternatives to the Proposed Project

Chapter 5.0, Alternatives includes the analysis of four alternatives to the proposed project to meet the requirements of CEQA to analyze a range of reasonable alternatives to the project that would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The four project CEQA alternatives analyzed in Chapter 4.0 include:

- The **No Project alternative**, which assumes the continuation of existing conditions within the project site. None of the buildings would be removed from the site under this alternative, and only ongoing remediation and monitoring activities required by DTSC and USEPA would continue.
- The **Approved Remedy alternative**, would be consistent with the DTSC and USEPA approved 2011 remedial action plan ("RAP")[1] risk-based clean up and would involve demolition of all the buildings on the site, and installation of an asphalt overlay around the building locations and over slabs that would remain on the site. After capping the site, it would remain vacant. While groundwater monitoring would continue, no additional remediation or reuse of the site would occur under this alternative.
- The **No Reuse alternative**, Under Variant A, all of Building #1 and Building #2 would be protected in place, but not further used or occupied. Under Variant B, only Building #1 would be protected in place and Building #2 would be demolished and the pad capped with asphalt. Under either variant, neither building would be remediated or restored. Repairs would be made so that further building deterioration would not occur, and neither building would be occupied. This alternative further assumes the demolition of all other buildings on the site, capping of the site with an asphalt pad, and no remediation or new construction for future industrial use. Only remediation and monitoring activities currently required by DTSC and EPA would continue.
- The **Preservation and Reuse alternative** includes the remediation of the site for future industrial use, as described for the proposed project, and assumes that both Building #1 and Building #2 could be remediated and rehabilitated for industrial use in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, requirements of the City of Oakland, and USEPA and DTSC requirements, assumed to be similar to the requirements in the RDIP Addendum to allow reuse of the bulkhead portion of Building #1.[2] All other structures on the site would be demolished. After remediation, the remainder of the site would be developed with buildings or a building to support industrial uses.

[1] Geosyntec Consultants, 2011. Remedial Action Plan, General Electric Site, 5441 International Boulevard, Oakland CA, June.

[2] EKI Environment and Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California. August 26, revised October 4.

2.3 SUMMARY TABLE

Information in Table 2-1, Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR, has been organized to correspond with environmental issues discussed in Chapter 4.0. The table is arranged in four columns: (1) environmental impacts; (2) level of significance without mitigation; (3) Standard Conditions of Approval/Mitigation Measures; and (4) level of significance with mitigation. Levels of significance are categorized as follows: LTS = Less Than Significant; S = Significant; and SU = Significant and Unavoidable. A series of mitigation measures are noted where more than one mitigation measure is required to achieve a less-than-significant impact. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific discussions in Chapter 4.0.

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
4.1 Cultural Resources and Tribal Cultural Resources			
Impact CULT-1: Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA.	S	Mitigation Measure CULT-1a: Historical Context Report. Prior to approval of demolition and construction-related permits, the project applicant shall retain a qualified cultural resources consultant to prepare a historical context report and photo-documentation of the historic buildings on the project site and the 57th Avenue Industrial District API. The report shall include a description of the resources' historical significance within the context of Oakland's historical industrial development during the early-20th century as well their historical architectural significance within the context of utilitarian, unreinforced masonry buildings in Oakland. The report shall also include a discussion of the project site's historical association with the former KGO radio station. Oral histories of those who worked at the GE plant, or those who otherwise have knowledge of the project site's history, shall be sought out and, if located, findings incorporated into the historical context report, as appropriate. Recordings of the oral histories that result from this mitigation shall also be made available to the public by the City or a local historical archive as a digital file (e.g., mp3). Photo-documentation of the project site buildings and the API shall be included in the report to provide additional descriptive data and a permanent visual record of the resources. The photo-documentation shall be done according to Historic American Building Survey/Historic American Engineering Record (HABS/HAER) guidelines. Based on the curation requirements of the receiving institution, either hard copies and/or electronic copies of the report and photo-docu¬mentation shall be offered to the Oakland Heritage Alliance, the Oakland Cultural Heritage Survey, the Oakland Public Library, the Environmental Design Library, Archives, and Visual Resource Center at the University of California, Berkeley, and the Northwest information Center. The applicant shall also be responsible for ensuring that the report and photo-documentation are available to the general public via the internet.	SU

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Mitigation Measure CULT-1b: Contribution to Façade Improvement Program. Prior to approval of demolition permits, the project applicant shall contribute to the City's Façade Improvement Program. Funds collected should be reserved for buildings within the 57th Avenue Industrial District API for a period of two years. The use of Façade Improvement Program funds for use in the API is appropriate given the location, visibility and contribution of Building #1 and Building #2 within the 57th Avenue Industrial District API. By directing that the funds be used in the 57th Avenue Industrial District API, the mitigation will have a direct effect on the remaining historic resources in the District, including the remaining portion of Building #1, as well as the District itself. The mitigation measure is devised to reflect this and provide more specificity regarding the process for use of the funds. In accordance with the City's Façade Improvement Program, the amount of the contribution required to be paid by the project applicant under this mitigation measure (based upon the calculation for obtaining façade improvement grants) shall be based on the following: • $10,000 for the first 25 feet of two façades of each building and $2,500 per 10 additional linear feet of the same two façades beyond the first 25 feet. • There shall be a 20 percent increase added for each building designated as a Historical Resource under CEQA. • The total for each building shall be multiplied by 2 for being located within an API. For purposes of this mitigation, the length of the main, International Boulevard-facing façade of Building #1 is 135 feet minus 129 feet, which is the length to be retained, for a total of 6 feet. The length of the secondary, southeast-facing façade of Building #1 is 585 feet minus 33 feet, which is the portion to be retained, for a total of 552 feet. As 25 feet from two facades will not be removed by the project, the $10,000 would not apply to the front	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		façade of Building #1; however, it would apply to the removal of 552 feet of the southeast-facing façade. For Building #2, the length of the main, International Boulevard-facing façade is 110 feet, and the length of the secondary, southeast-facing façade is 450 feet. The following calculation results in a total contribution of $684,000. *5441 International Boulevard - Building #1:* Secondary façade: $10,000 + ($2,500 x 552 feet)/10 feet $138,000 *5441 International Boulevard - Building #2:* Main façade: $10,000 + ($2,500 x 85 feet)/10 feet $31,250 Secondary façade: $10,000 + ($2,500 x 425 feet)/10 feet $116,250 $147,000 *Building #1 total ($138,000) + Building #2 total ($147,500)* *$285,000* CEQA Historical Resources – increase by 20%: $335,000 x 1.2 $342,000 Located in an API – increase by two times $684,000 The Façade Improvement Program contribution required hereunder shall be payable upon issuance of the first demolition permit for the project. Funds collected under this mitigation shall be designated for the repair or improvement of façades within the historic 57th Avenue Industrial District API for a two-year period. After that time, all remaining funds shall be eligible for citywide Façade Improvement Program expenditures. All rehabilitation efforts or façade improvements under this Program shall be undertaken using the Secretary of the Interior's Standards for the Treatment of Historic Properties. Administration of this Program shall be overseen by OCHS staff.	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Mitigation Measure CULT-1c: Installation of a Commemorative Marker. To reduce the significant and unavoidable impact of the adverse effect on Building #1 and loss of Building #2 and the substantial adverse change in the historic significance of the 57th Avenue Industrial District API, the project applicant shall, prior to the issuance of the demolition permit for the project, install a commemorative marker or plaque on the project site. The marker or plaque shall be made of high quality, durable, all-weather materials, and describe the history of the project site and the 57th Avenue Industrial District; examples may be taken from the Bay Trail Series concerning historic industrial buildings. The marker or plaque shall be installed on the project site to allow for high public visibility from International Boulevard. The content, materials, and appearance of the commemorative marker or plaque shall be developed by a consultant experienced in urban architectural interpretive displays, and shall be done in consultation with OCHS staff. At the time of installation, the project applicant shall provide the City with a plan that details ongoing review and maintenance of the marker or plaque. Additionally, for use in case of damage to the first marker or plaque, the applicant shall have prepared and stored a spare to be produced at the same time the first marker is manufactured.	
		Mitigation Measure CULT-1d: Preparation of a Historic Property Treatment Plan. The project applicant shall prepare a Historic Property Treatment Plan for the retained portion of Building #1, in coordination with the City and OCHS staff and prior to the issuance of the demolition permit for the project. At a minimum, the Historic Property Treatment Plan shall identify the portion of the building to be preserved, plans for maintaining and protecting that portion of the building during demolition and construction, and rehabilitation plans. The plan shall be prepared with oversight by a Preservation Architect who meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for Architectural History and Historic Architecture (48 CFR 44738-9).	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		The City shall be responsible for ensuring that Mitigation Measures CULT-1a, CULT-1b, CULT-1c and CULT-1d are completed as a condition of the demolition permit. The applicant shall be responsible for funding the mitigation measures identified herein. Implementation of Mitigation Measures CULT-1a, CULT-1b, CULT-1c, and CULT-1d will mitigate the cultural resources impact to a degree, but not to a level that is less than significant and the impact would remain significant and unavoidable.	
Impact CULT-2: Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA and would contribute to a significant cumulative impact to historical resources in Oakland.	S	Mitigation Measure CULT-2: Implementation of Mitigation Measures CULT-1a, CULT-1b, and CULT-1d will mitigate this cumulative impact to a degree, but not to a level that is less than significant and this cumulative impact would remain significant and unavoidable.	SU
		SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33) Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented. In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense. In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant. When Required: During construction	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-CULT-2: Archaeologically Sensitive Areas – Pre-Construction Measures (#34) Requirement: The project applicant shall implement either Provision A (Intensive Pre- Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources. Provision A: Intensive Pre-Construction Study. Prior to approval of construction-related permits, the project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include: a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources. b. A report disseminating the results of this research. c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources. If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction. Provision B: Construction ALERT Sheet. Prior to and during ground disturbing activities, the project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor, any project subcontractor firms (including demolition, excavation, grading, foundation, and pile driving), and utility firms involved in soil- disturbing activities within the project site. The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster,	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site. When Required: Prior to approval of construction-related permit; during construction Initial Approval: Bureau of Building; Bureau of Planning Monitoring/Inspection: Bureau of Building	
		SCA-CULT-3: Human Remains – Discovery During Construction (#35) Requirement: Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event 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 California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-CULT-4: Property Relocation (#36) Requirement: Pursuant to Policy 3.7 of the Historic Preservation Element of the Oakland General Plan, the project applicant shall make a good faith effort to relocate the historic resource to a site acceptable to the City. A good faith effort includes, at a minimum, all of the following: a. Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3' x 6' size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations; b. Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the City; c. Maintaining the signs and advertising in place for a minimum of 90 days; and d. Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning (including Oakland Cultural Resource Survey) Monitoring/Inspection: N/A	
4.2 Hazards and Hazardous Materials			
Impact HAZ-1: Construction of the proposed project or San Leandro Street access variant could result in the accidental release of hazardous materials.	S	Mitigation Measure HAZ-1: Following the completion of grading activities, the entire site shall be temporarily capped as soon as possible using recycled crushed concrete sourced from the project site that has been tested and determined to be available for this use and imported aggregate base material, as needed, to ensure that large areas of exposed soil are not	LTS

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		present on the project site for the remainder of project construction. If recycled crushed concrete that is impacted by PCBs is used for construction of the temporary cap, dust monitoring shall be performed until the permanent cap is installed at the project site. In the event that a complaint is made by the public regarding visible dust emissions from the project site after working hours, real time dust monitoring equipment shall operate 24 hours per day and 7 days a week to monitor and log dust levels after normal working hours to evaluate whether excessive dust emissions occur after working hours. The real time air monitoring equipment shall be equipped with a remote telemetry alarm system that can notify the applicant's environmental consultant and contractor at any time if air monitoring trigger levels for dust are being exceeded after normal working hours. In the event that air monitoring trigger levels are exceeded after normal working hours or if a complaint is made by the public regarding visible dust emissions from the project site after working hours, contractor personnel shall arrive at the project site within one hour of the trigger level exceedance or public complaint, and shall implement dust control measures. Air monitoring outside of working hours can be discontinued, with approval from DTSC and the City, following demonstration that dust emissions after working hours are being adequately controlled. If a public complaint is made to a site representative regarding visible dust from project site demolition and remediation activities being deposited on surfaces of neighboring properties, DTSC and USEPA shall be notified. The applicant shall be responsible for testing and cleanup of dust on neighboring properties if necessary and as directed by DTSC or USEPA.	
		SCA-HAZ-1: Hazardous Materials Related to Construction (#43) Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction; b. Avoid overtopping construction equipment fuel gas tanks; c. During routine maintenance of construction equipment, properly contain and remove grease and oils; d. Properly dispose of discarded containers of fuels and other chemicals; e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44) *a. Hazardous Building Materials Assessment* Requirement: The project applicant shall submit a comprehensive assessment report to the Bureau of Building, signed by a qualified	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACMs), lead-based paint, polychlorinated biphenyls (PCBs), and any other building materials or stored materials classified as hazardous materials by State or federal law. If lead-based paint, ACMs, PCBs, or any other building materials or stored materials classified as hazardous materials are present, the project applicant shall submit specifications prepared and signed by a qualified environmental professional, for the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency. When Required: Prior to approval of demolition, grading, or building permits Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
		b. Environmental Site Assessment Required Requirement: The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency. When Required: Prior to approval of construction-related permit Initial Approval: Applicable regulatory agency with jurisdiction Monitoring/Inspection: Applicable regulatory agency with jurisdiction	
		c. Health and Safety Plan Required Requirement: The project applicant shall submit a Health and Safety Plan for	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		the review and approval by the City in order to protect project construction workers from risks associated with hazardous materials. The project applicant shall implement the approved Plan. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
		d. Best Management Practices (BMPs) Required for Contaminated Sites Requirement: The project applicant shall ensure that BMPs are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following: i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements. ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-HAZ-3: Hazardous Materials Business Plan (#45) Requirement: The project applicant shall submit a Hazardous Materials Business Plan for review and approval by the City, and shall implement the approved Plan. The approved Plan shall be kept on file with the City and the	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		project applicant shall update the Plan as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. Hazardous materials shall be handled in accordance with all applicable local, state, and federal requirements. The Hazardous Materials Business Plan shall include the following: a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids. b. The location of such hazardous materials. c. An emergency response plan including employee training information. d. A plan that describes the manner in which these materials are handled, transported, and disposed. When Required: Prior to building permit final Initial Approval: Oakland Fire Department Monitoring/Inspection: Oakland Fire Department	
4.3 Transportation and Circulation			
There are no significant Transportation and Circulation impacts.	LTS	SCA-TRA-1: Construction Management Plan (#13) Requirement. Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department, Department of Transportation, and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste	LTS

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing plan, proposed truck routes, traffic control plan, complaint management plan, construction worker parking plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project. When Required: Prior to approval of construction-related permit Initial Approval: Department of Transportation Monitoring/Inspection: Department of Transportation	
		SCA-TRA-2: Construction Activity in the Public Right-of-Way (#76) *a. Obstruction Permit Required* Requirement: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets, sidewalks, bicycle facilities, and bus stops. When Required: Prior to approval of construction-related permit Initial Approval: Department of Transportation Monitoring/Inspection: Department of Transportation *b. Traffic Control Plan Required* Requirement: In the event of obstructions to vehicle or bicycle travel lanes, bus stops, or sidewalks, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		for auto, transit, bicycle, and pedestrian accommodations (or detours, if accommodations are not feasible), including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The Traffic Control Plan shall be in conformance with the City's Supplemental Design Guidance for Accommodating Pedestrians, Bicyclists, and Bus Facilities in Construction Zones. The project applicant shall implement the approved Plan during construction. When Required: Prior to demolition permit Initial Approval: Department of Transportation Monitoring/Inspection: Department of Transportation *c. Repair of City Streets* Requirement: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks, caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately. When Required: Prior to building permit final Initial Approval: N/A Monitoring/Inspection: Department of Transportation	
		SCA-TRA-3: Bicycle Parking (#77) Requirement: The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-TRA-4: Transportation Improvements (#78) Requirement: The project applicant shall implement the recommended on- and off-site transportation-related improvements contained within the Transportation Impact Review for the project (e.g., signal timing adjustments, restriping, signalization, traffic control devices, roadway reconfigurations, transportation demand management measures, and transit, pedestrian, and bicyclist amenities). The project applicant is responsible for funding and installing the improvements, and shall obtain all necessary permits and approvals from the City and/or other applicable regulatory agencies such as, but not limited to, Caltrans (for improvements related to Caltrans facilities) and the California Public Utilities Commission (for improvements related to railroad crossings), prior to installing the improvements. To implement this measure for intersection modifications, the project applicant shall submit Plans, Specifications, and Estimates (PS&E) to the City for review and approval. All elements shall be designed to applicable City standards in effect at the time of construction and all new or upgraded signals shall include these enhancements as required by the City. All other facilities supporting vehicle travel and alternative modes through the intersection shall be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below: a. 2070L Type Controller with cabinet accessory b. GPS communication (clock) c. Accessible pedestrian crosswalks according to Federal and State Access Board guidelines with signals (audible and tactile) d. Countdown pedestrian head module switch out e. City Standard ADA wheelchair ramps f. Video detection on existing (or new, if required) g. Mast arm poles, full activation (where applicable)	

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		h. Polara Push buttons (full activation) i. Bicycle detection (full activation) j. Pull boxes k. Signal interconnect and communication with trenching (where applicable), or through existing conduit (where applicable), 600 feet maximum l. Conduit replacement contingency m. Fiber switch n. PTZ camera (where applicable) o. Transit Signal Priority (TSP) equipment consistent with other signals along corridor p. Signal timing plans for the signals in the coordination group q. Bi-directional curb ramps (where feasible, and if project is on a street corner) r. Upgrade ramps on receiving curb (where feasible, and if project is on a street corner) When Required: Prior to building permit final or as otherwise specified Initial Approval: Bureau of Building; Department of Transportation Monitoring/Inspection: Bureau of Building	
		SCA-TRA-5: Transportation and Parking Demand Management (#79) *a. Transportation and Parking Demand Management (TDM) Plan Required* Requirement: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City. i. The goals of the TDM Plan shall be the following: • Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable. • Achieve the following project vehicle trip reductions (VTR): ○ Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR.	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		○ Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR. • Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate. • Enhance the City's transportation system, consistent with City policies and programs. ii. The TDM Plan should include the following: • Baseline existing conditions of parking and curbside regulations within the surrounding neighborhood that could affect the effectiveness of TDM strategies, including inventory of parking spaces and occupancy if applicable. • Proposed TDM strategies to achieve VTR goals (see below). i. For employers with 100 or more employees at the subject site, the TDM Plan shall also comply with the requirements of Oakland Municipal Code Chapter 10.68 Employer-Based Trip Reduction Program. ii. The following TDM strategies **must** be incorporated into a TDM Plan based on a project location or other characteristics. When required, these mandatory strategies should be identified as a credit toward a project's VTR. *(See SCA -5 Improvement, Table 5: Required by code or when… on page 4.3-14 of the Draft EIR)* iii. Other TDM strategies to consider include, but are not limited to, the following: • Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement. • Construction of and/or access to bikeways per the Bicycle Master	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Plan; construction of priority bikeways, on-site signage and bike lane striping. • Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project. • Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan, the Master Street Tree List and Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively) and any applicable streetscape plan. • Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements. • Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency). • Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes. • Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3). • Guaranteed ride home program for employees, either through 511.org	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		or through separate program. • Pre-tax commuter benefits (commuter checks) for employees. • Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants. • On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools. • Distribution of information concerning alternative transportation options. • Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties. • Parking management strategies including attendant/valet parking and shared parking spaces. • Requiring tenants to provide opportunities and the ability to work off-site. • Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week). • Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours. The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report. When Required: Prior to approval of planning application. Initial Approval: Bureau of Planning Monitoring/Inspection: N/A *b. TDM Implementation – Physical Improvements* Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/approvals from the City and install the improvements prior to the completion of the project. When Required: Prior to building permit final Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building *c. TDM Implementation – Operational Strategies* Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		When Required: Ongoing Initial Approval: Department of Transportation Monitoring/Inspection: Department of Transportation	
		SCA-TRA-6: Transportation Impact Fee (#80) Requirement: The project applicant shall comply with the requirements of the City of Oakland Transportation Impact Fee Ordinance (chapter 15.74 of the Oakland Municipal Code). When Required: Prior to issuance of building permit Initial Approval: Bureau of Building Monitoring/Inspection: N/A	
		SCA-TRA-7: Railroad Crossings (#82) Requirement: The project applicant shall submit for City review and approval a Diagnostic Review to evaluate potential impacts to at-grade railroad crossings resulting from project-related traffic. In general, the major types of impacts to consider are collisions between trains and vehicles, trains and pedestrians, and trains and bicyclists. The Diagnostic Review shall include specific traffic elements, such as roadway and rail description, accident history, traffic volumes (all modes, including pedestrian and bicyclist crossing movements), train volumes, vehicular speeds, train speeds, and existing rail and traffic control. Where the Diagnostic Review identifies potentially substantially dangerous crossing conditions at at-grade railroad crossings caused by the project, measures relative to the project's traffic contribution to the crossings shall be applied through project redesign and/or incorporation of the appropriate measures to reduce potential adverse impacts at the crossings. These measures may include, without limitation, the following: a. Installation of grade separations at crossings, i.e., physically separating roads and railroad tracks by constructing overpasses or underpasses b. Improvements to warning devices at existing highway rail crossings that	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		are impacted by project traffic c. Installation of additional warning signage d. Improvements to traffic signaling at intersections adjacent to crossings, e.g., signal preemption e. Installation of median separation to prevent vehicles from driving around railroad crossing gates f. Where sound walls, landscaping, buildings, etc. would be installed near crossings, maintaining the visibility of warning devices and approaching trains g. Prohibition of parking within 100 feet of the crossings to improve the visibility of warning devices and approaching trains h. Construction of pull-out lanes for buses and vehicles transporting hazardous materials i. Installation of vandal-resistant fencing or walls to limit the access of pedestrians onto the railroad right-of-way j. Elimination of driveways near crossings k. Increased enforcement of traffic laws at crossings l. Rail safety awareness programs to educate the public about the hazards of highway-rail grade crossings Any proposed improvements must be coordinated with California Public Utility Commission (CPUC) and affected railroads and all necessary permits/approvals obtained, including a GO 88-B Request (Authorization to Alter Highway Rail Crossings). The project applicant shall implement the approved measures during construction of the project. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-TRA-8: Plug-In Electric Vehicle (PEV) Charging Infrastructure (#83) *a. PEV-Ready Parking Spaces* Requirement: The applicant shall submit, for review and approval of the Building Official and the Zoning Manager, plans that show the location of parking spaces equipped with full electrical circuits designated for future PEV charging (i.e. "PEV-Ready) per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-Ready parking spaces. When Required: Prior to Issuance of Building Permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building *b. PEV-Capable Parking Spaces* Requirement: The applicant shall submit, for review and approval of the Building Official, plans that show the location of inaccessible conduit to supply PEV-capable parking spaces per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-capable parking spaces. When Required: Prior to Issuance of Building Permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building *c. ADA-Accessible Spaces* Requirement: The applicant shall submit, for review and approval of the Building Official, plans that show the location of future accessible EV parking spaces as required under Title 24 Chapter 11B Table 11B-228.3.2.1, and specify plans to construct all future accessible EV parking spaces with appropriate grade, vertical clearance, and accessible path of travel to allow installation of accessible EV charging station(s). When Required: Prior to Issuance of Building Permit	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
4.4 Air Quality			
Impact AIR-1: Project construction activities, including demolition and remediation, and project operation could generate criteria air pollutant emissions that could affect regional air quality which would be a significant impact.	S	Mitigation Measure AIR-1: Implement Mitigation Measures HAZ-1.	LTS
		SCA-AIR-1: Dust Controls – Construction Related (#21) Requirement: The project applicant shall implement all of the following applicable dust control measures during construction of the project: a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible. b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c. All visible mud or dirt track-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. d. Limit vehicle speeds on unpaved roads to 15 miles per hour. e. All demolition activities (if any) shall be suspended when average wind speeds exceed 20 mph. f. All trucks and equipment, including tires, shall be washed off prior to leaving the site. g. Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		h. Apply and maintain vegetative ground cover (e.g., hydroseed) or non-toxic soil stabilizers to disturbed areas of soil that will be inactive for more than one month. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.). i. Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress. j. When working at a site, install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of the site, to minimize wind-blown dust. Windbreaks must have a maximum 50 percent air porosity. k. Post a publicly visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours. l. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-AIR-2: Criteria Air Pollutant Controls - Construction Related (#22) Requirement: The project applicant shall implement all of the following applicable basic control measures for criteria air pollutants during construction of the project as applicable: a. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes (as required by the	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points. b. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations"). c. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Equipment check documentation should be kept at the construction site and be available for review by the City and the Bay Area Air Quality District as needed. d. Portable equipment shall be powered by grid electricity if available. If electricity is not available, propane or natural gas generators shall be used if feasible. Diesel engines shall only be used if grid electricity is not available and propane or natural gas generators cannot meet the electrical demand. e. Low VOC (i.e., ROG) coatings shall be used that comply with BAAQMD Regulation 8, Rule 3: Architectural Coatings. f. All equipment to be used on the construction site shall comply with the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") and upon request by the City (and the Air District if specifically requested), the project applicant shall provide written documentation that fleet requirements have been met. When Required: During construction Initial Approval: N/A	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Monitoring/Inspection: Bureau of Building	
		SCA-AIR-3: Diesel Particulate Matter Controls-Construction Related (#23) *a) Diesel Particulate Matter Reduction Measures* Requirement: The project applicant shall implement appropriate measures during construction to reduce potential health risks to sensitive receptors due to exposure to diesel particulate matter (DPM) from construction emissions. The project applicant shall choose one of the following methods: The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with current guidance from the California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment to determine the health risk to sensitive receptors exposed to DPM from project construction emissions. The HRA shall be submitted to the City (and the Air District if specifically requested) for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then DPM reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, DPM reduction measures shall be identified to reduce the health risk to acceptable levels as set forth under subsection b below. Identified DPM reduction measures shall be submitted to the City for review and approval prior to the issuance of building permits and the approved DPM reduction measures shall be implemented during construction. -or- All off-road diesel equipment shall be equipped with the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by CARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications. This shall be verified through an equipment inventory submittal and Certification Statement that the Contractor agrees to compliance and acknowledges that a significant	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		violation of this requirement shall constitute a material breach of contract. When Required: Prior to issuance of a construction related permit (i), during construction (ii) Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	
		b) Construction Emissions Minimization Plan (if required by a above) Requirement: The project applicant shall prepare a Construction Emissions Minimization Plan (Emissions Plan) for all identified DPM reduction measures (if any). The Emissions Plan shall be submitted to the City (and the Bay Area Air Quality District if specifically requested) for review and approval prior to the issuance of building permits. The Emissions Plan shall include the following: i. 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. ii. 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. When Required: Prior to issuance of a construction related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	
		SCA-AIR-4: Stationary Sources of Air Pollution (Toxic Air Contaminants) (#25) Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		choose one of the following methods: a. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City. - or - b. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City: i. Installation of non-diesel fueled generators, if feasible, or; ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26) *a. Truck Loading Docks* Requirement: The project applicant shall locate proposed truck loading docks as far from nearby sensitive receptors as feasible. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building *b. Truck Fleet Emission Standards* Requirement: The project applicant shall comply with all applicable California Air Resources Board (CARB) requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Methods to comply include, but are not limited to, new clean diesel trucks, higher-tier diesel engine trucks with added Particulate Matter (PM) filters, hybrid trucks, alternative energy trucks, or other methods that achieve the applicable CARB emission standard. Compliance with this requirement shall be verified through CARB's Verification Procedures for In-Use Strategies to Control Emissions from Diesel Engines. When Required: Prior to building permit final; ongoing Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	
		SCA-AIR-6: Asbestos in Structures (#27) Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		When Required: Prior to approval of construction-related permit Initial Approval: Applicable regulatory agency with jurisdiction Monitoring/Inspection: Applicable regulatory agency with jurisdiction	
4.5 Greenhouse Gas Emissions and Energy			
Impact GHG-1: Project construction and operation would generate GHG emissions that would exceed the City's target threshold and result in a significant and unavoidable impact.	S	Mitigation Measure GHG-1: **a. GHG Reduction Plan Required.** The project applicant shall retain a qualified air quality consultant to develop a GHG Reduction Plan for City review and shall implement the approved GHG Reduction Plan. The GHG Reduction Plan shall demonstrate compliance with at least one of the following GHG goals prior to approval of a construction-related permit: 1) Consistency with a certified Qualified Climate Action Plan (if available); or 2) GHG emissions from non-transportation sources below the 2030 GHG efficiency threshold of 0.61 MT CO2e/SP. The GHG Reduction Plan shall include, at a minimum: (a) a detailed GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, project design features, and other City requirements) and additional GHG reduction measures available to further reduce GHG emissions, and (b) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase. Such GHG reduction measures may include, but are not limited to, the following: • **Carbon-Free Energy.** Address 100 percent of the project's electricity need through carbon-free sources (e.g., renewable, and hydroelectric) and/or carbon offset projects. • **Alternative Fuels for Diesel-Powered Construction Equipment.** Use	SU

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		renewable diesel fuel for diesel-powered construction equipment that meets California's Low Carbon Fuel Standards and is certified by CARB Executive Officer. • **Outdoor Electrical Receptacles.** Include electrical receptacles on the exterior of walls of the building that are accessible for the purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil fuel-powered generators. • **Electric Forklifts and Associated Charging Stations.** Include a dedicated charging station for electric forklifts at all loading docks and truck loading areas. Other potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council. The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features, listed above; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "carbon credits") as explained below. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. If, after exhaustion of feasible physical design features and operational features specific to the project, the project's GHG emissions would still fail to meet the requirements of GHG goal 1 or GHG goal 2, the project applicant shall purchase carbon credits to further reduce GHG emissions. The	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		preference for purchasing carbon credits by location shall be applied as follows: (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of carbon credit purchases shall be based on current market value at the time purchased and shall be based on the project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits. **b. GHG Reduction Plan Implementation during Construction.** The project applicant shall implement the GHG Reduction Plan during construction of the project. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be implemented during construction. For physical GHG reduction measures to be incorporated into off-site projects, the project applicant shall obtain all necessary permits/approvals and the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval. These off-site improvements shall be installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For GHG reduction measures involving the purchase of carbon credits, evidence of the payment/purchase shall be submitted to the City for review and approval prior to completion of the project (or prior to completion of the project phase, for phased projects). **c. GHG Reduction Plan Implementation after Construction.** The project applicant shall implement the GHG Reduction Plan after construction of the project (or at the completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into the project or	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		off-site projects, the measures shall be implemented on an indefinite and ongoing basis. The project applicant shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan. **d. Annual Report.** Implementation of the GHG reduction measures and related requirements shall be ensured through compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report ("Annual Report"), for review and approval by the City Planning Director or his/her designee. The Annual Report shall be submitted to an independent reviewer of the City's choosing to be paid for by the project applicant. The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan. The GHG Reduction Plan shall be considered fully attained when the project demonstrates consistency with a Qualified Climate Action Plan or when the project reduces non-transportation GHG emissions below the 2030 GHG efficiency threshold of 0.61 MT CO2e/SP, as confirmed by the City through	

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		an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below. **e. Corrective Procedure.** If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures ("Corrective GHG Action Plan"). The project applicant shall then implement the approved Corrective GHG Action Plan. If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City may, in addition to its other remedies: (a) assess the project applicant a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed. The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline. In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant has made a good	

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Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		faith effort to comply with the GHG Reduction Plan. The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan. **f. Timeline Discretion and Summary.** The City shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.	
Impact GHG-2: Project operations could conflict with applicable GHG plans, policies, or regulations.	S	Mitigation Measure GHG-2: Implement Mitigation Measure GHG-1. While implementation of Mitigation Measure GHG-1 would reduce the potential conflicts with policies, this impact would still be considered significant and unavoidable.	SU
Impact GHG-3: Project construction and operation would generate GHG emissions and would contribute to a significant and unavoidable cumulative impact.	S	Mitigation Measure GHG-3: Implement Mitigation Measure GHG-1. While implementation of this mitigation measure would reduce the potential conflicts with policies, this cumulative impact would still be considered significant and unavoidable.	SU
		SCA-GHG-1: Green Building Requirements (#87) *a. Compliance with Green Building Requirements During Plan-Check* Requirement: The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code). i. The following information shall be submitted to the City for review and approval with the application for a building permit: • Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards. • Completed copy of the final green building checklist approved during	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		the review of the Planning and Zoning permit. • Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit. • Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below. • Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance. • Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit. • Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance. ii. The set of plans in subsection (i) shall demonstrate compliance with the following: • CALGreen mandatory measures. • New Construction of Residential or Non- residential projects that remove a Historic Resource (as defined by the Green Building Ordinance) the point level certification requirement is 53 points for residential and LEED Gold for non-residential)] per the appropriate checklist approved during the Planning entitlement process. • All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted. • The required green building point minimums in the appropriate credit categories.	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: N/A *b. Compliance with Green Building Requirements During Construction* Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project. The following information shall be submitted to the City for review and approval: i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit. ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance. iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building *c. Compliance with Green Building Requirements After Construction* Requirement: Prior to the finaling the Building Permit, the Green Building Certifier shall submit the appropriate documentation to City staff and attain the minimum required point level. When Required: Prior to Final Approval Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26) *a. Truck Loading Docks* Requirement: The project applicant shall locate proposed truck loading docks as far from nearby sensitive receptors as feasible. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building *b. Truck Fleet Emission Standards* Requirement: The project applicant shall comply with all applicable California Air Resources Board (CARB) requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Methods to comply include, but are not limited to, new clean diesel trucks, higher-tier diesel engine trucks with added Particulate Matter (PM) filters, hybrid trucks, alternative energy trucks, or other methods that achieve the applicable CARB emission standard. Compliance with this requirement shall be verified through CARB's Verification Procedures for In-Use Strategies to Control Emissions from Diesel Engines. When Required: Prior to building permit final; ongoing Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	
4.6 Noise and Groundborne Vibration			
There are no significant Noise and Groundborne Vibration impacts.	LTS	SCA-NOI-1: Construction Days/Hours (#62) Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours: a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.	LTS

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday. c. No construction is allowed on Sunday or federal holidays. Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area. Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-NOI-2: Construction Noise (#63) Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		measures include, but are not limited to, the following: a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible. b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures. c. Applicant shall use temporary power poles instead of generators where feasible. d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction. e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-NOI-3: Extreme Construction Noise (#64) *a. Construction Noise Management Plan Required* Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following: i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings; ii. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions; iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and v. Monitor the effectiveness of noise attenuation measures by taking noise measurements. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		b. Public Notification Required Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented. When Required: During construction Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
		SCA-NOI-4: Construction Noise Complaints (#66) Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include: a. Designation of an on-site construction complaint and enforcement manager for the project; b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit; c. Protocols for receiving, responding to, and tracking received complaints; and d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-NOI-5: Exposure to Community Noise (#67) Requirement: The project applicant shall submit a Noise Reduction Plan prepared by a qualified acoustical engineer for City review and approval that contains noise reduction measures (e.g., sound-rated window, wall, and door assemblies) to achieve an acceptable interior noise level in accordance with the land use compatibility guidelines of the Noise Element of the Oakland General Plan. The applicant shall implement the approved Plan during construction. To the maximum extent practicable, interior noise levels shall not exceed the following: a. 45 dBA: Residential activities, civic activities, hotels b. 50 dBA: Administrative offices; group assembly activities c. 55 dBA: Commercial activities d. 65 dBA: Industrial activities When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning Monitoring/Inspection: Bureau of Building	
		SCA-NOI-6: Operational Noise (#68) Applicable To: All projects. Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City. When Required: Ongoing Initial Approval: N/A Monitoring/Inspection: Bureau of Building	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		SCA-NOI-7: Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities (#70) Requirement: The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at [ENTER ADDRESS OF ADJACENT PROPERTY OR VIBRATION SENSITIVE ACTIVITY]. The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. The applicant shall implement the recommendations during construction. When Required: Prior to construction Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
4.7 Geology, Soils and Seismicity			
There are no significant Geology, Soils and Seismicity impacts.	LTS	SCA-GEO-1: Construction-Related Permit(s) (#37) Requirement: The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	LTS
		SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) Requirement: The project applicant shall submit a site-specific geotechnical report, consistent with California Geological Survey Special Publication 117	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		(as amended), prepared by a registered geotechnical engineer for City review and approval containing at a minimum a description of the geological and geotechnical conditions at the site, an evaluation of site-specific seismic hazards based on geological and geotechnical conditions, and recommended measures to reduce potential impacts related to liquefaction and/or slope stability hazards. The project applicant shall implement the recommendations contained in the approved report during project design and construction. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	
4.8 Hydrology and Water Quality			
There are no significant Hydrology and Water Quality impacts.	LTS	SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction (#45) *a. Erosion and Sedimentation Control Plan Required* Requirement: The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be	LTS

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Building Monitoring/Inspection: N/A *b. Erosion and Sedimentation Control During Construction* Requirement: The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building. When Required: During construction Initial Approval: N/A Monitoring/Inspection: Bureau of Building	
		SCA-HYD-2: State Construction General Permit (#46) Requirement: The project applicant shall comply with the requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required Permit Registration Documents to SWRCB. The project applicant shall submit evidence of compliance with Permit requirements to the City. When Required: Prior to approval of construction-related permit Initial Approval: State Water Resources Control Board; evidence of compliance submitted to Bureau of Building Monitoring/Inspection: State Water Resources Control Board	
		SCA-HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects (#50) *a. Post-Construction Stormwater Management Plan Required*	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		Requirement: The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following: i. Location and size of new and replaced impervious surface; ii. Directional surface flow of stormwater runoff; iii. Location of proposed on-site storm drain lines; iv. Site design measures to reduce the amount of impervious surface area; v. Source control measures to limit stormwater pollution; vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff. When Required: Prior to approval of construction-related permit Initial Approval: Bureau of Planning; Bureau of Building Monitoring/Inspection: Bureau of Building *b. Maintenance Agreement Required* Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following: i. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and	

Table 2-1 Summary of Impacts, Standard Conditions of Approval, and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance without Mitigation	Standard Conditions of Approval/Mitigation Measures	Level of Significance With Mitigation
		reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense. When Required: Prior to building permit final Initial Approval: Bureau of Building Monitoring/Inspection: Bureau of Building	

Source: Baseline Environmental Consulting, 2019.

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3.0 PROJECT DESCRIPTION

In compliance with the California Environmental Quality Act (CEQA), this Environmental Impact Report (EIR) describes the potential environmental impacts of the General Electric (GE) Site Remediation and Redevelopment Project at 5441 International Boulevard in Oakland, California (proposed project). The proposed project is the demolition of contaminated buildings, site remediation and construction of a warehouse on the site previously owned by GE. Bridge Development Partners is the project applicant and the City of Oakland is the Lead Agency for this CEQA analyses.

A description of the proposed project and its regional and local context, planning context, background, and objectives is provided below. A discussion of required project approvals and entitlements, and a variant to the project that requires all project-related truck trips to access San Leandro Street rather than International Boulevard is also included in this chapter.

3.1 PROJECT SITE

The following section describes the location of the proposed project, surrounding land uses, site history and background, and existing General Plan and Zoning designations.

A. Location and Surrounding Land Uses

The GE site (APN: 041-3848-001-00) consists of approximately 24 acres on International Boulevard (State Route (SR) 185), between 54th and 57th Avenues, and is located east of San Leandro Street and the Bay Area Rapid Transit (BART) tracks in the Melrose neighborhood of Oakland, CA. The City of Oakland is located in Alameda County on the eastern side of San Francisco Bay, approximately 4.5 miles east of San Francisco. The proposed project site is located southeast of Downtown Oakland, north of the Oakland Coliseum and northeast of San Leandro Bay, which is part of the San Francisco Bay. The proposed project site and regional location are shown in Figure 3-1. A more detailed vicinity map is shown in Figure 3-2.

The proposed project site is surrounded by a mix of commercial, residential and industrial uses (see Figure 3-2). There are residential uses, primarily single-family homes, directly north of the site, as well as northeast of the site, across International Boulevard. There are also a few commercial uses north of the site, along 54th Avenue, and northeast of the site, along International Boulevard. The commercial properties in this area are composed of retail establishments such as food uses and markets, automotive repair shops, and some manufacturing. Industrial uses and parking lots are located to the south and southeast of the site with additional manufacturing facilities towards the west and southwest of the property along the San Leandro Street corridor.

Figure 3-1
Regional and Site Location

0 2000 Feet

GE Site Remediation and Redevelopment Project EIR
Sources: Google Map.

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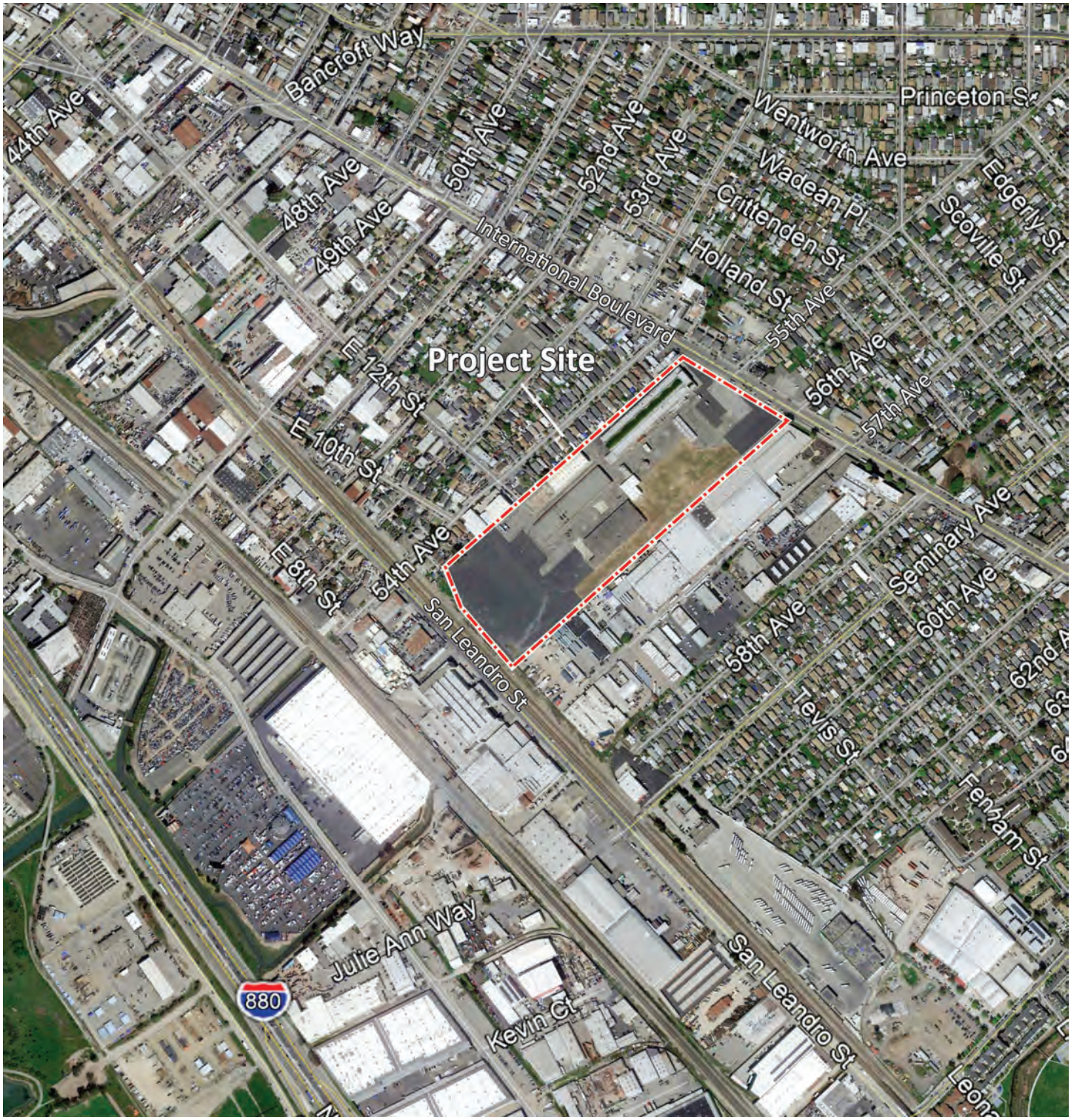

Figure 3-2
Site Aerial and Surrounding Uses

0 700 Feet

GE Site Remediation and Redevelopment Project EIR
Source: Google Earth Pro, 2019.

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An unused Union Pacific right-of-way and railroad tracks, BART tracks, and San Leandro Street run directly along the southwest boundary of the project site. Across the railroad tracks on San Leandro Street are large, often cinderblock and metal or vinyl-sided buildings used for industrial and warehouse purposes.

Regional vehicular access to the project site is via International Boulevard and the Interstate 880 (I-880)/42nd Avenue/High Street exit 1.6 miles north of the project site, and the I-880/66th Avenue exit 1.6 miles south of the site. The project area is accessible by Alameda-Contra Costa (AC) Transit buses, which run frequently along International Boulevard, as well as Foothill Boulevard, High Street, 50th Avenue, and Seminary Avenue. In addition, the Oakland Fruitvale BART station is approximately 1.3 miles northwest of the site and the Coliseum BART station is approximately 1.3 miles southeast of the site. BART provides access to the project area from San Francisco, cities along the eastern side of San Francisco Bay, and suburbs in Contra Costa County and Alameda County. A Bus Rapid Transit (BRT) line, with a stop within 0.25 miles of the project site, is under construction along the project site frontage on International Boulevard and is expected to be operating in early 2020 prior to project completion.

B. Site Conditions, History, and Cleanup and Abatement

GE purchased the project site as an undeveloped property in 1922. In 1923, GE began to develop the property to house transformer manufacturing operations. Transformers were manufactured on the property until approximately 1975. In the 1920s, GE also owned and operated a radio broadcast station (KGO) in a building on the site that was demolished in the 1980s. Between 1975 and the mid-1990s, GE Apparatus Service Department operated an electrical equipment maintenance and repair operation on portions of the site. Afterwards, the site was used for a period of time for storage of mobile office trailers. The site and buildings on the site have been vacant since approximately 2005.

1. Site Conditions

Today, eight buildings remain on the 24-acre site (Buildings #1, #2, #4, #8, #17, #18, #20, and #21); these buildings were constructed between 1924 and 1975 (as shown in Figure 3-3), with the exception of Building #21, which was constructed in the early 1980s to house monitoring and remediation equipment. Two buildings on the project site are historic resources as defined by CEQA and described more fully below and in Section 4.1, Cultural Resources and Tribal Cultural Resources, of this EIR.

To secure the site from unauthorized entry, the site is surrounded by a fence, posted against trespassing, and there is on-site security 24 hours a day. The site is inspected monthly to assess its condition and determine if maintenance is required for items such as landscaping, vandalism (including graffiti), or inadvertent garbage accumulation. Typical maintenance activities include, but are not limited to: fence repairs, painting over graffiti, and garbage removal as required during monthly site visits; street-sweeping semi-annually at a minimum or as required during monthly site inspections; and annual asphalt repairs.

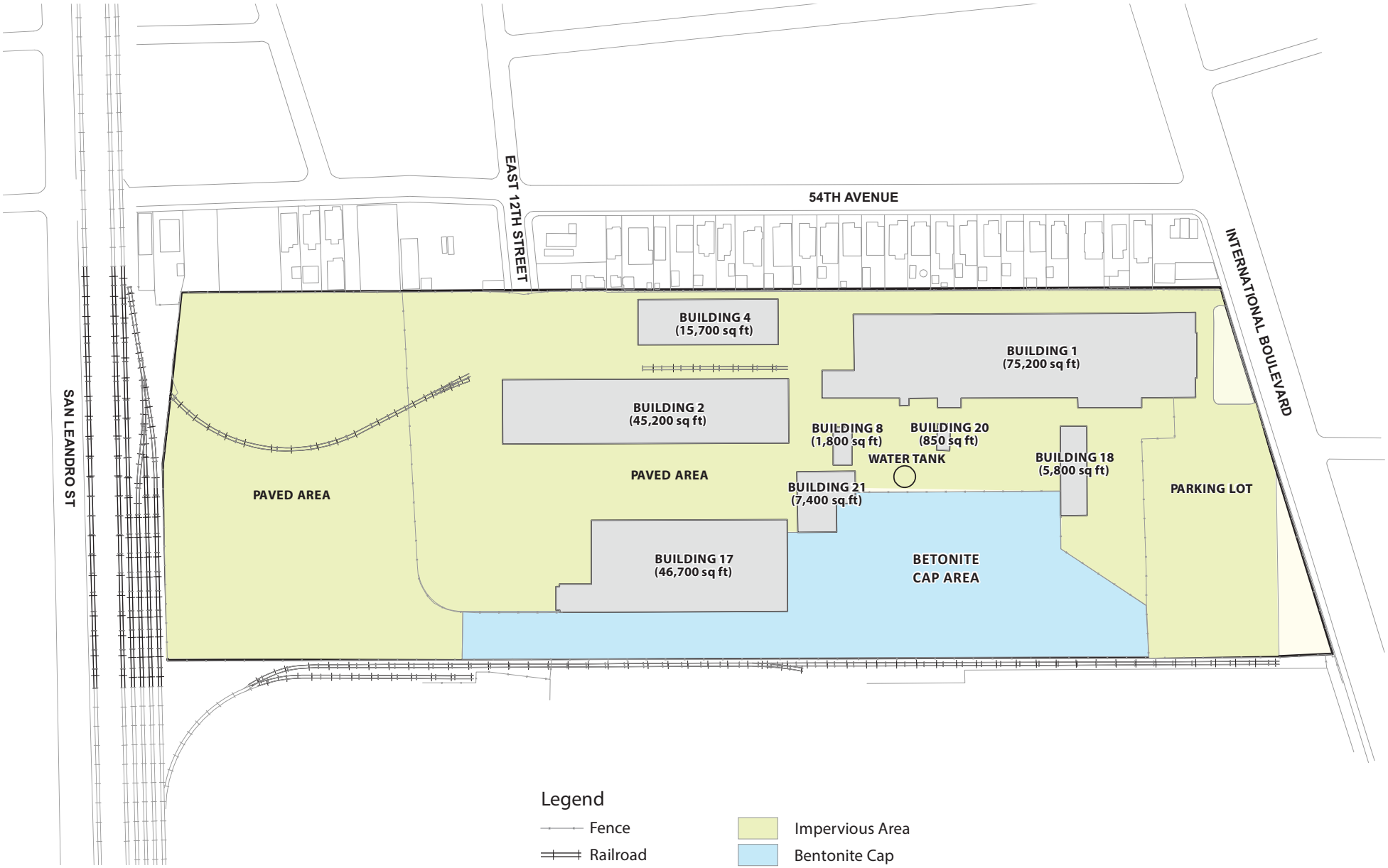

Figure 3-3
Site Features

0 700 Feet

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GE Site Remediation and Redevelopment Project EIR
Source: GEOSYNTEC Consultants, December 2012.

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Nearly all of the site has a General Plan designation of General Industry and Transportation and, as shown on Figure 3-4, a zoning designation of General Industrial (IG), which allows manufacturing and distribution uses. The northwestern portion of the site has a zoning designation of IG/S-19 General Industrial/Health and Safety Protection Overlay due to the residential and commercial uses adjacent to the site boundary. An area of the site within approximately 100 feet from International Boulevard is within the Neighborhood Center Mixed Use General Plan designation and is zoned CN-3, Neighborhood Center Commercial Zone the intent of which is to create, preserve and enhance mixed-use neighborhood commercial centers.

2. Site History and Contamination

The transformer-manufacturing operations required the use of various chemicals, including 10C (mineral) oils, pyranol (a dielectric fluid containing polychlorinated biphenyls [PCBs] that at times was mixed with trichlorobenzene [TCB]), cleaning solvents (primarily chlorinated volatile organic compounds [CVOCs]), and paints (aromatic CVOCs). Between 1975 and the mid-1990s, GE performed electrical and mechanical repair of medium to large industrial and utility equipment, including turbines, electric motors and switch gear equipment. Chemicals used during these operations included paints, varnishes, cleaners, lubricating oils, and various solvents, including xylenes, acetone, and methyl ethyl ketone. Please see Section 4.2, Hazards and Hazardous Materials, for further discussion.

These past transformer manufacturing and electrical equipment maintenance and repair operations at the project site resulted in releases of hazardous materials including PCBs, petroleum hydrocarbons, CVOCs and metals that have impacted the surface, subsurface and groundwater of the project site.[1]

Structures on the project site also contain hazardous building materials including asbestos containing materials, paints containing heavy metals and PCBs, and chemically treated wood.[2] PCBs have also been detected in concrete floor slabs, wood, and brick building materials, indicating that releases of PCBs have contaminated building materials. Volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) have also been detected in concrete floor slabs. Sumps and a tank with residual sludge/debris containing PCBs and metals have also been identified at the project site, and piping that contained pyranol (an oil containing PCBs) may still be present at the project site.[3]

[1] Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, General Electric Oakland Site, Oakland, California, June.

[2] SCA Environmental, Inc., 2010. Summary Report: Phase 2 Hazardous Materials Survey, Confidential Site Oakland, California, 2nd Revision, June 17.

[3] Arcadis, 2009. General Electric Company, Phase I Building Assessment Report, East 14th Street Facility, Oakland, California, January.

Figure 3-4

Residential
RD Detached Unit
RM Mixed Housing
RU Urban

Commercial
CN Neighorhood Center
HBX-1 Housing & Business Mix 1

Open Space
OS (NP) Neighborhood Park

Industrial
M-40 Heavy
GIX-2 Commerical Industrial Mix 2
IG Industrial General

Special & Combining
S-19 Health & Safety Protection Overlay

Project Site

Zoning Boundaries

Figure 3-4
Zoning Designations

0 485 Feet

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GE Site Remediation and Redevelopment Project EIR
Source: City of Oakland Planning Department, 2017.

As noted above, the site and the buildings on the site are contaminated and remediation and monitoring activities have been ongoing for the past 40 years. Following are some of the major actions.

a. Cleanup and Abatement Order No. 80-011. In early December 1980, the San Francisco Bay Regional Water Quality Control Board (RWQCB), in coordination with the California Department of Health Services (DHS, predecessor entity to the California Department of Toxic Substances Control [DTSC]) and the United States Environmental Protection Agency (USEPA), issued Cleanup and Abatement Order No. 80-011 (CAO No. 80-011). CAO 80-011 required the abatement of PCB discharge, as well as preparation of: 1) a Phase II study, with information on historical and current site operations, hydrogeology, and additional data to define the extent of PCBs; 2) an interim plan to address subsurface oil identified in prior investigations and surface water runoff; and 3) a plan for soil and groundwater cleanup and corrective measures. DTSC has oversight over the investigation and remediation of the site, and the USEPA has an environmental oversight role with respect to PCBs.

b. 1993 Covenant of Deed Restriction. In 1993, a covenant to restrict the use of the property (i.e., a deed restriction that runs with the land) was imposed on the property by DTSC and is included in Appendix B.[4] To "protect the present and future public health and safety…and avoid potential harm to persons or property which may result from hazardous substances which have been deposited on the property," the covenant restricts the use of the property to commercial or industrial uses that preserve the integrity of the cap containment of the hazardous substances in soil. The following uses are prohibited:

- Residential development .
- Hospitals or health clinics.
- Day care centers for children or seniors.
- Schools.
- Raising of food .

c. 1997 Consent Order between GE and DTSC (HSA 96/97-061). In 1997, GE entered into a Consent Order (HSA 96/97-061)[5] with DTSC which superseded previous orders with DTSC and is the current order for the property. The 1997 Order required that the work at the site related to PCBs continue and that VOC investigation and cleanup also be completed consistent with federal and State laws, regulations, and guidelines. The Order established the approach for investigation, risk assessment, remedy selection and implementation, as well as discontinuation of the remedy after cleanup goals are achieved. Interim measures were also required pending implementation of the final remedy.

[4] Department of Toxic Substances Control (DTSC), 1993. Covenant of Deed Restriction. Recorded in Official Records Alameda County, CA, April 9.

[5] State of California Environmental Protection Agency Department of Toxic Substances Control, 1997. Consent Order (HSA 96/97-061), June 25.

d. 2010 Declaration of Public Nuisance and Historic Resources. In March 2010 the City of Oakland inspected the property, determined that occupation of the site and the buildings was dangerous and unsafe, and issued a Declaration of Public Nuisance – Substandard (Declaration) on May 21, 2010 (Complaint #1001777) (located in Appendix B).[6] To address and comply with this declaration and continue remediation of the hazardous site conditions, GE proposed to demolish the eight existing buildings based on their level of contamination and current dilapidated condition, and submitted an application for demolition of the buildings to the City on July 30, 2010. The City notified GE that two of the buildings (Building #1 and Building #2) were identified historical resources and contributing elements to the 57th Avenue Industrial District Area of Primary Importance (API), and environmental review under CEQA was required as well as Design Review and Demolition Findings for the historic buildings.

Buildings #1 and #2 are listed in the State of California Office of Historic Preservation (OHP) Directory of Properties. Building #1, the GE Oakland Works Building, was assigned a Status Code of "2S2", indicating that it is an individual property determined eligible for the National Register of Historic Places by consensus through the Section 106 process[7] and is listed in the California Register of Historical Resources. Building #2, the GE Insulation Department Building, was assigned a Status Code of "3D", indicating that it appears eligible "as a contributor to a National Register eligible district through survey evaluation." Demolition of these historic resources is considered to be a significant and unavoidable impact, and an EIR was therefore required. Please see Section 4.1, Cultural Resources and Tribal Cultural Resources, for further discussion.

GE continued with the demolition project, and in 2017, the City of Oakland issued the GE Demolition - International Boulevard Draft Environmental Impact Report (Draft EIR) for public comment, which evaluated alternatives to avoid or mitigate the proposed demolition of the historic structures. Following receipt of comments and discussions with the City, GE began to evaluate redevelopment of the property and alternative mitigation approaches. The 2017 EIR was not certified and the proposed project evaluated in this EIR (i.e., to demolish existing buildings, remediate and redevelop the site with a warehouse building) has replaced the prior demolition project.

e. Remedial Action Plan and Remedial Design and Implementation Plan. In 2011 a Remedial Action Plan (RAP)[8] was prepared which summarized the site conditions, past investigations and remedial efforts, the process for selecting the preferred remedial action

[6] City of Oakland, 2010. Declaration of Public Nuisance – Substandard (Declaration) on May 21, 2010 (Complaint #1001777), May 21.

[7] The "Section 106 process" refers to Section 106 of the National Historical Preservation Act, which requires that federal agencies take into account the effects of their undertakings on historic properties. The OHP evaluated Building #1 pursuant to Section 106 in 2006 for another project and assigned the "2S2" status code at that time.

[8] Geosyntec Consultants, 2011. Remedial Action Plan, General Electric Site, 5441 International Boulevard, Oakland CA, June.

alternative, and a description of the preferred remedy and implementation schedule. The selected remedial alternative consists of groundwater extraction and treatment at the down-gradient property boundary; groundwater extraction and treatment in CVOC hot spots; monitored natural attenuation (MNA) for other areas of groundwater; targeted excavation of a CVOC hot spots in soil; capping for PCBs in soil, and institutional controls. Pursuant to CEQA, the DTSC adopted an Initial Study/Negative Declaration for the approved remedy as part of the Final RAP in June 2011. In April of 2012, Geosyntec Consultants, Inc. (Geosyntec) on behalf of GE prepared a Remedial Design and Implementation Plan (2012 RDIP) that presented the design and required implementation activities for the selected remedy described in the 2011 RAP.[9] Phase 1 of the remedy for the site was implemented by GE between 2013 and 2015 and consisted of: (1) targeted soil excavations for CVOCs and PCBs; (2) installation and operation of a groundwater extraction and treatment system (GETS); (3) capping of un-capped areas of the site; (4) stormwater management to mitigate potential migration of impacted sediments off-site; (5) MNA of off-site groundwater; and (6) monitoring and maintenance of the remedy implemented thus far.

Because the proposed project includes redevelopment and reuse of the site, DTSC and USEPA have required the preparation of an Explanation of Significant Differences (ESD) to the DTSC-approved 2011 RAP and an addendum to the RDIP to modify the remedy and its implementation to accommodate the redevelopment of the site with industrial and commercial uses. The Draft Final RDIP Addendum (RDIP Addendum) was submitted to DTSC and USEPA in October 2019 for review, and is included in Appendix C.[10] Additionally, USEPA has requested a full Toxic Substances Control Act (TSCA) Application for risk-based cleanup of PCBs under Section 761.61(c) to be submitted and approved. Therefore, Phase II of the remedy to be implemented by the project sponsor is part of the project being described and evaluated in this EIR and will be implemented with continuing approval and oversight from DTSC and USEPA.

3.2 PROJECT OBJECTIVES

The objectives for the project are to:

- Remediate and redevelop the site to return it to productive use as an employment center while protecting human health and the environment.
- Protect human health and the environment by installing a new protective cap on the site, abating PCBs, continuing groundwater remediation after redevelopment, and mitigating vapor intrusion to allow redevelopment that preserves and retains the front of Building #1.
- Comply with regulatory agency oversight and requirements, including but not limited to those of the USEPA and DTSC.

[9] Geosyntec Consultants, 2012. Final Remedial Design and Implementation Plan, April 26.

[10] EKI Environment & Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, October 4.

- Remove and dispose of contaminated materials during remediation activities from defined site areas in licensed and regulated off-site locations per direction from USEPA and DTSC.
- Eliminate blight and comply with the City's 2010 Declaration of Public Nuisance and the 1993 DTSC Covenant of Deed Restriction and remove the reported unsafe and hazardous conditions on the site.
- Redevelop the site with a use that complies with City General Plan, Zoning Code and building codes.

3.3 PROPOSED PROJECT

The following sections describe the project components which broadly consist of demolition of the eight existing structures and associated equipment and foundations; remediation actions for contaminated materials and soils; and construction of the new warehouse building. The proposed project would also retain, remediate, rehabilitate and incorporate the "bulkhead" portion of Building #1 (i.e., the front façade facing International Boulevard and a portion of the side of the building) into the new warehouse structure. The project application and plans can be viewed at the Planning and Building Department, Bureau of Planning, 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612, Case Numbers PLN19-076/ER18-013.

The demolition, remediation and construction phases would all require the removal of material (both contaminated and non-contaminated) as well as the import of clean soil and other materials for site grading, capping, building, paving, landscaping, and clean utility corridors.

Table 3-1 provides a description of the estimated amounts and truck trips associated with removal and import of materials. Table 3-1 also identifies the type and amount of materials and locations of the licensed facilities where materials would be disposed. Approximately 9,000 tons of material, of which 4 percent is estimated to be highly hazardous, will be disposed of at appropriately licensed waste facilities consistent with applicable laws and regulations, including characterization of waste for hazardous chemicals. Please see Section 4.2, Hazards and Hazardous Materials, for further discussion.

Table 3-2 provides a description of the construction phasing, duration and activity levels. The construction duration will be approximately 17 weeks for demolition (includes demolition of existing buildings, pavement, landscaping, walls and fencing), eight weeks for remediation (includes removal and remediation of contaminated materials), nine weeks for grading, 36 weeks for building construction, 10 weeks for additional site improvements (paving, utility connections, landscaping), and seven weeks for construction of the vapor intrusion mitigation system (VIMS) for a total of approximately 22 months. As indicated in Table 3-2, many activities

Table 3-1 Projected Number of Truck Trips for Export and Import of Materials

Material	Estimated Tons	Truck Trips	Location of Waste Facility
Highly hazardous contaminated soil (PCBs > 1,000 mg/kg)[a]	312	16	Chemical Waste Management of the Northwest (Arlington, OR; 657 miles from site)
Contaminated soil (PCBs <1,000 mg/kg and ≥50 mg/kg)	2,100	105	Waste Management Kettleman Hills Facility (Kettleman City, CA; 197 miles from site)
Non-Hazardous soil (PCBs <50 mg/kg)	3,024	151	Altamont Landfill (Livermore, CA; 37 miles from site)
Contaminated concrete (PCBs <1000 mg/kg and ≥50 mg/kg)	444	25	Waste Management Kettleman Hills Facility (Kettleman City, CA; 197 miles from site)
Demolition debris (asbestos containing material)	--	10	Republic Forward (Manteca, CA; 71 miles from site)
Demolition debris - PCB hazardous material (PCBs <1000 mg/kg and ≥50 mg/kg))	--	15	Waste Management Kettleman Hills Facility (Kettleman City, CA; 197 miles from site)
Demolition debris (asphalt)		640	Bay Area Concrete Recycling (24701 Clawiter Road, Hayward, CA 94545, 12 miles from site)
Demolition debris (scrap metal)		30	Shnitzer Steel (1101 Embarcadero, Oakland, 6 miles from site)
Demolition debris (non-hazardous material)	--	100	Altamont Landfill (Livermore, CA; 37 miles from site)
Imported soils for filling excavations, landscaping, utility clean corridors, vapor intrusion mitigation system	--	2,200	Source and location of fill material is not known
Construction materials and equipment during remediation	--	20	Source and location of construction materials and equipment is not known
Total Number of Truck Trips		**3,312**	

Notes: The information in Table 3-1 was provided by the project sponsor and their remediation and design team. While these amounts are considered to be conservative, they are based on available information and could change as sampling and field conditions proceed.
mg/kg – milligrams per kilogram
[a] For PCBs in soil, there are no chemical-specific requirements that are legally applicable, except with respect to off-site disposal of PCB remediation waste which requires that off-site disposal of waste with PCB levels of 50 mg/kg or greater must occur at an appropriately licensed facility.
Source: Deepa Gandhi, PE, EKI Environment & Water, Inc. and Brendan Kotler, Bridge Development Partners. 2019. Personal Communication via email to Baseline Environmental Consulting. August 22.

will be undertaken concurrently. Crew sizes will vary from 10-100 workers throughout the construction process and a variety of equipment will be used during different construction phases, such as excavators, graders, dozers, asphalt and concrete demolition equipment, loaders, scrapers, trenchers, water trucks, concrete trucks, concrete finishing equipment, crane, scissor lifts, trenchers, backhoes, forklifts, tractors, loaders.

Table 3-2 Estimated Construction Phasing, Duration and Activity Levels

Construction Phase/Activities	Duration	Simultaneous with Phase/ Activity:	Equipment	Average/ Peak Daily Crew Size	Part of Site Affected
1: Building Material Abatement in Enclosures	9 weeks		Hand tools, aerial lifts, material handlers	Average: 10 Peak: 20	Central and eastern (existing buildings)
2: Vertical Building Demolition	4 weeks	1	Excavators, dozers, loaders, water trucks, concrete breaking/crushing equipment, dump trucks	Average: 8 Peak: 16	Central and eastern (existing buildings)
2.1: Vertical Building Demolition – Property Boundary	1 week	1,2	Excavators, loaders[a]	Average: 8 Peak: 16	Boundary of site
3: VOC Excavation Removal	2 weeks		Excavators, saw cutting equipment, reach forklift, loader, water truck, dump trucks[b]	Average: 6 Peak: 8	VOC excavation area
4: PCB Excavation Removal, Shored and Tented Areas	4 weeks		Excavators, saw cutting equipment, reach forklift, loader, water truck, crane, dump trucks	Average: 8 Peak: 12	Central
5: Well Destruction and Protection	4 weeks	4	Drill rig and support truck	Average: 3 Peak: 6	Central
6: Remaining PCB Excavation and Sump Removal Tented	4 weeks	4	Excavators, saw cutting equipment, reach forklift, loader, water truck, crane, dump trucks	Average: 8 Peak: 12	Central
7: Remaining PCB Excavations (not tented)	2 weeks		Excavators, saw cutting equipment, loader, water truck, dump trucks	Average: 6 Peak: 12	Central, one area near southern boundary
8: Remove Cap and Concrete Slabs	3 weeks		Excavators, dozers, loaders, water trucks, saw cutting equipment, concrete breaking/crushing/screening equipment, dump trucks	Average: 6 Peak: 20	Entire site
8.1: Remove Cap and Concrete Slabs at Property Boundary	1 week	8	Excavators, loaders[a,b]	Average: 6 Peak: 20	Property boundary
8.2: Remove Cap and Concrete Slabs – Crushing Operations	8 days	8	Loaders, concrete breaking/crushing/screening equipment, dump trucks	Average: 6 Peak: 10	Central
9: Underground Utility Demolition and UST Removals	5 weeks		Excavators, loaders, water trucks, saw cutting equipment, concrete breaking equipment, dump trucks	Average: 6 Peak: 12	Entire site
9.1 Underground Utility Demolition and UST Removals at Property Boundary	3 days	9	Backhoe[a]	Average: 6 Peak: 12	Property boundary
10: Mass and Fine Grading	9 weeks		Dozers, loaders, scrapers, motor grader, excavators, water trucks, blade and tractor	Average: 10 Peak: 16	Entire site

Table 3-2 Estimated Construction Phasing, Duration and Activity Levels

Construction Phase/Activities	Duration	Simultaneous with Phase/ Activity:	Equipment	Average/ Peak Daily Crew Size	Part of Site Affected
10.1: Mass and Fine Grading – Property Boundary	3 days	10	Dozers, scraper, blade and tractors[a]	Average: 6 Peak: 10	Property boundary
11: Construct Underground Utilities within Building Footprint	2 weeks		Excavators, trenchers, loaders, backhoe, water trucks, dump trucks	Average: 8 Peak: 16	New building footprint
12: Construct VIMS Underground Components	7 weeks		Dozer, skip loader, backhoe, reach forklift, aerial lifts	Average: 6 Peak: 12	New building footprint
13: Construct Foundation	6 weeks		Concrete trucks, laser screed, concrete finishing equipment	Average: 40 Peak: 100	New building footprint
14: Construct Underground Utilities Outside of Building Footprint	4 weeks	12, 13	Excavators, trenchers, loaders, backhoe, water trucks, dump trucks	Average: 8 Peak: 16	Site perimeter
15: Construct Underground Utilities Outside of Building Footprint	3 weeks	18	Excavators, trenchers, loaders, backhoe, water trucks, dump trucks	Average: 8 Peak: 16	Site perimeter
16: Construct Temporary Cap	1 week	18	Water Truck	Average: 3 Peak: 4	Site perimeter
17: GETS Relocation	8 weeks	4-10	Excavator, trencher, loader, crane, reach forklift, aerial lifts, backhoe, water truck	Average: 6 Peak: 10	Entire site
18: Building Construction/ Architectural Coatings/Complete VIMS	28 weeks		Concrete trucks, laser screed, concrete finishing equipment, crane, scissor lifts, trenchers, forklifts, tractors, loaders	Average: 40 Peak: 100	New building footprint
19: Paving and Site Improvements (paving, utility connections, landscaping)	10 weeks	18	Excavators, trenchers, graders, blades, laser screed, concrete trucks	Average: 15 Peak: 35	Site perimeter and loading dock area

[a] The size of loaded dozers during all Construction Phase/Activities will be limited to T-5 within 11 feet of the north property line. Small dozers will be used with 1 foot of the north property line. Other equipment as described in the main task will be used for this task but will be positioned away from the boundary or perimeter.
[b] Saw cutter/breaker will only be used for up to 2 days for this activity.
Source: Deepa Gandhi, PE, EKI Environment & Water, Inc. and Brendan Kotler, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, September 13.

A. Demolition

The demolition phase includes removal of all of the buildings including Building #1 (other than the front bulkhead portion which will be remediated) and Building #2, which are identified as historic resources within the Oakland Cultural Heritage Survey. The associated equipment,

building foundations pavement, landscaping, walls and fencing would also be demolished. Demolition of the structures on the site, and the remediation activities would be conducted with regulatory agency oversight by USEPA and DTSC as described in the remediation section below.

The project applicant anticipates that demolition activities would include the off-haul of approximately 300 truck trips for soil and concrete removal and 800 truck trips for demolition debris removal. Demolition debris and soils containing hazardous constituents would be appropriately managed, and nonhazardous materials would be reused or recycled on site where possible.

Per the RDIP Addendum, real-time air monitoring for dust will be conducted during the site demolition and soil handling activities to limit the potential for exposure of the surrounding community to potential airborne PCBs and to evaluate the adequacy of dust control measures. Dust control measures to be implemented and actions to be taken in response to the monitored levels of airborne PCBs and other toxic emissions are identified in a Dust Control Plan and an Air Monitoring Plan presented as Appendices J and K, respectively, of the RDIP Addendum.

B. Remediation

The main components of the DTSC- and USEPA-approved remedy for the site will carry forward under the proposed project pursuant to the 2011 RAP and the 2013 USEPA approved TSCA Application for the Site,[11] as amended by the ESD, and the RDIP Addendum/TSCA Application, as required by DTSC and USEPA. The general response actions for the remedy will remain the same: a combination of containment, monitoring, targeted removal, and use restrictions for the protection of human health and the environment and amendments to accommodate the redevelopment of the site with the warehouse use. The following provides an overview of the proposed remediation actions.

1. PCB Cleanup Plan

The applicant has prepared a PCB Cleanup Plan that consists of the key actions listed below. These actions will be implemented in coordination with demolition and construction activities.[12]

a. PCBs in Concrete. Concrete with PCBs less than 50 milligrams per kilogram (mg/kg) will be crushed and then placed on site under the new cap during the construction phase. Concrete with PCBs at or greater than 50 mg/kg will be appropriately disposed of off-site at licensed facilities (see Table 3-1).

[11] U.S. Environmental Protection Agency (USEPA), 2013. Request for Supplemental TSCA Application for Risk Based PCB Cleanup at General Electric Company Facility at 5441 International Boulevard, Oakland, California, August 28.

[12] EKI Environment & Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, October 4.

b. PCBs in Soil. PCBs in soil at four known hotspot locations will be excavated and disposed of off-site based on characterization and profiling of excavated soil. The targeted excavations will address known high concentrations of PCBs in soil. Excavated materials will be stored on-site in covered stockpiles or waste containers pending disposal characterization and off-site transport. Outside of hotspot areas, areas where PCBs have been identified in soil at concentrations 50 mg/kg or greater will be excavated where soil could be disturbed by the redevelopment activities (e.g., generally at depths shallower than 15 feet below current ground surface). This soil will also be disposed of at an appropriately-licensed facility based on characterization and profiling.

After the targeted excavation of contaminated soil, the area under the proposed building slab would be filled and compacted. The geotechnical improvement of soil underneath the proposed building pad will entail excavation of up to 5 to 6 feet (on average 3 to 4 feet) of existing fill materials and placement and compaction of engineered fill (e.g., re-used existing fill and crushed concrete from building demolition) beneath the proposed pad grade. In certain areas of the site, ground improvement for geotechnical purposes will be required to depths of up to 18 feet below ground surface. Soil movement will also be needed for site grading and utility installation.

On-site exposure to remaining contaminants in soil after hotspot removal and grading will be prevented by:

- Capping – Consistent with the approved 2013 TSCA application and 2011 RAP, a cap will be put in place over the entire site. The existing caps and building foundations will be removed and replaced with new, functionally equivalent capping materials. The new warehouse building slab and concrete pavement will serve as the cap for the site. Landscaped areas will be constructed in raised planters above the concrete cap. The cap will be monitored and maintained after construction.
- Clean Utility Corridors – Clean corridors refer to the installation of subgrade utilities in imported fill material to prevent exposure of maintenance workers to contaminated soil. Aside from remediation-related systems, clean corridors will be used for subgrade utilities that will be active after construction of the warehouse building.
- Stormwater Controls – Stormwater runoff will be collected in a new storm drain system beneath the site. The stormwater runoff from the project site will be treated with measures such as a media treatment basin and/or the various on-site and off-site treatment alternatives, and per City standard requirements. The exact measure or combination of various measures to be used for this project will be further evaluated with the City during the construction design phase and would incorporate USEPA requirements for stormwater and sediment sampling.
- Maintain Land Use Covenant – The current deed restriction for the site prohibits residential and sensitive land uses on the site, listed previously; requires that the cap not be disturbed,

and prohibits penetration of the cap except after notification of DTSC. Additionally, the covenant will be updated, in coordination with DTSC and USEPA, to account for post-remediation site conditions and include requirements for a soil management plan for any post-redevelopment soil handling activities.

c. PCBs in Building Materials. Disposition of the demolished building materials will be based on the sampling of building materials previously conducted by GE and additional sampling as required by the licensed disposal facility, the City of Oakland, and the USEPA. Except for the concrete slabs that are planned for crushing and placement under the new cap on the site, if PCB concentrations are less than 50 mg/kg, all other building materials generated from the demolition will be appropriately disposed off-site at a permitted facility.

In order to allow preservation of the front portion of Building #1, which will be incorporated into the new building, the building materials will be seismically retrofitted and windows and associated framing materials (e.g., caulking, trim, and sill) will be replaced. In addition, this portion of the building may contain PCBs and lead. The façade consists of a double layer of brick, and the interior layer is painted on the inside face. The other elements of the façade that will be retained and/or replaced will depend on further evaluation by a structural engineer, architect, restoration specialist, input from the City following design review and demolition findings and other stakeholders. Because it is unknown at this time exactly how much of the building will be retained and incorporated into the new building, a dynamic investigation and cleanup plan (for more information see Appendix O, Site Demolition, of the RDIP Addendum and Section 4.2, Hazards and Hazardous Materials) is being developed by the applicant to assess and abate PCBs and lead, if needed, in the elements that will be retained.[13] This plan will incorporate results from further sampling and analysis of the building materials and confirmation from DTSC and USEPA.[14]

2. VOC Excavation

Between 2008 and 2010, VOCs in soil and soil-gas were investigated by GE on the northern portion of the site along the property boundary and at the adjacent off-site residences. The investigations determined that VOCs in soil are present in this area at concentrations of up to 21 mg/kg trichloroethene (TCE).[15] To remove VOC contaminated soil in this area and mitigate the potential for VOCs in on-site soil-gas, an area in the northern portion of the site will be excavated and disposed of off-site. Post-excavation soil-gas samples will be collected in this area to evaluate whether post-excavation soil-gas conditions could present vapor intrusion risks for the project or off-site receptors.

[13] EKI Water & Environment, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, Appendix O Site Demolition, October.

[14] EKI Environment & Water, Inc., 2019b. Building Materials Sampling Memorandum, July 11.

[15] Geosyntec Consultants, 2009a. 2006-2008 Field Investigations Report, General Electric Site, 5441 International Boulevard, Oakland, California, Geosyntec Consultants, Inc., March 13, 2009.

3. Soil Management During Remediation

The remedy described in the 2011 RAP indicates that elevated levels of metals above background levels (e.g., antimony, arsenic, barium, cadmium, chromium, copper, lead, silver, and zinc), PCBs, and CVOCs, including TCE up to 10 mg/kg are to remain in soil after remediation activities are completed. In addition, petroleum hydrocarbons including benzene, toluene, ethylbenzene, and xylenes were encountered during removal of an underground storage tank ("UST") in 2010[16] and during EKI's 2018 soil investigation[17] at concentrations up to 930 mg/kg (total petroleum hydrocarbons, diesel range). Other chemicals have also been detected in site soil, but are below risk-based concentrations of concern per thresholds determined by USEPA and DTSC.[18]

Removal and off-site disposal of soil where PCBs greater than 2,500 mg/kg in hotspot areas and 50 mg/kg in other areas has been identified as part of the PCB cleanup plan described above. Soil with remaining contaminants will be disturbed by remediation and construction activities. Given this context, the proposed project includes the following approach and activities related to soil handling during the remediation and construction phases. Dust control and air monitoring activities is discussed in the following section.

- On-site personnel that will handle soil, including construction workers, will have appropriate health and safety training and will follow health and safety procedures described in a site-specific health and safety plan.
- Excavated soil stockpiles will be covered consistent with best management practices.
- Underground structures encountered during any soil disturbance will be removed and disposed of off-site or crushed and reused, if concrete can be reused consistent with sampling results. See Section 4.2, Hazards and Hazardous Materials, for further discussion of structures expected to be encountered and how they would be managed.
- Stormwater during construction will be managed consistent with requirements of the permit obtained for the project under California's Construction General Permit (Order No. 2009-0009-DWQ, as amended).

4. Demolition, Remediation and Construction Air Monitoring

A Dust Control Plan and an Air Monitoring Plan are presented as Appendices J and K, respectively, of the RDIP Addendum. The applicant will perform dust control measures and air monitoring to limit the potential for exposure of the surrounding community to potential airborne

[16] Geosyntec Consultants, 2010. Underground Storage Tank Closure Report, GE Facility at 5441 International Boulevard, Oakland, California, Geosyntec Consultants, February 2, 2010.

[17] EKI Environment & Water, 2018. Email dated 1 October 2018 from Deepa Gandhi (EKI) to Ronald Leach (EPA) and Yongsheng Sun (DTSC) re: 5441 International Blvd, Oakland, CA - Materials for 3 October 2018 Meeting including September 2018 Soil Sampling Results Transmittal, 1 October 2018.

[18] Geosyntec Consultants, 2009b. Feasibility Study Report, General Electric Site, 5441 International Boulevard, Oakland, California, August 6 and 7.

dust and contaminants and to evaluate the adequacy of dust control measures. The air monitoring would include both real-time air monitoring for dust and organic vapors and sampling and laboratory analysis of air for contaminants. The air monitoring will be conducted during site demolition and soil handling activities until a temporary cap and/or the new soil cap is installed.[19] Air monitoring action levels will be developed under DTSC and USEPA oversight based on applicable and relevant standards and risk assessment calculations depending on the project activity and estimated contaminant concentrations. Dust control will include performing work that disturbs PCBs > 1,000 mg/kg in enclosures and installing a dust/noise barrier at the boundary between adjoining residences to the north and the site. See RDIP Addendum, Appendix J, Dust Control Plan and Appendix K, Perimeter Air Monitoring Plan, as well as Section 4.2, Hazards and Hazardous Materials, and Section 4.4, Air Quality, for further discussion of proposed dust control measures and air monitoring activities.

5. Other Remedy Components

Due to the change in site use, the following additional actions are also proposed for implementation as part of the proposed project, subject to DTSC approval:

- The new building will include installation of a vapor intrusion mitigation system (VIMS) to address potential vapor intrusion risks from VOCs in soil and groundwater. The VIMS will be designed and installed with DTSC oversight. See Section 4.2, Hazards and Hazardous Materials, for further discussion of the VIMS.
- Off-site elements of the 2011 RAP remedy overseen by DTSC (i.e., monitored natural attenuation of PCBs) currently will remain unchanged and continue as required and described in the 2011 RAP.
- Some of the existing extraction and monitoring wells will require relocation or removal to accommodate the proposed project, but the modified network will be designed to still provide for VOC source control and containment. Changes to the extraction and monitoring well network will be subject to DTSC and USEPA approval. See Section 4.2, Hazards and Hazardous Materials, for further discussion of modifications to the groundwater extraction and treatment system.

C. Construction and Operation

The redevelopment of the approximately 24-acre site includes the construction of an approximately 534,208 square foot industrial building, with 524,208 square feet of warehouse space, 10,000 square feet of ancillary office uses that includes a 5,000 square foot mezzanine. There would be 93,522 square feet of landscaping provided. The warehouse would have 85 dock doors and, to meet City parking requirements (i.e., 1 space per 3,500 square feet of

[19] Some work will be conducted within enclosures (e.g., asbestos abatement). Air monitoring will be conducted for all work outside of enclosures.

warehouse use[20]) and ensure sufficient employee and visitor parking is available, 219 parking stalls would be provided on the site. Figure 3-5 shows the conceptual site plan for the proposed project including the warehouse, the location of landscaping and parking, and access to and from the site via International Boulevard. Sixteen bike stalls would be provided on the site near the main office entry.

It is estimated that approximately 2,200 truck trips would be required to bring imported soils to the site for filling excavations and landscaping.[21] There are no identified tenant(s) for the warehouse building at this time; however, it is expected that an average of approximately 200 employees will be on the site during operation. The warehouse would not be refrigerated.

1. Construction and Design

Figure 3-6 provides exterior elevations of the proposed warehouse building (showing the darker exterior for the new office portion of the building). As noted above, the front portion, (or bulkhead) of Building #1 would be preserved and incorporated into the design of the new warehouse building. As shown, the height of the portion of Building #1 to be retained is 38 feet, as is the height of the majority of the proposed warehouse building. The exception is the height of the new main entry to the building that would be 2 feet higher (40 feet), to signal where the entrance is located. The length of the historic façade to be retained is approximately 129 feet (including the first and second story portions) along the International Boulevard facing elevation, and approximately 33 feet along the side elevation. Figure 3-7 provides a conceptual view of the building elevations. For the portion of Building #1 to be retained, the interior walls would be treated (via paint removal or encapsulation) to remediate contaminated materials. The exterior bricks of the façade were determined to not pose a risk to human health from high levels of contamination based on previous testing conducted by GE.[22]

Figure 3-8 shows a conceptual view from International Boulevard of the preserved portion of Building #1, and Figures 3-9a and Figure 3-9b show two conceptual alternative design schemes for the main entry for the building in the northeast corner. Figures 3-10a and 3-10b provide examples of the building materials and colors that are proposed to be used for the main office entry. While the colors and materials to be used are in contrast to the early-20th century, utilitarian, Classical Revival-themed style and materials used for the office portion of Building #1, the height of the new building entry and fenestration details are reflective of the Building #1 bulkhead. Please note that building height and exterior elevations Figures 3-6, 3-7 and 3-11 show the darker exterior design scheme.

[20] City of Oakland, Planning Code (updated June 5, 2019), Section 17.116.090 requires a minimum of one parking space per 3,500 square feet of floor area for industrial activities.

[21] Kotler, Brendan, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, March 22.

[22] EKI Environment & Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, Appendix G, Phase II Building Materials Characterization Report and Appendix O, Site Demolition, October.

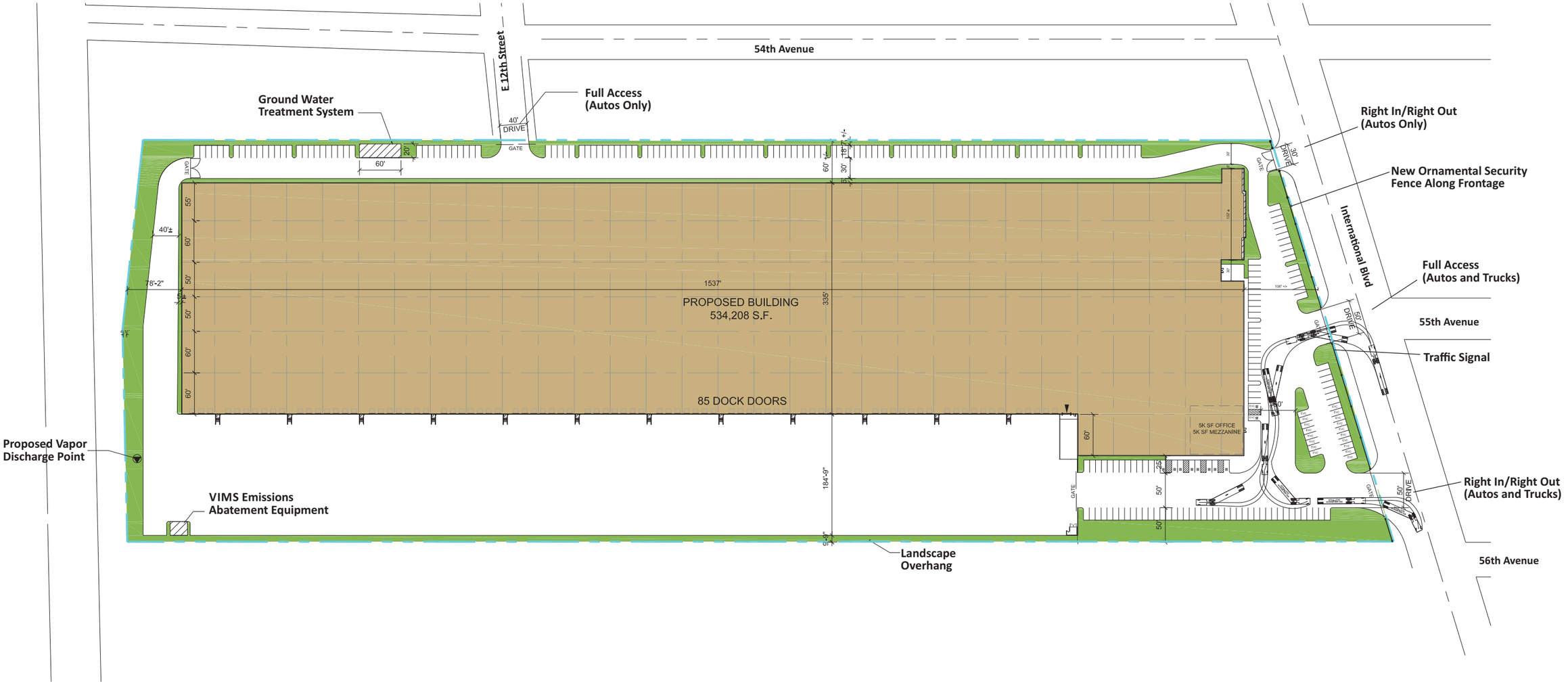
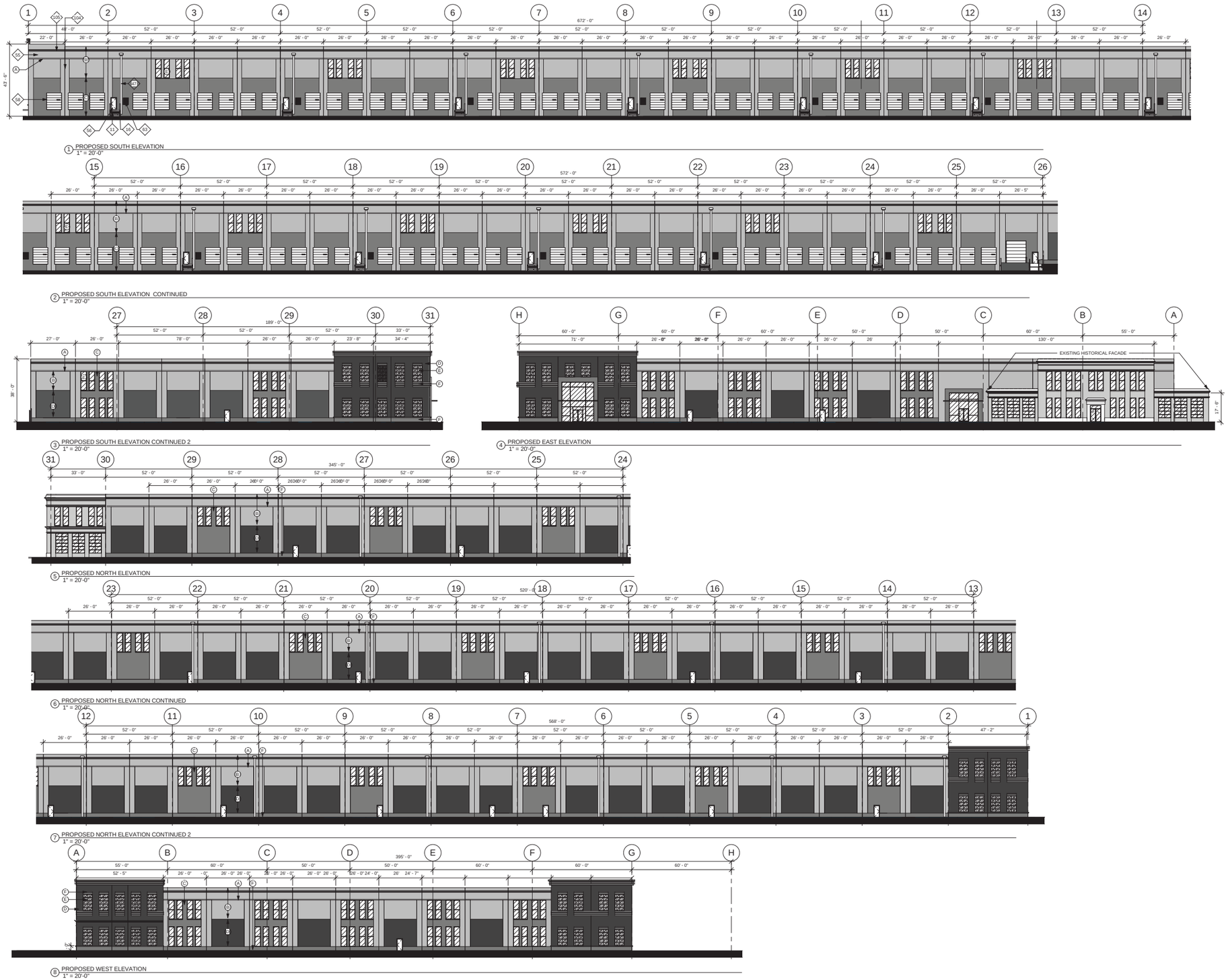


Figure 3-5
Conceptual Site Plan

0 150 Feet

GE Site Remediation and Redevelopment Project EIR

Sources: Bridge Development Partners, Herdman Architecture & Design, October 8, 2019.



KEYNOTES

11	EXTERIOR CONCRETE STAIR W/CONCRETE WALLS. WALLS & RAILINGS PAINTED PEREXTERIOR COLOR SCHEDULE. REFER TO CIVIL AND STRUCTURAL DRAWINGS
16	PROTECTIVE METAL BOLLARDS, CONCRETE FILLED, PAINTED, TYP.
47	EXTERIOR METAL DOWNSPOUT AND OVERFLOW SCUPPERS PAINTED TO MATCH BUILDING. REFER TO PLUMBING PLANS FOR MINIMUM SCUPPER OPENINGS ALLOWABLE PER CODE.
55	CONCRETE TILT-UP PANEL, TYP. PAINTED, SEE EXTERIOR COLOR SCHEDULE. REFER TO ELEVATIONS AND "S" DRAWINGS FOR ADDITIONAL INFORMATION.
56	EXTERIOR MAN DOOR 3'X7', HOLLOW METAL, PAINTED, SEE EXTERIOR COLOR SCHEDULE & DOOR SCHEDULE FOR ADDITIONAL INFO.
58	DOCK-HI LOADING DOOR, 9'X10', WITH VISION GLAZING PRE FINISHED BY MANUFACTURER PER COLOR SCHEDULE.
63	AIR INTAKE LOUVER. PAINT TO MATCH BUILDING WALL, TYP. SIZE VERTICAL 4'X 8', PROVIDE BIRD SCREEN, FILTER AND BURGLAR BARS.
104	PANEL JOINT, TYP.
105	2" DECORATIVE CONCRETE REVEAL WITH CHAMFERED EDGES, TYP.

GLAZING LEGEND

VISION GLAZING:

NON VISION GLAZING:

TEMPERED: T

NOTE:
REFER TO ELEVATIONS FOR TEMPERED GLAZING LOCATIONS.

NON VISION GLAZING NOTES:
1. SINGLE PANE GLAZING PAINT FACE OF CONCRETE PANEL BEHIND BLACK. NO COATING REQUIRED.
2. PROVIDE BREATHABLE MULLION SYSTEM @ NON-VISION GLAZING SECTIONS, NO HOLES REQUIRED IN CONCRETE.
3. PROVIDE SHADE CLOTH BEHIND GLASS IN AREAS INTENDED TO BE NON-VISION WHEN THERE IS NO SPANDREL CONCRETE:
TENCATE MIRAFI 140N 12.5' X 360' FILTER FABRIC

TEMPERED GLAZING NOTES:
1. IN OPERABLE DOORS, WINDOWS AND WITHIN 18" OF WALKING SURFACE TO BE TEMPERED.

EXTERIOR COLOR SCHEDULE

(A)	WHITE EXTERIOR PAINT COLOR: SW 7063 NEBULOUS WHITE
(B)	LIGHT GREY EXTERIOR PAINT COLOR: SW7067 CITYSCAPE
(C)	DARK GREY EXTERIOR PAINT COLOR: SW 7674 PEPPERCORN
(D)	ELDORADO TUNDRA BRICK COLOR: IRONSIDE
(E)	STOREFRONT SOLARBAN 60 INSULATED CLEAR GLAZING
(F)	DECORATIVE BREAK METAL TO MATCH MULLIONS

TYP PAINT NOTES:
PAINT MAN DOORS, GUARD WALLS, RAMP WALLS, STAIR WALLS, GUARD RAILS, ROOF DRAINS, AND LOUVERS TO MATCH ADJACENT BUILDING WALL U.N.O.

TRUCK DOORS TO BE PRE-FINISHED BY MANUFACTURER IN WHITE FINISH

Figure 3-6
Building Exterior Elevations

GE Site Remediation and Redevelopment Project EIR
Sources: Bridge Development Partners, Herdman Architecture & Design, July 29, 2019.

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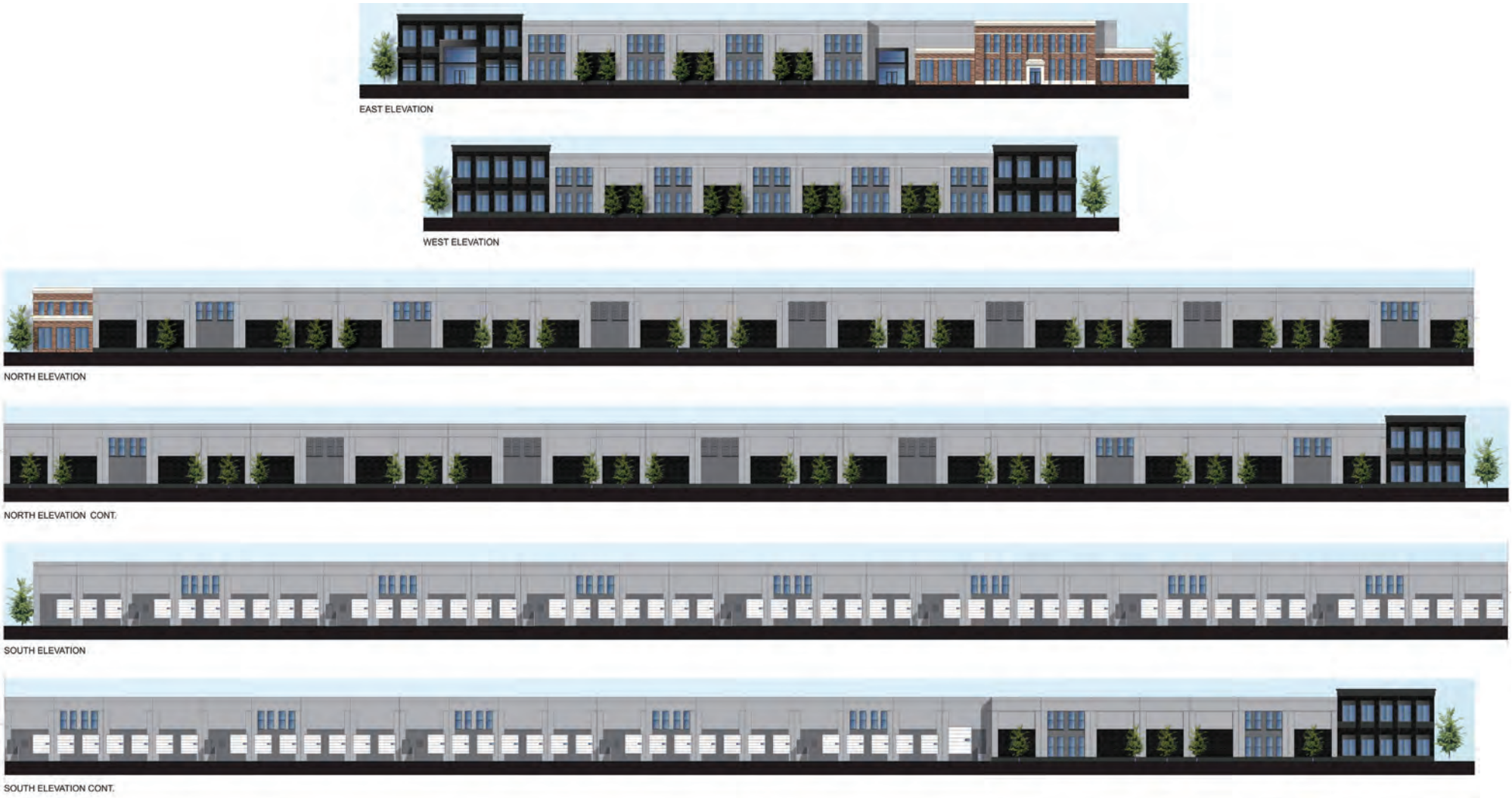

Figure 3-7
Conceptual Building Elevations

GE Site Remediation and Redevelopment Project EIR

Sources: HERDMAN Architecture + Design, H-A+D JOB NO: A17-2096, June 25, 2019

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Figure 3-8

Conceptual View of the Northeast Corner from International Boulevard

Figure 3-9a
Conceptual View of the Southeast Corner from International Boulevard

GE Site Remediation and Redevelopment Project EIR
Sources: HERDMAN Architecture + Design, H-A+D JOB NO: A17-2096, October 9, 2019

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Figure 3-9b
Conceptual View of the Southeast Corner from International Boulevard

GE Site Remediation and Redevelopment Project EIR
Sources: HERDMAN Architecture + Design, H-A+D JOB NO: A17-2096, October 01, 2019

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ENLARGED VIEW @ MAIN OFFICE ENTRY

A. SW 6071: POPULAR GRAY

B. SW 7067: CITYSCAPE

C. SW 7674: PEPPERCORN

D. TUNDRA BRICK

E. SOLARBAN 60 INSULATED CLEAR & CLEAR GLAZING

F. DECORATIVE BREAK METAL

Figure 3-10a

Proposed Materials for the Main Building Entry at Southeast Corner

GE Site Remediation and Redevelopment Project EIR

Sources: HERDMAN Architecture + Design, H-A+D JOB NO: 17-2096, October 24, 2019

BASELINE ENVIRONMENTAL CONSULTING

P:\Base\18218-00 Bridge GE EIR\Products\Draft EIR\Admin 3\Figures\Figure CDR\Figure 3-10a.cdr 11/28/19

ENLARGED VIEW @ MAIN OFFICE ENTRY

A. SW 6071: POPULAR GRAY

B. SW 7642: PAVESTONE

C. TAUPE BRICK

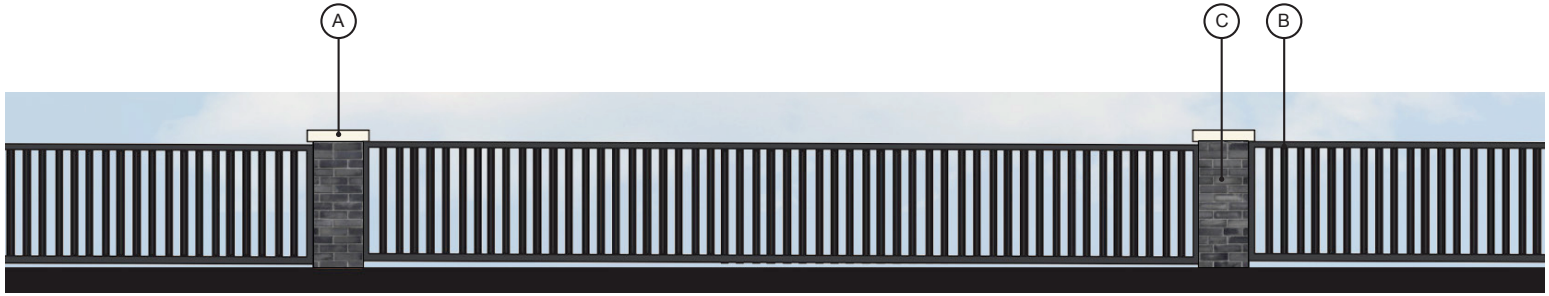
D. SOLARBAN 60 INSULATED CLEAR & CLEAR GLAZING

E. DECORATIVE BREAK METAL

Figure 3-10b

Proposed Materials for the Main Building Entry at Southeast Corner

EAST ELEVATION



FENCE DETAIL

A. PRECAST MASONRY CAP INTEGRATED COLOR TO MATCH SW 6071:POPULAR GRAY

B. GRAY BRICK

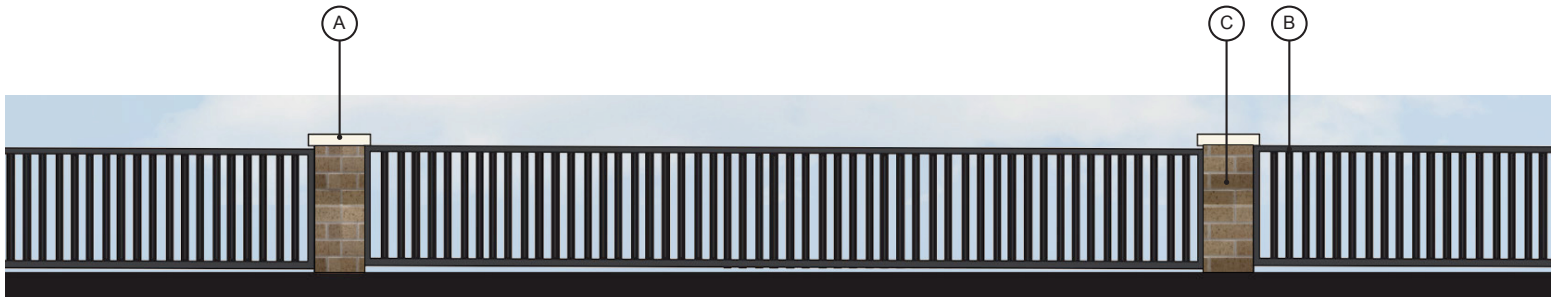
C. WROUGHT IRON

Figure 3-11a
East Elevation and Security Fence Detail

GE Site Remediation and Redevelopment Project EIR
Sources: HERDMAN Architecture + Design, H-A+D JOB NO: 17-2096, Oct 24, 2019

BASELINE ENVIRONMENTAL CONSULTING

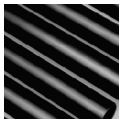
EAST ELEVATION



FENCE DETAIL

A. PRECAST MASONRY CAP INTEGRATED COLOR TO MATCH SW 6071:POPULAR GRAY

B. TAUPE BRICK



C. WROUGHT IRON

Figure 3-11b
East Elevation and Security Fence Detail

GE Site Remediation and Redevelopment Project EIR
Sources: HERDMAN Architecture + Design, H-A+D JOB NO: 17-2096, Oct 24, 2019

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The proposed project includes an 8-foot-high security fence that would be constructed along the site boundary on International Boulevard. The fence would have brick posts with stone caps every 14 feet and in between there would be wrought iron spindles. The three entrances would have wrought iron gates that would be open during business hours and closed at night. Details of the security fence along International Boulevard are shown in Figures 3-11a and 3-11b. A security fence would also enclose the rear of the site (along the San Leandro frontage) and a new gate would be added at the auto-only 12th Street entrance. Internal to the site, there would be security fences to enclose the truck court that would be operated by a key pad entry system for the tenants of the site. Fences of 8 feet in height would be constructed along the northern and southern sides of the site. Landscaping that includes trees and planter boxes will be added along both fence lines.

2. Project Access and Variant

During operation of the proposed project, the average and adjusted daily automobile and truck trips[23] associated with the project was estimated and determined to be 440 passenger vehicle and light trucks per day and 340 heavy truck trips, see Section 4.3, Transportation and Circulation, for more information.

The proposed project also includes signal timing and striping modifications to the new signal at 55th Avenue and International Boulevard to allow left-in access for autos and trucks. The proposed modifications shown on Figure 3-12 would result in the loss of two on-street parking spaces and would require an encroachment permit from Caltrans. The signal modifications would be coordinated with AC Transit to ensure that the new Bus Rapid Transit (BRT) line has priority.

As shown on Figure 3-5, the project would have three access locations on International Boulevard:

- A right-in and right-out only for trucks and autos in the southern portion of the site;
- A full access driveway at the new signal installed at 55th Avenue as part of the BRT Project for trucks and autos that allows left-turns into the site; and
- A right-in and right-out only for autos in the northern portion of the site.

Additionally, there is an existing access to the site from East 12th Street on the northern site boundary that would be used by autos only.

Pedestrians would enter the warehouse through the office space located in the southern portion of the building. Bike parking would be provided to meet City requirements at the front of the warehouse building.

[23] All trucks associated with the project are assumed to be “heavy” or cargo trucks having three or more axles.

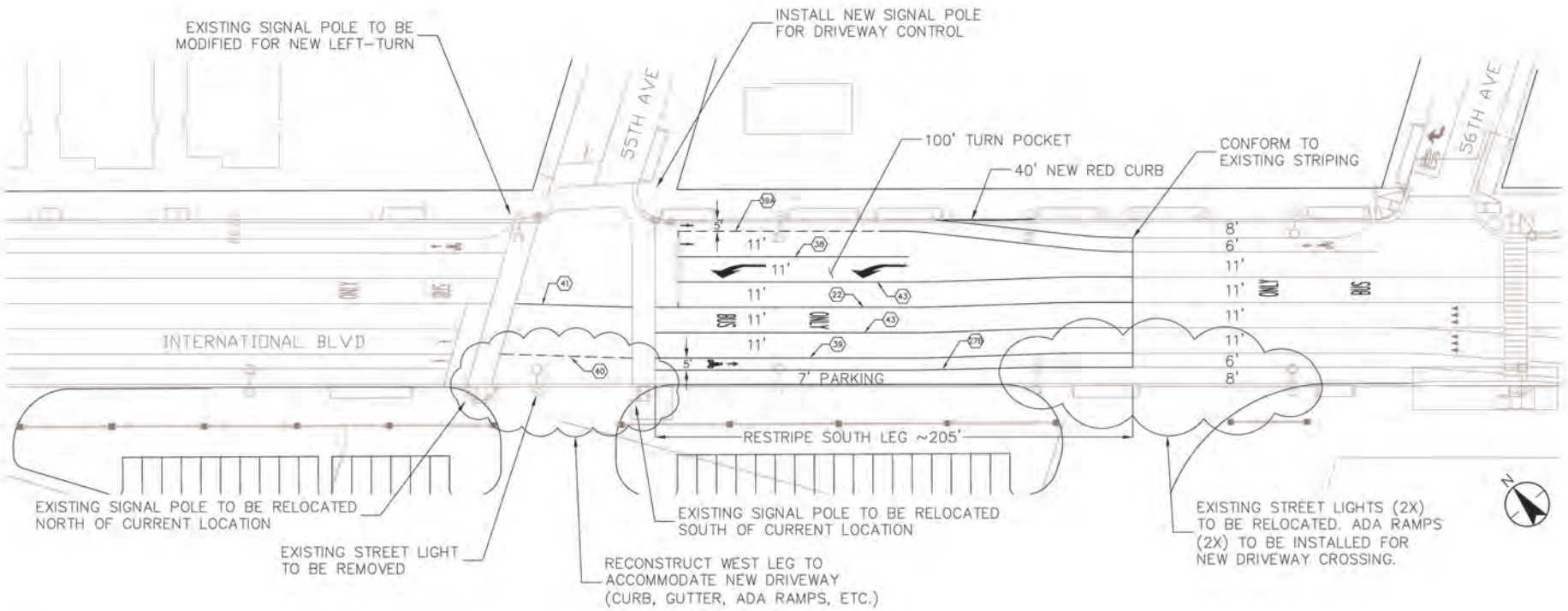


Figure 3-12
Proposed 55th Avenue Signal Modifications

A variant to the project, referred to as the San Leandro Street access variant ("access variant"), is also being considered and evaluated in this EIR. The access variant would include the same remediation and warehouse design and development as the project. However, as shown on Figure 3-13, the project site would be expanded to include leased Union Pacific right-of-way along the southwestern site boundary sufficient to allow project-related truck traffic to access the site to and from San Leandro Street via 54th Avenue. Implementation of the access variant would also require use of a small (0.07 acre) industrial site fronting on 54th Avenue zoned CIX-2. The analysis of the access variant in this EIR assumes that all project-related truck traffic would use the San Leandro Street access and automobile and light trucks would use the International Boulevard access. The 12th Street access would only be used as an emergency access under this variant. A manned security and access gate would control trucks leaving the site at San Leandro Street to increase safety and reduce potential conflicts with the active Union Pacific Railroad (UPRR) railroad line. The turning movements for trucks to and from the site to access San Leandro Street is shown on Figure 3-13.

3. Grading, Drainage, Utilities and Landscaping

A preliminary grading and drainage plan for the site is shown in Figures 3-14a and 3-14b. As shown, the building slab and pavement would provide a cap for the site, and the inclusion of a vapor intrusion mitigation system would be constructed as described above. The proposed vapor intrusion mitigation system abatement equipment and the vapor discharge point would be located in the southwestern portion of the site as shown on Figure 3-5.

New underground water, wastewater, energy and telecommunication utilities would be placed within clean corridors in the site to protect construction workers and employees at the site. Figures 3-15a and 3-15b shows the location of underground utilities on the site.

To control releases of potentially contaminated water from the site during the demolition, remediation and construction phases of the project, a Construction Storm Water Pollution Prevention Plan has been developed and is included in Appendix M of the RDIP Addendum.[24] The erosion control plan is shown in Figure 3-16. As stated above the existing stormwater collection system would be demolished and a new drainage system will be constructed as shown on Figures 3-15a and 3-15b. The need for filtering stormwater to comply with low-impact development requirements and/or based on stormwater and sediment sampling after redevelopment, will be determined based on post-development stormwater and sediment sampling of the storm drain and City, regional and State requirements. The ongoing and required groundwater extraction, monitoring and treatment will continue after site redevelopment. A landscape plan that complies with all drainage and buffering requirements has been proposed and is shown in Figures 3-17a and 3-17b.

[24] EKI Environment & Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, Appendix M Construction Storm Water Pollution Prevention Plan, October.

All construction worker and employee safety considerations will comply with City and federal Hazardous Waste Operations and Emergency Response (HAZWOPER) standards and regulations for personnel who may contact impacted soil. Additionally, ongoing monitoring and reporting during operation would be overseen by DTSC and USEPA per the updated covenant and would include requirements for any post-redevelopment cap or ground disturbing and/or soil handling activities.

3.4 USE OF THIS EIR

The proposed use, "General Warehousing Storage and Distribution" is a permitted activity under the IG zoning designation, but would require a Conditional Use Permit because a portion of the building extends into the CN-3 Zone, pursuant to Section 17.102.110 of the Planning Code for uses extending into adjacent zones. The project will also require Design Review subject to Category II Demolition Findings due to the site being located within the 57th Avenue Industrial District Area of Primary Importance (API). The City of Oakland will also need to issue permits for demolition, grading, excavation, encroachment, new building construction, landscaping, signage, and plumbing (for abandoning sanitary sewer drains in place).

Other agencies will also have regulatory oversight for the remediation and redevelopment of the project including but not limited to:

- USEPA: approval and oversight of the TSCA Application and RDIP Addendum.
- DTSC: approval and oversight of the RDIP Addendum.
- State Water Resources Control Board (SWRCB): filing a notice of intent (NOI) under the Construction Activities Storm Water General Permit (General Permit) Order No. 2009-0009-DWQ, as amended.
- California Department of Transportation (Caltrans): approval of encroachment permit for International Boulevard/SR 185. California Occupational Safety and Health Administration (Cal/OSHA): approval of excavation permit.
- Alameda County Public Works Agency: approval of a well destruction/drilling permit.
- Bay Area Air Quality Management District (BAAQMD): Soil Excavation Notification, along with VIMS permits (if activated) of Authority to Construct and Permit to Operate.
- Regional Water Quality Control Board (Water Board) and East Bay Municipal Utility District (EBMUD): permit for discharge of groundwater from excavation dewatering or surface water from on-site accumulation (if needed). Water could be discharged to the sanitary sewer under permit from EBMUD or to the storm drain under permit from the Water Board.

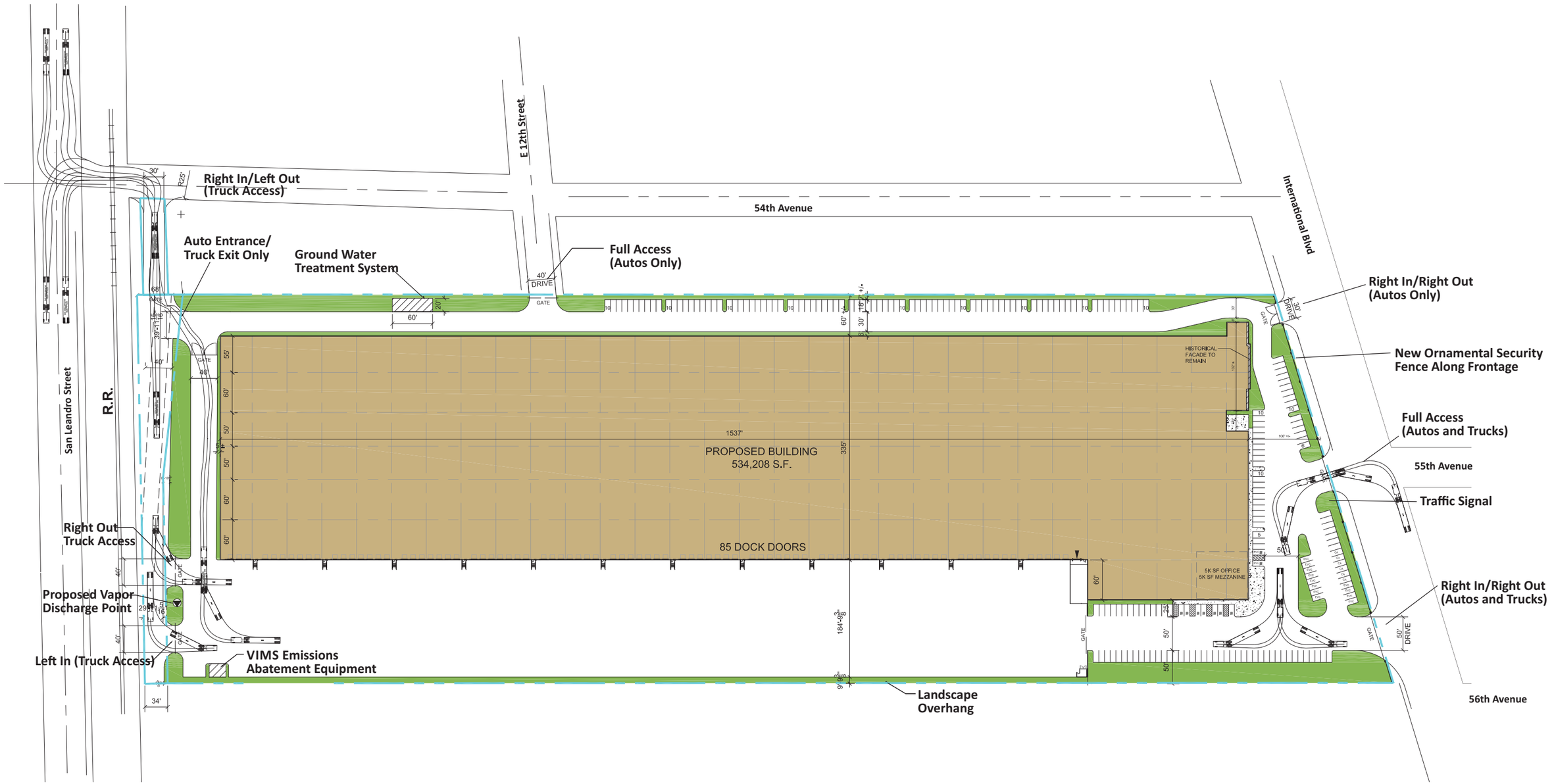


Figure 3-13
San Leandro Street Access Variant

0 150 Feet

BASELINE ENVIRONMENTAL CONSULTING

Sources: HERDMAN Architecture + Design, H-A+D JOB NO: 17-2096, October 23, 2019

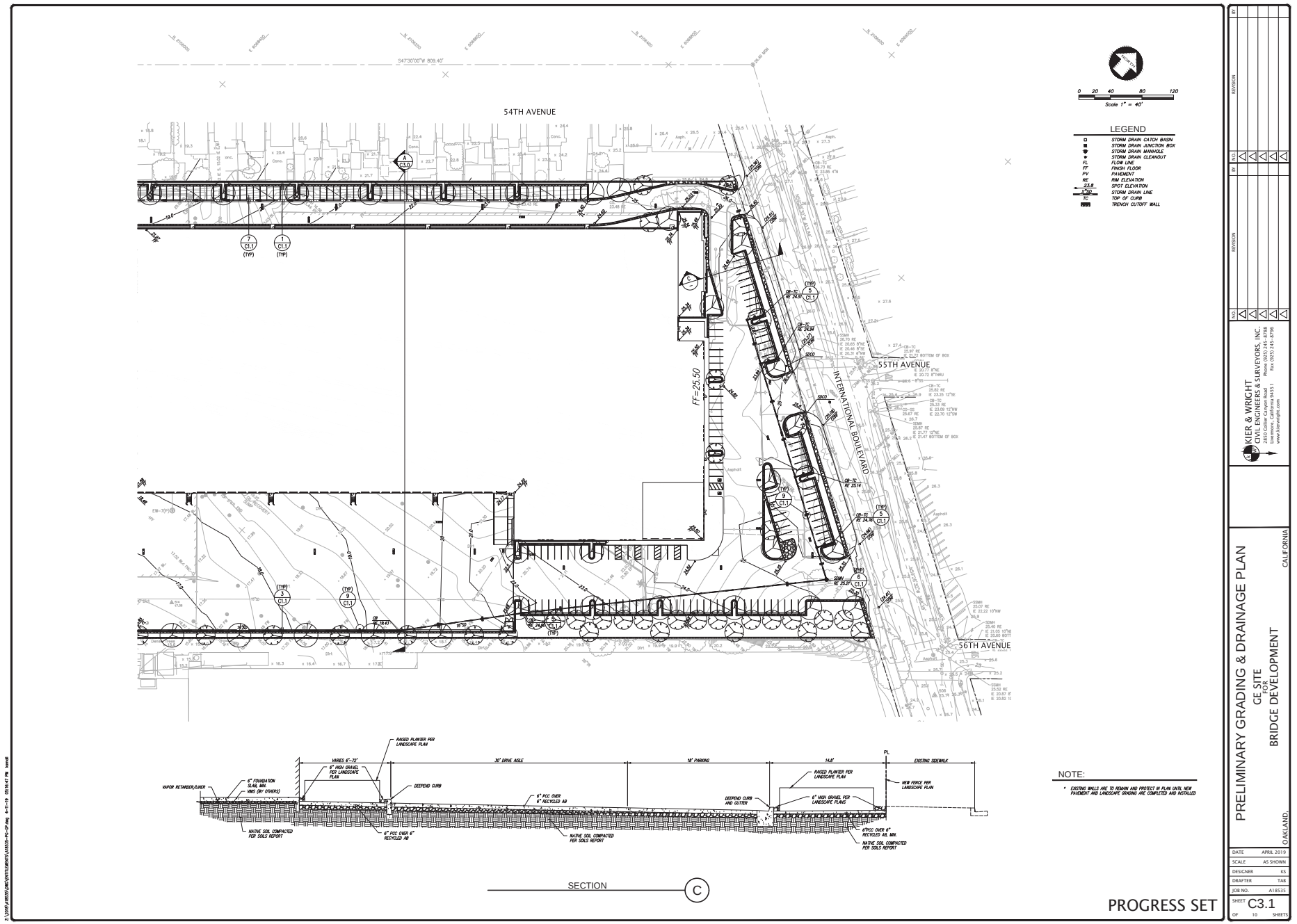


Figure 3-14a
Preliminary Grading and Drainage Plan

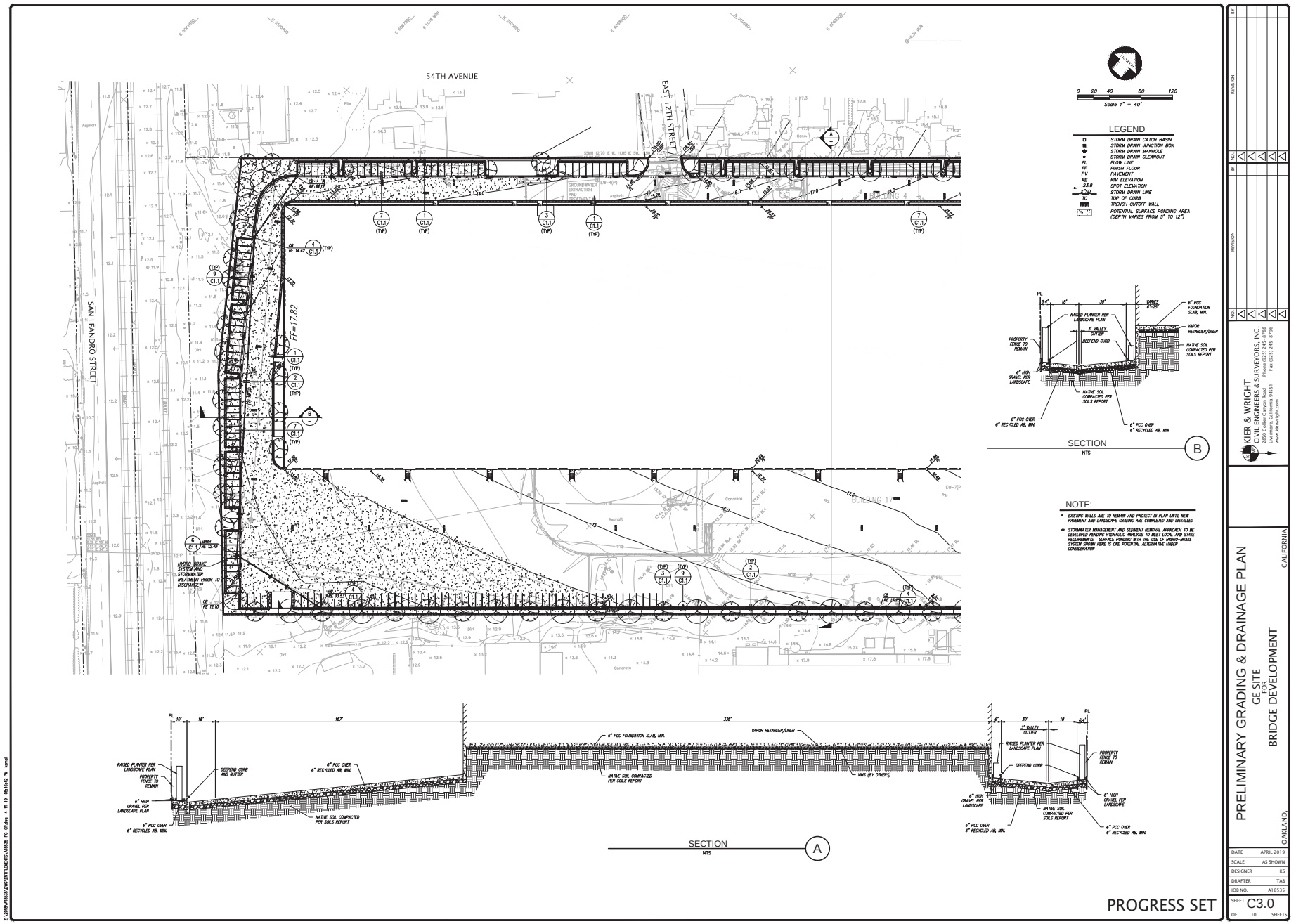


Figure 3-14b
Preliminary Grading and Drainage Plan

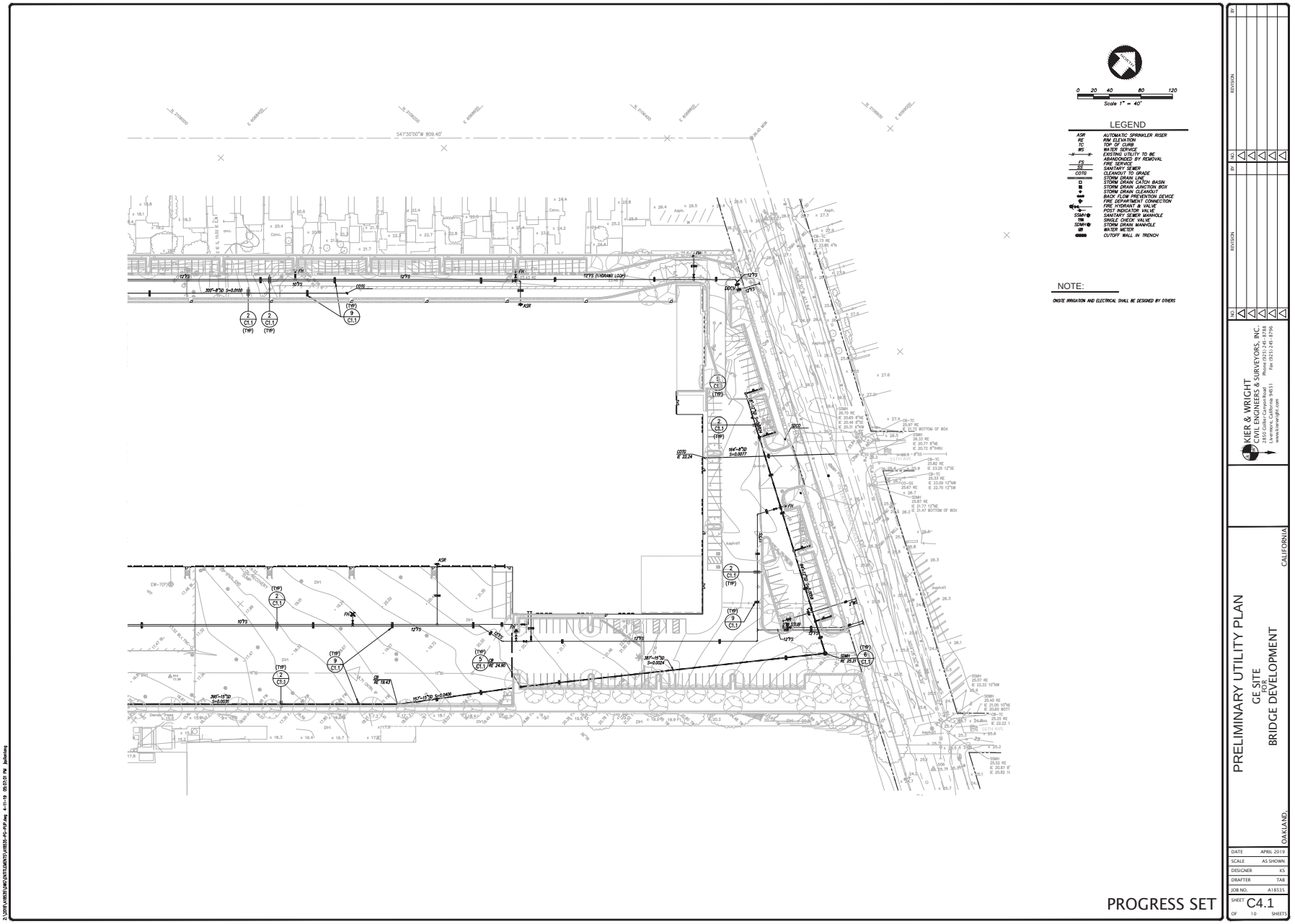


Figure 3-15a
Preliminary Utility Plan

GE Site Remediation and Redevelopment Project EIR
Sources: KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC., 4-19

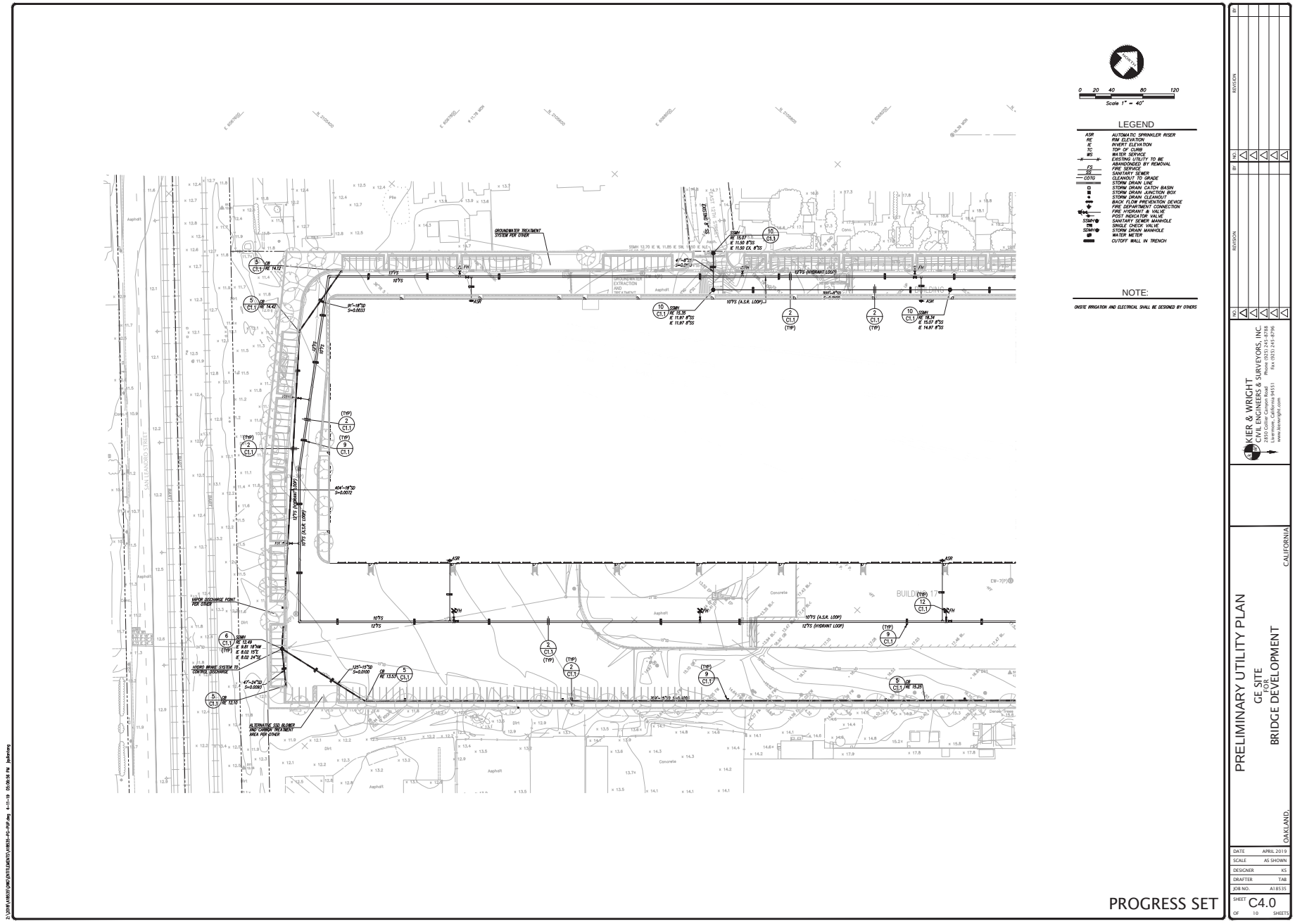


Figure 3-15b
Preliminary Utility Plan

GE Site Remediation and Redevelopment Project EIR
Sources: KIER & WRIGHT CIVIL ENGINEERS & SURVEYORS, INC., 4-19

BASELINE ENVIRONMENTAL CONSULTING

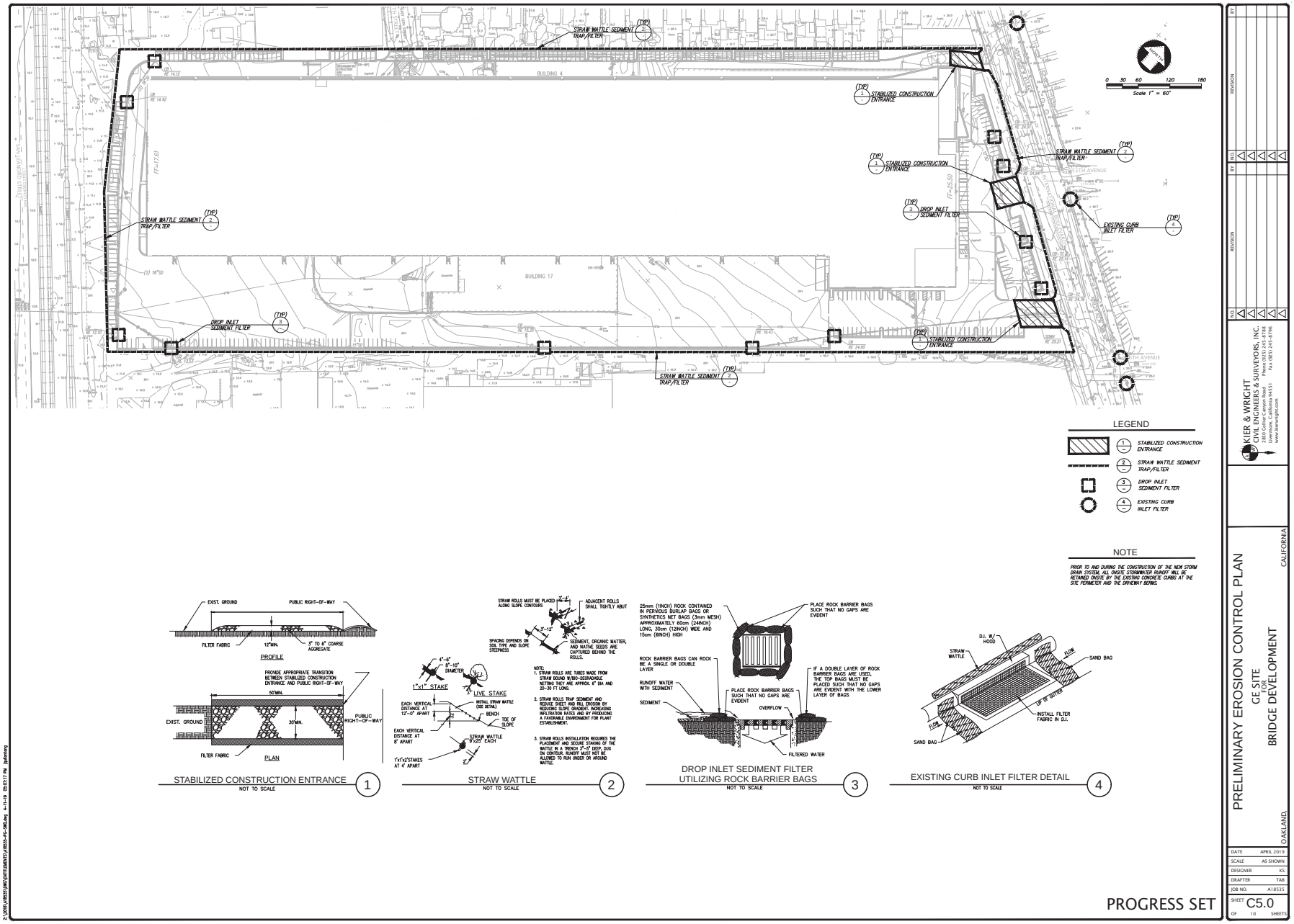
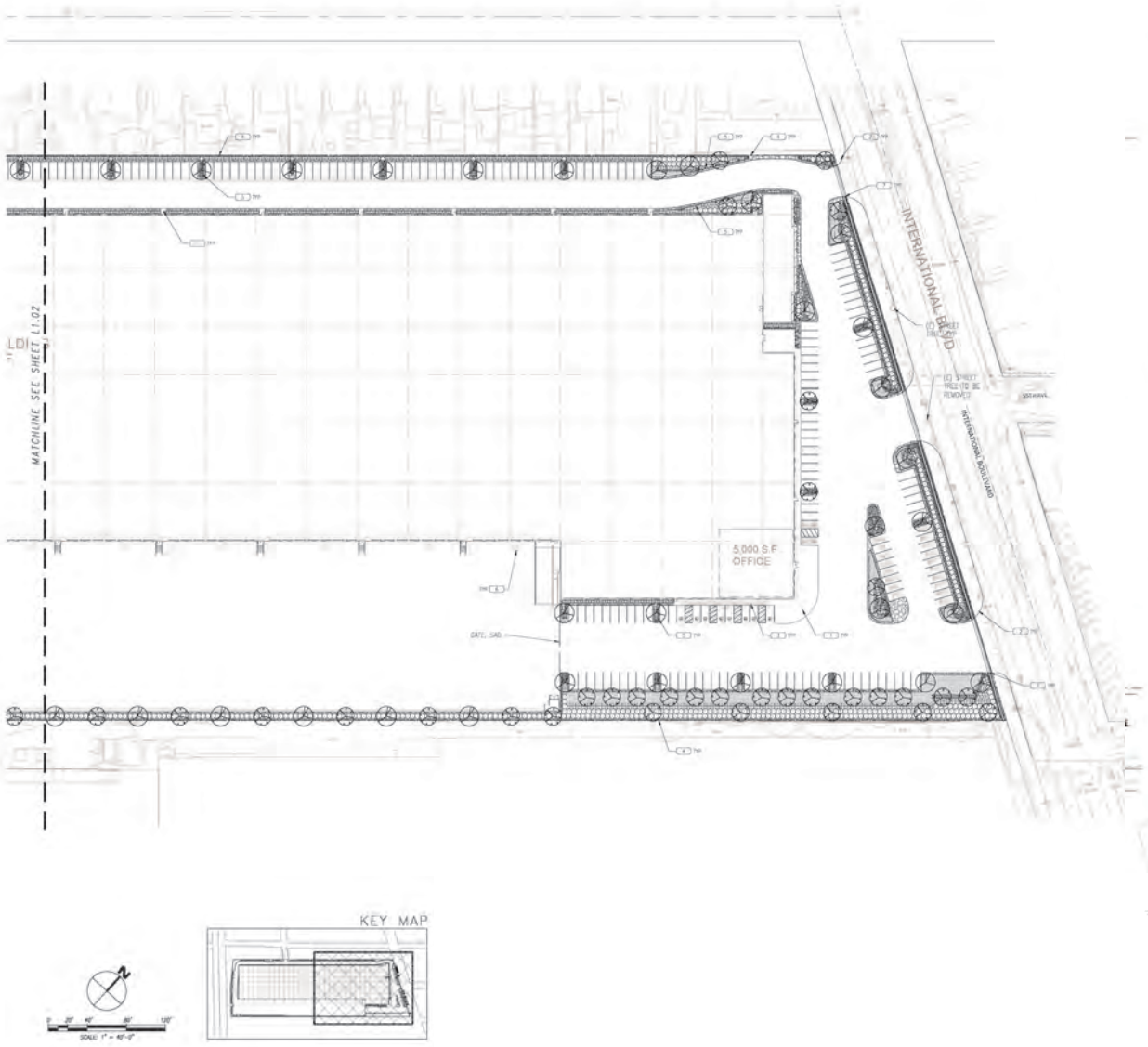


Figure 3-16
Preliminary Erosion Control Plan



LEGEND

KEY	DESCRIPTION	DETAIL
1	CONCRETE PAVING & CURB	SCD
2	CONCRETE SIDEWALK & CURB CUT	SCD
3	CURB RAMP AND TRUNCATED DOMES	SCD
4	PERIMETER GOOD NEIGHBOR FENCE	–
5	PLANTER WALL	–
6	SITE UTILITIES	SAD, SCD
7	WALL & FENCE ALONG INTERNATIONAL BLVD.	SAD

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	WTR USE	HEIGHT X SPREAD
TREES						
	ARBUTUS UNEDO	STRAWBERRY TREE	24" BOX	PER PLAN	L	18' X 18'
	LOPHOSTEMON CONFERTUS	BRISBANE BOX	24" BOX	PER PLAN	M	25' X 20'
LARGE SHRUBS						
	BACCHARIS P. CONSANGUINEA	COYOTE BRUSH	5 GAL	5'-0" OC	L	
	CERCIS OCCIDENTALIS	WESTERN REDBUD	5 GAL	6'-0" OC	VL	
	RHAMNUS CALIFORNICA 'EVE CASE'	COFFEEBERRY	5 GAL	6'-0" OC	L	
MEDIUM SHRUBS						
	CHONDROPETALUM TECTORUM	CAPE RUSH	5 GAL	3'-0" OC	L	
	DIETES IRIDIOIDES 'JOHN'S RUNNER'	FORTNIGHT LILY	5 GAL	3'-0" OC	L	
	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL	3'-0" OC	L	
	PITTOSPORUM T. 'WHEELER'S DWARF'	DWARF MOCK ORANGE	5 GAL	4'-0" OC	L	
	RHAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORNE	5 GAL	4'-0" OC	L	
SMALL SHRUBS						
	ANIGOZANTHOS 'BUSH RANGER'	KANGAROO PAW	5 GAL	2'-6" OC	L	
	BULBINE FRUTESCENS	STALKED BULBINE	1 GAL	2'-6" OC	L	
	EPILOBIUM CANUM	CALIFORNIA FUCHSIA	1 GAL	3'-0" OC	L	
	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	3'-0" OC	L	
	NANDINA DOMESTICA 'LEMON LIME'	HEAVENLY BAMBOO	5 GAL	3'-0" OC	L	
GROUNDCOVERS						
	ARCTOSTAPHYLOS UVA-URSI	MANZANITA	1 GAL	5'-0" OC	L	
	BERBERIS AQUIFOLIUM 'REPENS'	CREEPING BARBERRY	1 GAL	5'-0" OC	L	
	COTONEASTER D. 'CORAL BEAUTY'	COTONEASTER	1 GAL	5'-0" OC	L	
	SALVIA LEUCOPHYLLA 'POINT SAL'	PURPLE SAGE	1 GAL	6'-0" OC	L	
GRAVEL ONLY AREA						
	GRAVEL LAYER	–	–	–	–	

Figure 3-17a
Conceptual Landscape Plan

GE Site Remediation and Redevelopment Project EIR
Sources: Jett Landscape Architecture + Design, 4-19

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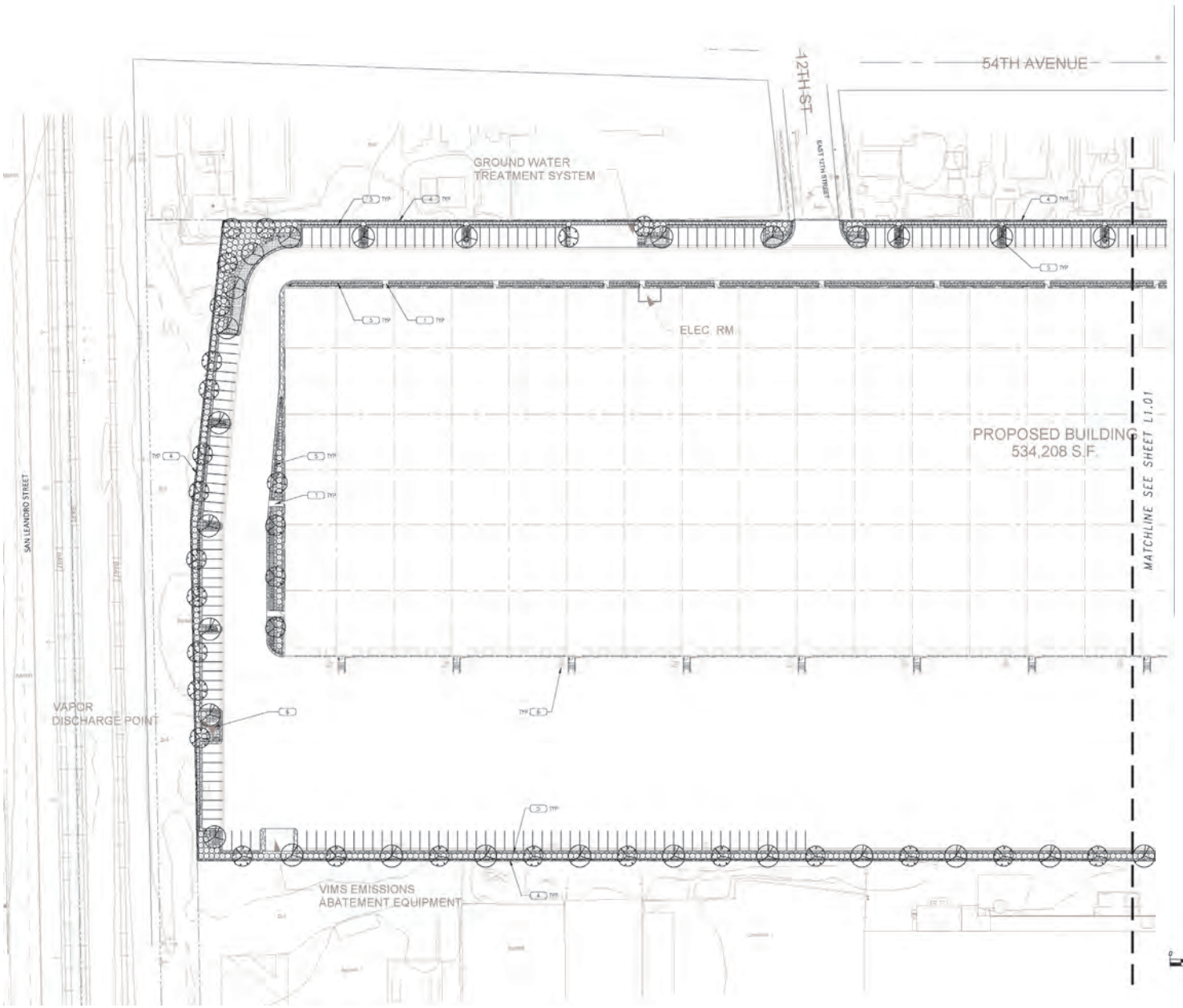

LEGEND

KEY	DESCRIPTION	DETAIL
1	CONCRETE PAVING & CURB	SCD
2	CONCRETE SIDEWALK & CURB CUT	SCD
3	CURB RAMP AND TRUNCATED DOMES	SCD
4	PERIMETER GOOD NEIGHBOR FENCE	–
5	PLANTER WALL	–
6	SITE UTILITIES	SAD, SCD
7	WALL & FENCE ALONG INTERNATIONAL BLVD.	SAD

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	WTR USE	HEIGHT X SPREAD
TREES						
	ARBUTUS UNEDO	STRAWBERRY TREE	24" BOX	PER PLAN	L	18' X 18'
	LOPHOSTEMON CONFERTUS	BRISBANE BOX	24" BOX	PER PLAN	M	25' X 20'
LARGE SHRUBS						
	BACCHARIS P. CONSANGUINEA	COYOTE BRUSH	5 GAL	5'–0" OC	L	
	CERCIS OCCIDENTALIS	WESTERN REDBUD	5 GAL	6'–0" OC	VL	
	RHAMNUS CALIFORNICA 'EVE CASE'	COFFEEBERRY	5 GAL	6'–0" OC	L	
MEDIUM SHRUBS						
	CHONDROPETALUM TECTORUM	CAPE RUSH	5 GAL	3'–0" OC	L	
	DIETES IRIDIOIDES 'JOHN'S RUNNER'	FORTNIGHT LILY	5 GAL	3'–0" OC	L	
	MUHLENBERGIA RIGENS	DEER GRASS	5 GAL	3'–0" OC	L	
	PITTOSPORUM T. 'WHEELER'S DWARF'	DWARF MOCK ORANGE	5 GAL	4'–0" OC	L	
	RHAPHIOLEPIS INDICA 'CLARA'	INDIA HAWTHORNE	5 GAL	4'–0" OC	L	
SMALL SHRUBS						
	ANIGOZANTHOS 'BUSH RANGER'	KANGAROO PAW	5 GAL	2'–6" OC	L	
	BULBINE FRUITESCENS	STALKED BULBINE	1 GAL	2'–6" OC	L	
	EPILOBIUM CANUM	CALIFORNIA FUCHSIA	1 GAL	3'–0" OC	L	
	LOMANDRA LONGIFOLIA 'BREEZE'	DWARF MAT RUSH	1 GAL	3'–0" OC	L	
	NANDINA DOMESTICA 'LEMON LIME'	HEAVENLY BAMBOO	5 GAL	3'–0" OC	L	
GROUNDCOVERS						
	ARCTOSTAPHYLOS UVA–URSI	MANZANITA	1 GAL	5'–0" OC	L	
	BERBERIS AQUIFOLIUM 'REPENS'	CREEPING BARBERRY	1 GAL	5'–0" OC	L	
	COTONEASTER D. 'CORAL BEAUTY'	COTONEASTER	1 GAL	5'–0" OC	L	
	SALVIA LEUCOPHYLLA 'POINT SAL'	PURPLE SAGE	1 GAL	6'–0" OC	L	
GRAVEL ONLY AREA						
	GRAVEL LAYER	–	–	–	–	

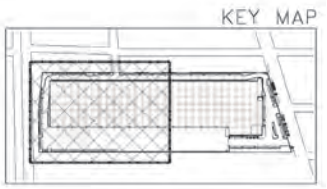

Figure 3-17b
Conceptual Landscape Plan

GE Site Remediation and Redevelopment Project EIR
Sources: Jett LANDSCAPE ARCHITECTURE + DESIGN, CRLA #3335, 4-19

BASELINE ENVIRONMENTAL CONSULTING

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4.0 SETTING, IMPACTS, STANDARD CONDITIONS OF APPROVAL AND MITIGATION MEASURES

This chapter contains an analysis of each potentially significant environmental issue topic that has been identified for the GE Site Remediation and Redevelopment Project (proposed project). The topical sections of this chapter describe the environmental setting of the project as it relates to each specific environmental topic and the impacts that are expected to result from implementation of the proposed project. Standard Conditions of Approval (SCAs) and/or mitigation measures are applied to reduce potential impacts, where appropriate.

ENVIRONMENTAL TOPICS INCLUDED IN THE EIR

The following environmental topics are addressed in this chapter:

- 4.1 Cultural Resources and Tribal Cultural Resources
- 4.2 Hazards and Hazardous Materials
- 4.3 Transportation and Circulation
- 4.4 Air Quality
- 4.5 Greenhouse Gas Emissions and Energy
- 4.6 Noise and Groundborne Vibration
- 4.7 Geology, Soils and Seismicity
- 4.8 Hydrology and Water Quality

Environmental topics that were identified as having no or a less-than-significant impact after application of the City's SCAs are discussed in Chapter 6.0, Other CEQA Considerations under Effects Found Not to Be Significant and include: aesthetics, shadow and wind; agricultural and forestry resources; biological resources; land use and planning; mineral resources; population and housing; public services; recreation; and utilities and service systems.

FORMAT OF ENVIRONMENTAL TOPIC SECTIONS

Each environmental topic considered in this chapter comprises two primary sections: (1) setting, and (2) impacts to address construction, project operation and cumulative conditions, SCAs, and mitigation measures. An overview of the general organization and the information provided in the two sections is provided below:

Setting. The setting section for each environmental topic generally provides a description of the physical setting for the proposed project site and its surroundings at the beginning of the environmental review process. An overview of regulatory considerations that are applicable to the specific environmental topic is also provided.

Impacts, Standard Conditions of Approval and Mitigation Measures. The impacts, SCAs, and mitigation measures section for each environmental topic presents a discussion of the

impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, establishing the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts from the proposed project, applicable Standard Conditions of Approval, and mitigation measures, if required. The impacts of the proposed project are organized into separate categories based on their significance according to the criteria listed in each topical section: less-than-significant impacts, which do not require mitigation measures, and significant impacts, which require mitigation measures, and significant and unavoidable impacts for which no feasible mitigation measures are available to reduce the impact to a less-than-significant level.

Impacts are numbered and shown in **bold** type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topic and begin with an acronymic reference to the impact section (e.g., CULT). The following symbols are used for individual topics:

CULT: Cultural Resources and Tribal Cultural Resources
HAZ: Hazards and Hazardous Materials
TRA: Transportation and Circulation
AIR: Air Quality
GHG: Greenhouse Gas Emissions and Energy
NOI: Noise and Groundborne Vibration
GEO: Geology, Soils and Seismicity
HYD: Hydrology and Water Quality

The following notations are provided after each identified significant impact and mitigation measure:

LTS: Less than Significant
S: Significant
SU: Significant and Unavoidable

These notations are found following each impact and each mitigation measure to identify the significance of impacts before and after mitigation.

CITY OF OAKLAND CEQA THRESHOLDS OF SIGNIFICANCE

Under the California Environmental Quality Act (CEQA), a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant.

The criteria of significance utilized in this EIR are from the City of Oakland CEQA Thresholds of Significance Guidelines.[1] To help clarify and provide consistent analysis and decision-making in the environmental review process in the City of Oakland, the City has established the CEQA Thresholds of Significance Guidelines (which have been in general use since at least 2002). The thresholds are offered as guidance in preparing environmental review documents. The City uses these thresholds unless the location of the project or other unique factors warrants the use of different thresholds. The thresholds are intended to implement provisions of the CEQA Guidelines for determining the significance of environmental effects, including Sections 15064, 15064.4, 15064.5, 15064.7, 15065, 15382, 15382 and Appendix G (as revised as of December 2018), and form the basis of the City's Initial Study and Environmental Review Checklist.

The thresholds are intended to be used in conjunction with the City's Uniformly Applied Development Standards and Conditions of Approval (see discussion below),[2] which are incorporated into projects as Standard Conditions of Approval on a Citywide basis.

CITY OF OAKLAND STANDARD CONDITIONS OF APPROVAL

The City's Standard Conditions of Approval and Uniformly Applied Development Standards (SCAs) are incorporated into projects as conditions of approval regardless of a project's environmental determination. As applicable, the SCAs are adopted as requirements of an individual project when it is approved by the City and are designed to, and will, substantially mitigate environmental effects. For the proposed project, all of the relevant standard conditions have been incorporated as part of the project and are identified in each environmental topic section within the EIR and in summary Tables 2-1 and 2-2.

In reviewing project applications, the City determines which SCAs are applicable depending on the specific characteristics of the project type and/or project site.

Because the SCAs are mandatory City requirements, the impact analysis assumes that these will be imposed and implemented as part of a project. If an SCA would reduce a potentially significant impact to a less-than-significant level, the impact will be determined to be less than significant, and no mitigation measure would need to be imposed.

The SCAs incorporate development policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection Ordinance, Stormwater Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects.

[1] Oakland, City of, 2016. CEQA Thresholds of Significance Guidelines. Revised and updated October 17, 2016.

[2] Oakland, City of, 2018. Standard Conditions of Approval. Revised November 2018.

The existing buildings and site contain hazardous chemicals in the soil and groundwater (including PCBs) and have been undergoing remediation and monitoring under the oversight of the Department of Toxic Substances Control (DTSC) and the United States Environmental Protection Agency (USEPA). Consistent with City of Oakland SCAs, the ongoing monitoring of site conditions and proposed project demolition, remediation and redevelopment activities will continue to be undertaken per the requirements and oversight of DTSC and USEPA.

CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative 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 that an EIR evaluate potential environmental impacts when the project's incremental effect is cumulatively considerable. Section 15065(a)(3) of the CEQA Guidelines defines "cumulatively considerable" to mean that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts.

The methodology used for assessing cumulative impacts typically varies depending on the specific topic being analyzed. For example, the geographic and temporal (time-related) parameters related to a cumulative analysis of air quality impacts are not necessarily the same as those for a cumulative analysis of noise impacts because the geographic area that relates to air quality is much larger and regional in character than the geographic area that could be affected by potential noise impacts from a proposed project and other cumulative projects/growth. The cumulative noise impacts are more localized than air quality and transportation impacts, which are more regional in nature. Other environmental topics that are more site specific in nature include hazardous materials and geology and soils. Accordingly, the parameters of the respective cumulative analyses in this document are determined by the degree to which impacts from this project are likely to occur in combination with other development projects.

Generally, the City's Major Projects list was considered to determine past, present, existing, approved, pending and reasonably foreseeable future projects in the vicinity of the proposed project to inform development of a baseline for cumulative analysis. The City determined that the Coliseum Area Specific Plan, adopted in 2015, covers future projects and was the only major project in the surrounding vicinity to be taken into consideration for the majority of topics.

In regards to cumulative effects on cultural resources, aside from the proposed project, there are no past, current, or reasonably foreseeable projects under review by the City that may impact historical resources in the vicinity of the project site or Area of Project Effect (APE) defined in the Cultural Resources Study prepared by LSA Associates, Inc. in 2019 and included

in Appendix D.[3] However, other projects throughout the City contribute to the ongoing demolition of historical resources, and therefore implementation of the project is anticipated to have a significant cumulative impact to industrial/warehouse/manufacturing historical resources in the City. City-wide projects that were considered for the purpose of this analysis include the following:

- 9th Avenue Terminal at Brooklyn Basin (foot of 9th Avenue): 1929, add. 1951, 4-acre Port of Oakland cargo warehouse on pier, approximately 90 percent demolition proposed;
- Oakland Army Base: 1941-45 and later, approximately 100 buildings associated with the Army Base (warehouses, residential, administrative) on approximately 400 acres, all proposed for demolition;
- Southern Pacific Yards and Shops: c.1874-1918, approximately 14 railroad maintenance, repair, and manufacturing buildings demolished in the 1990s for construction of the Interstate 880 freeway. The remaining Car Paint Shop-Diesel Shop (1874, add. c. 1901 and 1942) at the Union Pacific rail yards was demolished in 2010;
- 428 Alice Street (Mutual Grocery Co. warehouse): 1931-32, contributor to Waterfront Warehouse District, demolished in 2004 for condominium project;
- 2825 International Boulevard (Montgomery Ward store and warehouse building): 1923-26, approximately 900,000-square-foot 8-story building on 8-acre site, demolished in 2001;
- Naval Supply Center (site now Middle Harbor Park): 1940-45, approximately 118 buildings (warehouses, residential, administrative), 8.7 million square foot floor area on 541 acres, all demolished;
- 921 98th Avenue at San Leandro Street (Fleischman Yeast factory): 1934 factory with additions, 200,000 square-foot building(s) on 8-acre site, demolished in 2004;
- 1374 5th Street (Red Star Yeast-Consumers Yeast and Vinegar Works): 1907 factory with many additions, demolished; and
- 180 4th Street (S&W Fine Foods Inc.): 1937 warehouse with a 1946 addition, contributing resource to the Oakland Waterfront Warehouse District. To be demolished as part of the 4th & Madison project.

[3] LSA Associates, Inc., 2019. Draft Cultural Resources Study General Electric Remediation and Reuse Project, Oakland, Alameda County, California, April.

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4.1 CULTURAL RESOURCES AND TRIBAL CULTURAL RESOURCES

This section provides an analysis of cultural resources, tribal cultural resources and paleontological resources within and affected by the proposed GE Site Remediation and Redevelopment Project (proposed project) and the San Leandro Street access variant. Existing conditions concerning cultural resources as well as potential impacts that could occur to those resources from project implementation are described. Cultural resources include historical buildings and structures, archaeological deposits, paleontological resources (fossils), and human remains. This section is primarily based on a cultural resources study (included in Appendix D) undertaken for the project applicant by LSA Associates Inc. (LSA) in response to the requirement for federal permitting and in compliance with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800),[1] and previous studies undertaken on the project site. The U.S. Environmental Protection Agency (USEPA) is the federal lead agency for Section 106 compliance and a responsible agency for this analysis.

A. Setting

The setting of the proposed project was documented by records searches at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS); a review of the City's Oakland Cultural Heritage Survey (OCHS) property ratings; a literature review of published and online sources; consultation with local Native American tribes; and a field survey by an architectural historian. The results of these tasks are summarized below.

1. Methods and Outreach

This section summarizes the methods used to identify the baseline conditions for cultural resources and presents the results of the background research.

a. Cultural Resources Records Searches. A records search of the project site was conducted by LSA at the NWIC on August 1, 2011 and again on October 14, 2016. The NWIC, an affiliate of the State of California Office of Historic Preservation (OHP), is the official State repository of cultural resources records and reports for Alameda County. A records search was conducted at the OCHS database on August 9, 2011. The OCHS includes information obtained from a historical survey of every visible building in the City and provides planning-related assistance for projects that may affect historic built-environment resources for the City's Planning and Building Department.

The records search also included a review of the following federal and State cultural resource inventories:

- California Inventory of Historic Resources (California Office of Historic Preservation, 1976);

[1] LSA Associates Inc., 2019. Cultural Resources Study General Electric Remediation and Reuse Project, Oakland, Alameda County, California, April.

- Five Views: An Ethnic Historic Site Survey for California (California Office of Historic Preservation, 1988);
- California Points of Historical Interest (California Office of Historic Preservation, 1992);
- California Historical Landmarks (California Office of Historic Preservation, 1996); and
- Directory of Properties in the Historic Property Data File for Alameda County (California Office of Historic Preservation, 2012).[2]

b. Historical Organization Outreach. As part of their Section 106 analysis, LSA sent a letter on October 19, 2016, briefly describing the project and a map depicting the project site, to the Oakland Heritage Alliance (OHA) requesting information or concerns regarding historical sites on and in the vicinity of the project site. LSA included copies of an earlier consultation letter dated May 24, 2012, as well as a copy of OHA's comments to the City dated August 31, 2012 in regards to the previous project proposed for the GE site (demolition of all buildings and capping the site). LSA sent a follow-up email to OHA to see if they had received LSA's letter and if the organization had any questions or concerns regarding the project. No response has been received by LSA as of April 2019. However, OHA did submit comments in response to the December 21, 2018 Notice of Preparation for the proposed remediation and redevelopment project in a letter dated January 14, 2019 to the City of Oakland Planning and Building Department regarding the proposed scope of this EIR (see Appendix A).

c. Native American Tribal Consultation. As part of their preparation of the Cultural Resources Report, in November 2018, LSA contacted the Native American Heritage Commission (NAHC) to request a search of that agency's Sacred Lands File and to obtain a list of local Native American tribes that may have information or concerns regarding cultural resources in the project area pursuant to Assembly Bill 52 (AB 52). The NAHC is a State agency that maintains the Sacred Lands File, an official list of sites that are of cultural and religious importance to California Native American tribes. All correspondence is included in Appendix D: Correspondence with Native American Organizations and Tribes of the Cultural Resources Report.

On December 5, 2018 the NAHC responded to LSA via a letter that stated, "A records search of the…Sacred Lands File was completed for the area of potential effect (APE)…with negative results."[3] Included with the NAHC's response letter was a list of eight local tribal representatives that may have information regarding cultural resources in the APE. On January 2, 2019, all tribal

[2] The Directory includes the listings of the NRHP, National Historic Landmarks, the CRHR, California Historical Landmarks, and California Points of Historical Interest.

[3] Because LSA prepared the 2019 Cultural Resources Study as the technical basis for completing the NEPA Environmental Assessment being prepared for USEPA consistent with 36 CFR 800.2(a)(c), they identified a direct and indirect Area of Potential Affects (APE). An APE is the geographic area or areas within which a project may directly or indirectly cause alterations in the character or use of historic properties. Identification of an APE is not required by CEQA.

representatives identified by the NAHC were contacted via letters sent by email and regular mail. The letters included a brief description of the project and project site, and a map indicating the project location. The letters requested that the tribe respond if it has information or concerns regarding cultural resources in the APE.

d. Historical Resource Evaluation, Map and Site Visit. A historical resource survey and evaluation of the architectural resources on and in the vicinity of the project site was conducted by an LSA architectural historian, who meets the Secretary of the Interior's Professional Qualifications Standards, in August 10, 2011 and again on November 13, 2018 to assess the conditions of the buildings. Regional geologic maps were reviewed to assess the potential for buried pre-contact archaeological deposits and fossil-bearing deposits underlying the project site and vicinity. Historical maps also were reviewed to assess the potential for subsurface historic-period archaeological deposits underlying the project site and vicinity.

2. Outreach and Research Results

This section presents the results of the outreach and background research for cultural resources.

a. NWIC Record Search Results. The NWIC records searches indicate that two of the buildings within the project site (Buildings #1 and #2) are listed in the California Office of Historic Preservation's Directory of Properties and are components of the 57th Avenue Industrial District Area of Primary Importance (API).[4] The supplemental NWIC records search also indicated that Building #1 is individually eligible for listing in the NRHP and Oakland Register. Figure 4.1-1 is an aerial of the project site and shows existing buildings as well as the location of the 57th Avenue Industrial District API. Figures 4.1-2a and 4.1-2b provide photographs of the site and Building #1 and Building #2. The Directory of Properties is a list of properties that have been identified and evaluated for their historical significance by the OHP under either: (1) the National Historic Preservation Act (i.e., Section 106 review); (2) the California Public Resources Code (PRC) (see PRC Sections 5020.1(k) and 5024.1(g)); (3) federal tax credit certifications (i.e., Mills Act); or (4) resources considered for official listing in either the California Register of Historical Resources, the National Register of Historic Places, California State Landmarks, or as a State Point of Historical Interest. Each property listed in the Directory of Properties has been assigned a California Historical Resource Status Code (Status Code), which is assigned by the OHP to indicate a property's eligibility for listing in either a local, State, or federal historical register. No cultural resources studies of the project site were on file at the NWIC as of October 2016.

[4] Building #6, the General Electric Wire Drawing Building, is also listed in the Directory of Properties and was assigned a Status Code of "3D" by the OHP. This building, however, was demolished in the late 1990s. No further discussion of Building #6 is provided. The supplemental records search did not indicate that the status of this building had changed. A 2011 field survey by an LSA architectural historian confirmed that this building was removed.

Legend

(1) Building Number

Figure 4.1-1
Existing Site Buildings

0 450 Feet

GE Site Remediation and Redevelopment Project EIR

Sources: GOOGLE EARTH, 10/30/15; LSA , 2017.

BASELINE ENVIRONMENTAL CONSULTING

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Street-facing façade, General Electric Company Oakland Works (Building #1).

Interior view of rear, factory portion of Building #1.

Figure 4.1-2a
Site Photographs

GE Site Remediation and Redevelopment Project EIR
Source: LSA Associates, Inc., 2017.

BASELINE ENVIRONMENTAL CONSULTING

East and south-facing facades of General Electric Company Insulation Department (Building #2).

Railroad spur with Building #2 at right, rear of Building #1 at center right, and Building #4 at left.

Figure 4.1-2b
Site Photographs

GE Site Remediation and Redevelopment Project EIR
Source: LSA Associates, Inc., 2017.

BASELINE ENVIRONMENTAL CONSULTING

The NWIC records searches yielded the following information in regards to historic architectural resources that are further described in Table 4.1-1:

- Building #1, the GE Oakland Works Building, was assigned a Status Code of "2S2" in March 2006, indicating that it is an individual property determined eligible for the NRHP by consensus through the Section 106 process and is listed in the CRHR.
- Building #2, the GE Insulation Department Building, was assigned a Status Code of "3D" in September 1995, indicating that it appears eligible "as a contributor to a NRHP-eligible district through survey evaluation."
- Building #6, the GE Wire Drawing Building, was assigned a Status Code of "3D" in September 1995, indicating that it appears eligible "as a contributor to a NRHP-eligible district through survey evaluation." However, Building #6 was demolished circa 2000.
- The 57th Avenue Industrial District API was assigned a Status Code of "7R" in February 1997, indicating that the District has been "identified in a reconnaissance level survey: not evaluated."

Table 4.1-1 Architectural Historic Properties on and in the Vicinity of the Project Site

NWIC Resource Identifier	Common Name	Resource Description
P-01-000521	GE Building #1 (GE Oakland Works Building)	Building #1 is a steel-framed industrial building constructed of brick masonry and concrete. Building #1 was built in two phases: a two-story office portion facing International Boulevard/East 14th Street/SR 185 built in 1922, and a rear one-story manufacturing and warehouse space built in 1927. The front, street-facing façade is an example of early-20th century utilitarian Classical Revival inspired industrial architecture. Building #1 is a contributing element to the 57th Avenue Industrial District API (see below).
P-01-000522	GE Building #2 (GE Insulation Department Building)	Building #2 is a steel-framed industrial building constructed of brick masonry and concrete. Building #2 was built in 1936-1937 and consists of a one-story manufacturing and warehouse space. Building #2 is associated with the history of industrial activity within the direct APE. Building #2 is a contributing element to the 57th Avenue Industrial District API (see below).
P-01-000523	GE Building #6 (GE Wire Drawing Building)	Building #6 was a single-story rectangular brick and steel early 20th century utilitarian factory building. It was demolished circa 2000.
P-01-009862	57th Avenue Industrial District	This district consists of 18 buildings, including Buildings #1 and #2, the majority of which date from circa 1910s-1950s – that are characterized as "early 20th century utilitarian, 1920s decorative brick, and Moderne industrial buildings." As described by Betty Marvin, Historic Preservation Planner with the OCHS, this district "is a self-contained strip developed by General Electric, the Austin Company, Stokely, and Mutual Stores in the 1920s as a sort of early industrial park for food, vehicular, and building material plants."

Sources: Oakland Cultural Heritage Survey (OCHS), 1996. Department of Parks and Recreation 523 series Forms (DPR 523) for the 57th Avenue Industrial District. On file, Oakland Cultural Heritage Survey, Oakland, California. Oakland Cultural Heritage Survey (OCHS), 1995. Historic Context: Unreinforced Masonry Buildings in Oakland, 1850-1948, page 36.

b. OCHS Database Search Results. The OCHS database also indicates that the project site is within the 57th Avenue Industrial District API, which is a National Register-eligible district – as defined in the City's Historic Preservation Element of the General Plan.[5] In East Oakland, this API is "the outstanding industrial district."[6] As described by Betty Marvin, Historic Preservation Planner with the OCHS, this API "is a self-contained strip developed by General Electric, the Austin Company, Stokely, and Mutual Stores in the 1920s as a sort of early industrial park for food, vehicular, and building material plants."

The API consists of 18 buildings (including Buildings #1 and #2 on the project site), the majority of which date from circa 1910s to the 1950s, that are characterized as "early 20th century utilitarian, 1920s decorative brick, and Moderne industrial buildings."[7] Characteristic design elements of buildings in the API include one-story, long and narrow plans; stepped parapets; truss roofs; and exteriors with pressed-brick, three-dimensional brickwork, and stucco ornamentation. Of the 18 buildings that comprise the API, OCHS identifies three "notable individual buildings:" the Mutual Stores (Safeway) warehouse and tower at 5701-25 International Boulevard/East 14th Street; the Ferro Enamel plant at 1101 57th Avenue; and Building #1 within the project site.

Buildings #1 and #2 were recorded and evaluated by OCHS during its city-wide unreinforced masonry building survey conducted from 1990 to 1995 and are contributing elements to the 57th Avenue Industrial District API. OCHS has assigned Building #1 a rating of "A1+" indicating that it is a property of "highest importance" and contributor to an API. Building #2 has a rating of "Dc1+" indicating it is a property of "minor importance" which could be a "property of secondary importance" through repair, and a contributor to an API. Both of these buildings are listed in the Oakland Register.

The remaining buildings in the project site and in the direct vicinity have been assigned property ratings as shown on Table 4.1-2 below. As shown most of the buildings are non-contributors to the 57th Avenue Industrial District API.

c. Local Historical Society Consultation Results. In their January 14, 2019 letter to the City of Oakland Planning and Building Department regarding the proposed scope of this EIR, OHA's requests included: (1) provide information regarding the level of contamination of the exterior surfaces of Buildings #1 and #2; (2) study an alternative that retains the front and a portion of the side façade of Building #1; (3) study the change in massing from existing

[5] An API is a historically or visually cohesive area or property group identified by the OCHS which usually contains a high proportion of individual properties with ratings of "C" or higher. City of Oakland, 1994. *Historic Preservation Element*.

[6] Marvin, Betty, 1995:36. Historic Context: Unreinforced Masonry Buildings in Oakland, 1850-1948. Oakland Cultural Heritage Survey.

[7] Oakland Cultural Heritage Survey, 1996. Department of Parks and Recreation 523 series Forms (DPR 523) for the 57th Avenue Industrial District. On file, Oakland Cultural Heritage Survey, Oakland, California. September 30.

Table 4.1-2 OCHS and OHP Ratings for Resources on and in the Vicinity of the Project Site

Resource Name	Date(s) of Construction	OCHS Rating	OHP Rating	Eligible for Historical Register?	Comments
57th Avenue Industrial District API	Various 1910s-1969	API	7R	Yes	API; Buildings #1 and #2 are contributing elements
Building #1	1922, addition 1927	A1+	2S2	Yes	Listed in Oakland Register and California Register of Historic Resources
Building #2	1936-37	Dc1+	3D	Yes	Contributor to API
Building #4	1969	F1-	None	No	Non-contributor to API
Building #8	1973	None	None	No	Non-contributor to API
Building #17	1962	None	None	No	Non-contributor to API
Building #18	1966	F1-	None	No	Non-contributor to API
Building #20	1969	None	None	No	Non-contributor to API
Building #21	1981	None	None	No	Non-contributor to API
Railroad Spur	c. 1922	None	None	Yes	Non-contributor to API
Water Tank	1952	None	None	No	Non-contributor to API

Note: Descriptions of the OCHS Designations and OHP Ratings are provided in the text below.
Source: LSA Associates, Inc., 2019.

conditions to the proposed building; (4) study effects of the proposed project on the 57th Avenue Industrial API; (5) consider the portion of the project site zoned as CN-3 and how the proposed project relates to International Boulevard; (6) provide a description of the cap and the ongoing maintenance and operation of remediation activities; (7) consider climate, air quality, noise and traffic effects of the proposed project.

d. Native American Tribal Consultation Results. As noted above, all tribal representatives identified by the NAHC were contacted by LSA via letters sent by email and regular mail on January 2, 2019. The letters included a brief description of the project and project site, and a map indicating the project location. The letters requested that the tribe respond if it has information or concerns regarding cultural resources at the project site. Two responses to the letters have been received to date, as summarized below (and are included in Appendix D to the Cultural Resources Study).

On January 3, 2019, Andrew Galvan with the Ohlone Indian Tribe responded to LSA's letter via email, stating "so what will LSA be recommending to happen during the removal of the contaminated soils? Please advise." LSA archaeologist E. Timothy Jones responded to Mr. Galvan via email that a pre-construction "tailgate" meeting should be done to educate construction crews on the appropriate procedures if archaeological deposits or human remains are identified. Mr. Jones, however, also informed Mr. Galvan that the report had not undergone

agency review and recommendations were subject to revision. Mr. Galvan requested that he be updated as to what gets approved.

On January 4, 2019, Edward Ketchum with the Amah Mustun Tribal Band responded to LSA's email via letter, stating that "this site is within the lands of the peoples taken to Mission San Francisco Dolores and Santa Clara primarily. By agreement the Muwekma Tribal Band represents these lands now. Please contact their representative, Alan Leventhal." Mr. Ketchum also added that "in the last 10,000 years the ocean has risen nearly a hundred feet. Cultural Resources could be buried."

On January 17, 2019, LSA made a follow-up contact to all tribes that had not yet responded to the January 2, 2019, request for input. No responses to the follow-up contacts have been received as of August 2019, and the 30-day period for consultation requests is considered to have been completed.

e. Historical Resource Evaluation, Map and Field Review Results. An LSA architectural historian performed a first field survey on August 10, 2011, a supplemental field review on October 25, 2016, and an additional survey on November 13, 2018 to confirm or note changes to the baseline conditions of historical buildings in the project site documented in 2011. Based on LSA's 2016 and 2018 surveys, changes to Building #1 and Building #2 since 2011 include: increased water penetration from failing roofs, broken windows and damage to doors from vandalism; and repainting of the rear, south-facing façade of Building #2 in a brick-red color. Based on LSA's 2018 field survey, no major structural modifications or other alterations to Building #1 or #2 that would compromise their integrity and historical significance have occurred since they were recorded by OCHS in 1994.

Changes identified to the project site since the 2011 field survey include the installation of a high-grade security fencing around the perimeter of the project site topped with razor wire along the non-street facing (i.e., the eastern) boundaries. Along the base of the fencing a short concrete perimeter wall was installed to contain and prevent potential off-site flooding onto adjacent properties. The western or rear portion of the project site was capped with a layer of asphalt paving with several groundwater monitoring wells installed at various locations. A groundwater monitoring station was installed near the northwestern boundary of the project site. Paving this section of the project site required removal of (or covering) a section of railroad spur track that once connected the main factory floor in Building #1 and the loading dock along the northern façade of Building #2 to the former WPRR mainline west of and outside the project site, see description below. All plantings along the base of the street-facing Building #1 façade and along Building #2 were removed and covered in asphalt paving. No other noticeable modifications or alternations were identified.

Description of each historic element follows. A full description of each of the architectural resources is included in the 2019 Cultural Resources Study, located in Appendix D of this EIR, and see Appendix B of the Cultural Resource Study. See also the descriptions in Table 4.1-1.

Building #1. Building #1 is a 75,200-square-foot steel-framed industrial building constructed of brick masonry and concrete and was built in two phases, the first portion consists of the front two-story office portion and main factory floor built in 1922; a rear one-story warehouse was added in 1927. The front, street-facing façade is an example of early-20th century utilitarian Classical Revival inspired industrial architecture. The symmetrical east-facing façade of this building consists of a central two-story block that housed offices, reception areas, and upstairs meeting rooms. It is covered by a low-pitched roof set behind a flat parapet decorated by a cast concrete cornice banding along the roofline. The central two-story block is flanked by single-story wings that reflect the Classically-inspired cornice banding and masonry construction of the central portion of the building. The main entrance is centrally located on the street-facing façade and is framed by a door frame of cast concrete covered by simple, flat, Classical *aedicula*.

Fenestration for this building consists of two types. The central two-block portion contains 18 nine-over-one, wood-framed, double-hung sash windows with cast-concrete sills set in recessed vertical bands framed by masonry pilasters. The fenestration for the rest of the building consists of vertical metal-framed awning and fixed-paned windows set in recessed, nearly full-length vertical elements framed by faux-masonry pilasters.

The rear portion of the building consists of a long, rectangular, single-story, steel-framed and masonry vernacular industrial building. This single-story portion of the building has a full-length roof monitor with awning windows capped by a low-pitched roof. Three roll-up doors are located at the western end of the building. The interior floor of the building is concrete with numerous raised machinery platforms and several tank cradles. The exterior walls are of masonry construction framing nearly full-height, metal-framed awning windows over fixed-paned windows, set in wide, recessed vertical elements with concrete sills and capped with a band of soldier bricks. The south façade has several window casements filled in by cinder blocks. One casement was altered to accommodate a roll-up metal door. Two shed-roofed lean-to additions are also on the south façade. Four large, above-ground metal utility vaults are irregularly placed alongside the south façade. The north façade is mostly bricked in. This building is associated with the history of industrial activity in the project site, and is a contributing element to the 57th Avenue Industrial District API. This building appears in good condition.[8] The building retains

[8] A historical resource's ability to convey its historical significance is assessed according to its "integrity." Integrity is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association." (From: California Register and National Register: A Comparison for purposes of determining eligibility for the California Register, California

integrity of location, setting, design, feeling, association, and workmanship. Integrity of materials has diminished through later alterations (described below) and repairs since construction in 1922.

Minor alterations to the Classical Revival-designed front office portion of Building #1 subsequent to the 1994 OCHS survey include removal of the "General Electric Company" script along the cornice line on the east façade, removal of a large medallion depicting the GE logo above the monumental framing around the main entrance, and the installation of two window-mounted air conditioning units. At the rear portion of Building #1 most of the window casements and entrances along the west and east façades have been removed or filled in; a concrete cinder-block shed-roof addition of unknown purpose is located near the back of the south façade; and a one-story addition is at the southwestern corner of the building covered by a very low-pitched roof and clad in metal siding with fixed, metal framed windows along the south and west façades.

Building #1 operated until 1980 when the plant closed and the facility was vacated. Since its construction and subsequent recordation in 1994, it has remained vacant and sustained damage due to weather, vandalism, and neglect. Building #1 was previously evaluated in 1994 and was considered individually eligible for the National Register for its "design quality and type/style and historical associations" with the industrial development of East Oakland. LSA architectural historian Michael Hibma completed three reviews of Building #1 in August 2011, October 2016, and November 2018. The field review indicated that aside from damage to the building from weather, vandalism, and neglect, as well as removal of landscaping elements from the foot of the building, Building #1 appears to have remained essentially the same since the OCHS recordation in 1994. Building #1 retains integrity of location, design, workmanship, materials, setting and feeling. LSA Associates, Inc. concurs with OCHS that Building #1 remains individually eligible for the National and Oakland registers, as well as a contributing element to the 57th Avenue Industrial District for its historical significance as described by OCHS in 1994.

Building #2. Building #2 is a 45,200-square-foot utilitarian International-style, steel-framed industrial building constructed of brick masonry and concrete in 1936-1937. This building is a high one-story rectangular structure, covered by a low-pitched roof, that rests on a partial concrete slab/raised footer foundation. The east-facing façade is capped by a stepped parapet over a metal roll-up door flanked by two large, rectangular-shaped window casements consisting of metal-framed fixed-paned windows. The brick on the east corner of the building was damaged when a truck backed into the building; the building corner was patched with concrete.[9] The south façade is dominated by a full-width ribbon fenestration consisting of metal-framed, fixed-pane windows with a cast concrete sill over a brick masonry apron wall, a key

Office of Historic Preservation, Technical Assistance Series #6, N.D. Available at: ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf, accessed by LSA 2019

[9] Cox, Jim, 2012. Senior Construction Manager, Geosyntec Consultants, Inc. Personal communication with LSA Associates, Inc., December 17.

feature of International-style industrial buildings. Many of these windows were originally operable awning type windows that are now fastened shut. One original wooden double sliding door remains and is located on the far right hand side of the south façade. This door is partially modified by metal plate reinforcement along the lock and bottom rails. The door's original fixed, six-pane windows remain in place with one pane missing. With the exception of no doors, the west façade mirrors the east façade and consists of three large rectangular window casements consisting of metal-frame fixed-pane windows.

The north façade has a raised concrete platform to accommodate a railroad spur alongside the building (see description of railroad spur below). A full-width metal awning covers the raised platform, and a metal roll-up door is located at the far right side of the north-facing façade. Fenestration essentially mirrors the south façade's full-width ribbon fenestration consisting of metal framed, fixed-pane windows with a sill of cast concrete over a brick apron wall. This building is associated with the history of industrial activity in the project site, and is a contributing element to the 57th Avenue Industrial District API. This building is largely intact and appears in good condition. The building retains integrity of location, setting, design, feeling, association, and workmanship. Integrity of materials has diminished through later alterations and repairs since construction in 1936-1937. Minor alterations to the International-styled Building #2 subsequent to the 1994 OCHS survey include replacement of several original main shop doors with modern roll-up doors, installation of sheet-metal venting equipment, replacement or filling in of several original windows.

Other Buildings. Buildings #4, #8, #17, #18, #20, and #21 are common utilitarian industrial buildings of metal or concrete cinder block construction, one story in height, covered with very low-pitched or flat roofs, and have modern metal roll-up doors. These buildings date from the late 1960s through the 1980s and are of a common industrial building type and design found throughout Oakland, Alameda County, and California. These buildings are not considered potential contributing elements to the 57th Avenue Industrial District API due to their age and general nondescript construction, materials, and design.

Railroad Spur. A railroad spur with two branches was used to transport materials and goods from the project site to the WPRR to the west. The spur left the WPRR mainline and ran between Buildings #2 and #4. As the railroad spur neared Building #2, it split into two tracks with the southern spur running alongside the raised concrete loading platform on the northern façade of Building #2. The northern branch of the spur connected the WPRR with the main factory floor in Building #1. The northern spur was constructed in 1922 concurrently with Building #1 and is depicted on the 1925 Oakland Sanborn Fire Insurance Company Map of the project site. The southern spur was constructed in 1936 concurrently with Building #2 and is depicted on the 1952 Oakland Sanborn Fire Insurance Company Map of the project site. These linear features are associated with the history of industrial activity in the project site, and are contributing elements to the 57th Avenue Industrial District API. The spur is no longer connected to the main

rail line and the remaining portions are located in the area alongside Building #2 (see Figure 4.1-3).

Water Tank. A welded-steel tank is located to the south of Building #1 and was installed sometime before 1952 to provide on-site fire suppression capability. It replaced the original 50,000-gallon steel tank, which was installed at around the same time as Building #1 was constructed. The replacement water tank is approximately 120,000 gallons in capacity, rests on a raised concrete foundation, and is depicted on the 1952 Oakland Sanborn Fire Insurance Company Map of the project site. An approximately 500-square-foot, one-story, square, metal-framed pump house is located adjacent to the tank, and is also depicted on the 1952 Oakland Sanborn Fire Insurance Company Map. The water tank appears in fair condition.

57th Avenue Industrial District API. The 57th Avenue Industrial District is an API that includes the project site and is comprised of approximately 21 commercial and industrial buildings (including Buildings #1 and #2) on 22 parcels covering part of one city block in central East Oakland. Full descriptions of the contributing elements to the API are included in the 2019 Cultural Resources Study (located in Appendix D, see Section 5.4.1 and Appendix B of Study).

The API's contributing buildings are located in the project site and on both sides of 57th Avenue. These buildings typically have minimal to no setback, with equipment yards and driveways of various widths between them. Buildings within the API are generally similar in size, age (1910s-1930s), and design. The buildings within the API are mostly of early-20th century utilitarian, commercial block, 1920s decorative masonry, or Moderne design. A typical design element within the API is single-story construction; long, rectangular footprints; steeped parapets and truss roofs; and vehicle or loading doors. Exteriors are mainly pressed brick or face brick and glass, with stucco ornament, metal sash, and more elaborate brickwork. General alterations to some buildings within the API include new doors, and replacement windows; modern fences and gates, including fenced electrical and HVAC equipment enclosures; and wheelchair access ramps. The buildings near the International Boulevard/SR 185 intersection are generally larger and feature several additions and new wall cladding. Overall however, buildings within the API appear intact and are in good condition.

The 57th Avenue Industrial District was previously evaluated in 1996 and later designated an API, indicating that this collection of buildings constituted a National Register quality historic district due to its industrial past and cohesive architectural aesthetic. An LSA architectural historian completed a field review of the 57th Avenue Industrial District in August 2011. The field review indicated that aside from removal of three contributing elements, the 57th Avenue Industrial District appears to have remained essentially the same since the OCHS recordation in 1996. The 57th Avenue Industrial District retains integrity of location, design, workmanship, materials, setting and feeling. LSA concurs with OCHS that the 57th Avenue Industrial District is

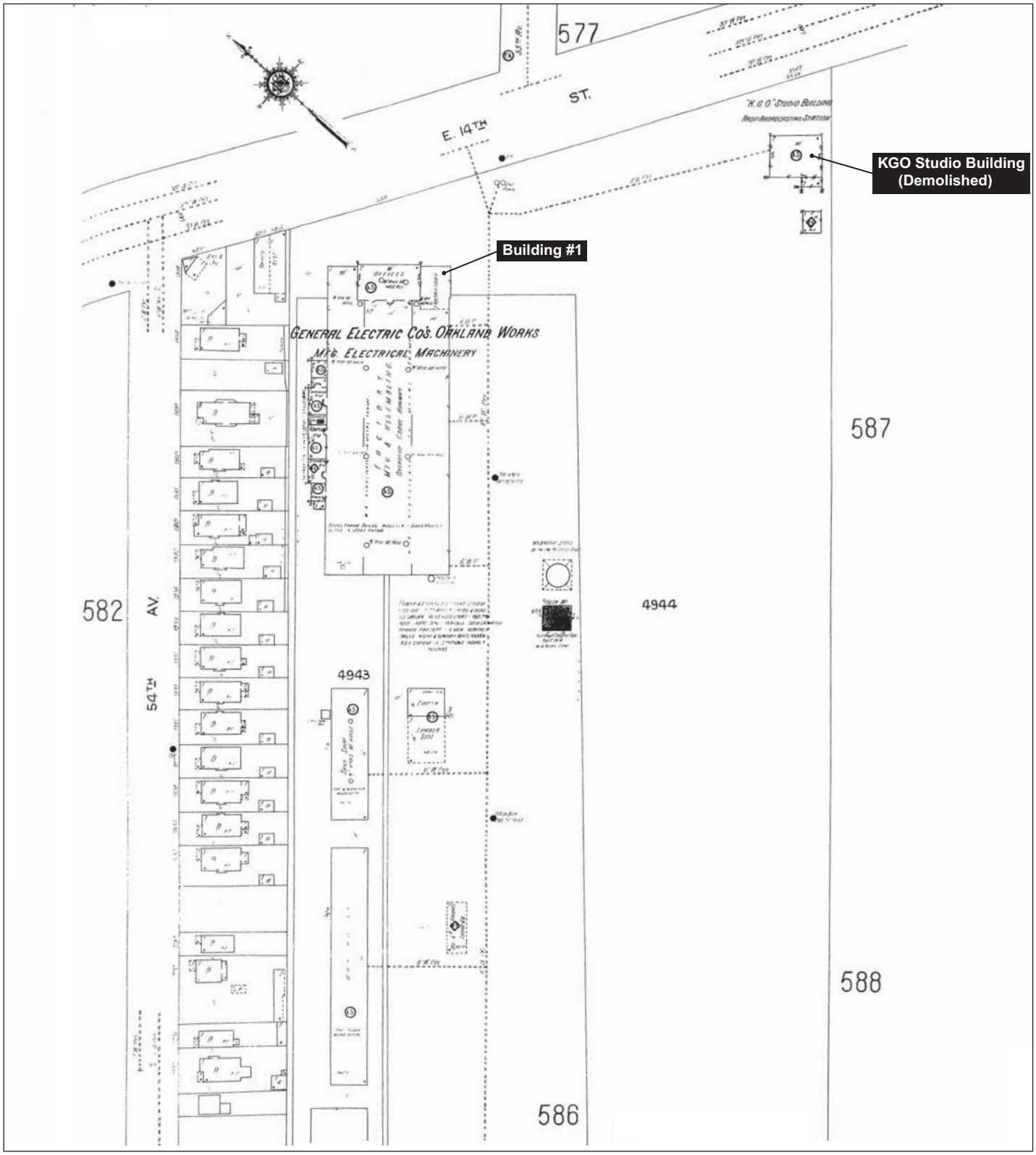

Figure 4.1-3
1925 Sanborn Map of the Project Site

0 150 Feet

GE Site Remediation and Redevelopment Project EIR
Sources: LSA Associates Inc., 2017 and Sanborn Map Co., 1925.

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eligible for listing in the National and the City of Oakland registers for its historical significance as described by OCHS in 1996.

3. Precontact History and Ethnography of the Site and Vicinity

a. Precontact History. Per the LSA Cultural Resources Study, the updated sequence of the timing and nature of Native Californian occupation during prehistory, briefly summarized below, consists of the Early Holocene/Lower Archaic Period (8000-3500 cal B.C.), the Early Period/Middle Archaic (3500-500 cal B.C.), Lower Middle Period/Initial Upper Archaic (500 cal B.C.-A.D. cal 430), Upper Middle Period/Late Upper Archaic (cal A.D. 430-1050), and the Initial Late Period/Lower Emergent (cal A.D. 1050 to 1550).

The Early Holocene is characterized by "a generalized mobile forager pattern" as indicated by assemblages containing milling slabs and hand stones and large wide-stemmed and leaf-shaped projectile points.[10] Early Holocene archaeological sites are rare, although this may in part be an issue of visibility, with these ancient deposits likely underlying several feet of sediment or having been submerged as a result of sea-level rise.[11] Although local variations occur, increased sedentism, regional trade, and symbolic integration generally mark the Early Period. A transition from a forager adaption to semi-sedentism is indicated in the archaeological record of bayshore shellmounds, including the West Berkeley Shellmound (CAALA-307), as evidenced by mortars and pestles and a burial complex with ornamental grave associations.[12]

Symbolic integration systems and technology evolve during the Lower Middle Period. At the onset of the Middle Period—referred to as the Early-Middle Transition (EMT)—rectangular shell beads, markers of the Early Period, are replaced in the archaeological record with stylistically new beads, including split-beveled and saucer Olivella. Other artifacts were also introduced during this period, including barbless fish spears, elk femur spatula, tubes, whistles, and bone basketry awls.[13]

The Initial Late Period represents the ethnographically documented cultures present at the time of European contact. This period is marked in part by increased sedentism; status ascription and social stratification observed in burial practices; and the emergence of the Kuksu Cult, a ceremonial system that unified several language groups in Central California at the time of

[10] Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Thomas M. Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier and David A. Fredrickson, 2007. Punctuated Culture Change in the San Francisco Bay Area. In California Prehistory: Colonization, Culture, and Complexity, edited by T. L. Jones and K. A. Klar, pp. 99-123. AltaMira Press, Lanham, Maryland.

[11] Meyer, Jack and Jeffrey Rosenthal, 2007. Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4. Far Western Anthropological Research Group, Inc., Davis, California.

[12] Milliken, et al., 2007. Op. cit.

[13] Elsasser, Albert B., 1978. Development of Regional Prehistoric Cultures. In Handbook of North American Indians Volume 8: California, edited by R. F. Heizer, pp. 37-57. Smithsonian Institution, Washington, D.C. p.39.

European contact. New technology was also introduced during this period, notably the bow-and-arrow, which is evidenced in the archaeological record by small dart-sized projectile points.

b. Ethnography. The East Bay is within the ancestral territory of the Costanoan, also commonly referred to as Ohlone. Eight Ohlone languages were spoken in the area from the southern edge of the Carquinez Strait to a portion of the Big Sur and Salinas rivers south of Monterey Bay, to approximately 50 miles inland from the coast.[14] The east shore of San Francisco Bay and interior valleys, possibly as the Chochenyo ethnolinguistic group of Ohlone occupied areas as far east as the Livermore Valley.

The Ohlone lived in tribelets, which were autonomous political units that occupied a distinct territory.[15] Tribelets generally consisted of one main village occupied year round and a series of smaller hamlets and resource gathering and processing locations occupied intermittently or seasonally. Tribelet population ranged between 50 and 500 persons and was largely determined by the carrying capacity of a tribelet's territory. At the time of Euro-American contact, the Huchiun tribelet occupied territory that included present-day Oakland.[16]

By the late-18th century, Spanish exploration and settlement of the Bay Area had dramatically transformed Ohlone culture. Spanish settlers moved into northern California and established the mission system. Mission records indicate that the first Huchiun was baptized in 1787 with the first large group from that tribelet arriving at Mission San Francisco in the fall of 1794.[17] Following the secularization of the missions in 1834, many Ohlone worked as laborers on ranchos.[18]

c. Post Contact History. For a discussion of the Spanish and Mexican periods, see the 2019 Cultural Resources Study in Appendix D. The historical context of the existing buildings on the project site can be understood in terms of Oakland's expansion and industrial development during the early-20th century.[19] It was during this time that Oakland's population grew, its borders expanded, and various industries settled in the city.

From circa 1900 to 1912, industrial growth in Oakland was fueled by several factors, including an economic upswing following a persistent depression from 1873 to 1896. The 1906 San

[14] Levy, Richard, 1978. Costanoan. In Handbook of North American Indians Volume 8: California, edited by R.F. Heizer, pp. 485-499. Smithsonian Institution, Washington, D.C.

[15] Kroeber, Alfred L., 1955. Nature of the Land-Holding Group. Ethnohistory 2:303-314.

[16] Milliken, Randall, 2006. The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area. Far Western Anthropological Research Group, Inc., Davis, California.

[17] Milliken, Randall, 1995. A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810. Ballena Press Anthropological Papers. Ballena Press Menlo Park, California.

[18] Levy, 1978, op. cit.

[19] Portions of the Historical Overview and Architectural Context subsections have been adapted from Historic Context: Unreinforced Masonry Buildings in Oakland, 1850-1948 (Marvin, 1995) and the City of Oakland Historic Preservation Element (1993).

Francisco Earthquake and Fire also had a profound impact, as industries and people moved to Oakland and the East Bay to escape the extensive damage in San Francisco. In the days following the disaster, for example, more than 150,000 San Francisco residents took ferryboats to Oakland, where many of the displaced camped in parks and open space.[20] Many of the displaced people settled permanently in Oakland, and by 1910 Oakland's population reached 150,174 - more than double its population in 1900. In 1909, Oakland annexed the entire hill area and Fruitvale, Melrose, Elmhurst, and the area between Brooklyn (East Oakland) and San Leandro, providing more room for residential and industrial growth.

During the early-20th century, the Southern Pacific's monopoly on the Oakland waterfront ended by a series of court decisions allowing the City to assume ownership of the port and attract industrial development. The WPRR and Santa Fe railroads arrived in Oakland, creating new development corridors along their respective rail lines, including Santa Fe's inland corridor through North Oakland and Emeryville, and the San Leandro Boulevard strip of East Oakland, south of Fruitvale to the San Leandro border. The project site is an example of an industrial development associated with growth along these rail corridors, with GE's manufacturing buildings (Buildings #1 and #2) linked to the WPRR via a rail spur.

During the 1900s, 1910s, and 1920s, Oakland's strategic location, extensive rail network, and port made it one of the West Coast's leading industrial and warehousing centers. These activities became especially prominent in East Oakland where several automobile assembly plants, including the Durant Motor Company, Willys-Overland Motors, Caterpillar Tractor, and Chevrolet were located. The City was often referred to as the "Detroit of the West." National companies established branches in East Oakland during this time, including National Lead Company at 4701 San Leandro Boulevard in 1919, Victor Talking Machine Company at 1100-48 77th Avenue in 1923-24, and GE, which opened its second plant in Oakland at the project site (Building #1) in 1922.

Perhaps the most conspicuous element of Oakland's industrial development during the early-20th century is the Mutual Stores (Safeway) tower and warehouse complex at 5701 International Boulevard. Built in 1927-28, the Mutual Stores tower and warehouse complex is historically associated with food processing and distribution, and this Beaux Arts Spanish Renaissance style building is one of the Bay Area's best examples of the City Beautiful Movement's concept of dressing-up utilitarian structures with ornamentation. The Mutual Stores Building is a significant contributing element of the 57th Avenue Industrial District API.

d. Architectural Context. The construction materials of early Oakland industrial buildings varied, and included brick, wood, and iron. The brick examples might structurally be timber framing with brick cladding, or brick with wood or iron internal structures. In appearance, 19th-century industrial buildings were generally utilitarian, a pattern that would continue into the

[20] Bagwell, Beth, 1982. Oakland, the Story of a City. Oakland Heritage Alliance, p. 175.

20th century, as is evidenced by buildings in the project site and the 57th Avenue Industrial District API. Whether brick, frame, or metal, typical forms had one or two stories, a gable roof or roofs with or without a false front or parapet, and tall, regularly spaced windows with a large expanse of wall surface between. The brick examples had segmental arched windows and some minimal quasi-classical detailing: corbelled cornices, low-relief pilasters, and raised pilaster caps.

After about 1915, industrial plants were increasingly built of reinforced concrete or concrete frame with brick infill to accommodate heavy loads, increasingly complex machinery, and a greater need for weather protection. Along with the new technology came increased attention to the design of factories, both functional and aesthetic. Famed industrial architect, Albert Kahn, was the leading promoter of the new long horizontally organized, steel or concrete-framed factories, with steel truss or concrete slab roofs, concrete mushroom columns, wide steel sash windows in a grid of narrow pilasters, spandrels and wall surfaces of either concrete or brick, three-part or other symmetrical composition, sometimes with modified Secessionist or classical allusions in the pilasters or parapet.

Because industry has had such a prominent role in Oakland's development, physical features that illustrate industry through the years are important to understanding the City's history. Oakland's industrial architecture from the early-20th century indicates the scale and scope of industrial expansion in Oakland as well as reflecting nationwide advances in building technology and the value placed on industrial architecture. In general, where utilitarian once meant more or less disposable buildings, now the term connoted functional and aesthetic permanence. In the 1920s, the increasing presence of national firms such as GE in Oakland meant well-financed and often monumentally designed plants, and helped bring the area into concordance with national architectural movements.

e. 5441 International Boulevard. The project site was initially developed in 1922 by GE. Building #1, designed by the GE Engineering Department and originally valued at $90,000[21] was constructed in 1922—with an addition made in 1927—by the Austin Company of California. Austin Company of California designed and built several prominent buildings in Oakland during the first half of the 20th century. Building #1 housed offices, a factory, and warehouse space. It manufactured switchboards, transformers, motors, and electrical equipment.

The project site is also notable for its association with the formative years of radio broadcasting on the west coast of the United States. As a manufacturer of radio receivers, GE saw value in owning and operating radio broadcast stations as a means for promoting sales of its receivers to the public.[22] To this end, GE constructed a broadcasting station, WGY, in 1921 at its manufacturing facility in Schenectady, New York. To expand its reach to other regions in the

[21] Marvin, Betty, 1994. Department of Parks and Recreation. *523 Record for the General Electric Company Oakland Works, Building #1*.

[22] Schneider, John, 2012. General Electric's Trio of Pioneer Radio Stations. *Monitoring Times* 31(7), pp. 8-11.

United States, GE opened two other radio broadcasting stations shortly after WGY: KGO Oakland in 1923 at the project site and KOA Denver in 1924. The KGO studio building was located southeast of GE's manufacturing plant (Building #1), as shown in Figure 4.1-3, a 1925 Sanborn Fire Insurance Company Map for the site. The KGO studio building was a near duplicate of the central two-story portion of Building #1, consisting of a Classical Revival-style, two-story brick building. The KGO studio building and the two 150-foot-tall KGO transmission towers at the opposite end of the property were demolished in the 1980s.

In 1936 and 1937, Building #2 (the GE Insulation Department) was designed and constructed by the Austin Company of California and was originally valued at $74,000.[23]

GE would continue to develop the project site with additional buildings to support its transformer manufacturing operations until 1975. Between 1975 and the mid-1990s, GE operated electrical equipment maintenance and repair operations in portions of the site, after which it was used as storage for mobile office trailers. The project site is currently unoccupied and is no longer used for manufacturing.

4. Paleontological Resources

Paleontological resources include fossilized remains or traces of organisms including plants, vertebrates (animals with backbones), invertebrates (e.g., starfish, clams, ammonites, and marine coral), and microscopic plants and animals (microfossils), including their imprints, from a previous geological period. Collecting localities and the geologic formations containing those localities are also considered paleontological resources as they represent a limited, non-renewable resource and once destroyed, cannot be replaced. The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on non-renewable paleontological resources.[24] The Society has helped define the value of paleontological resources and, in particular, states that significant paleontological resources are fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 years).[25]

As discussed in Section 4.7, Geology, Soils and Seismicity, the proposed project site is generally blanketed with up to 5 to 6 feet of fill material, and deeper fill was encountered to a depth of about 18 feet in the southern portion of the project site. Deeper fill also may be present

[23] Marvin, Betty, 1994. Op. cit.

[24] Society of Vertebrate Paleontology (SVP), Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, 2010.

[25] Ibid.

in other areas of the project site.[26] Recent fill is considered to have a low sensitivity for paleontological resources due to its already disturbed nature.

Based on regional mapping of soil types, the native soil beneath the fill on the project site consists of Holocene alluvium.[27,28] The results of a search of paleontological localities in the fossil collections database at the University of California Museum of Paleontology identified no vertebrate or invertebrate fossil localities in Holocene-aged sediments within Alameda County.[29] The only localities identified in Holocene-aged sediments within Alameda County included one plant in Oakland, one microfossil in Tyson's Lagoon, and three localities of unidentified collection type located in the Oakland hills, Berkeley, and Bonita. Therefore, the native Holocene-aged soil beneath the project site is considered to have a low paleontological sensitivity.

5. Regulatory and Legislative Context

The following section provides a description of the regulatory framework for cultural resources on the project site.

a. National Historic Preservation Act. As stated previously, a cultural resources study was undertaken for the project applicant in response to the requirement for federal review and approval associated with the Toxic Substances Control Act Application to the USEPA as the federal lead agency. Due to the historic resources on the site and its location within the 57th Avenue Industrial District API, USEPA is responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR 800).[30] USEPA is also a responsible agency for this CEQA analysis. The NHPA of 1966 establishes the role and responsibilities of the federal government in historic preservation. Toward this end, the NHPA directs agencies (1) to identify and manage historic properties under their control; (2) to undertake actions that will advance the Act's provisions, and avoid actions contrary to its purposes; (3) to consult with others while carrying out historic preservation activities; and (4) to consider the effects of their actions on historic properties. In particular, Section 106 of the NHPA requires federal agencies to (1) take into account the effects of their undertakings on historic properties; and (2) afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on potential effects. The regulations that implement Section 106 and outline the historic preservation review process are at 36 CFR Part 800.

[26] Cornerstone Earth Group, 2018. Geotechnical Investigation, 5441 International Boulevard, Oakland, California, October 25.

[27] Graymer et al., 2006. Geologic Map of the San Francisco Bay Region.

[28] United States Geological Survey (USGS), 2019a. Available at: http://geomaps.wr.usgs.gov/sfgeo/geologic/downloads.html, accessed February 20.

[29] University of California Museum of Paleontology, 2019. Collections Database, Locality Search. Available at: https://ucmpdb.berkeley.edu/loc.html, accessed March 18.

[30] LSA Associates Inc., 2019. Cultural Resources Study General Electric Remediation and Reuse Project, Oakland, Alameda County, California, April.

The National Register of Historic Places (NRHP) was authorized by Section 101 of the NHPA as the nation's official list of cultural resources worthy of preservation. Properties listed in the NRHP consist of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture. Properties listed in or eligible for listing in the NRHP are considered in planning and environmental review, and effects to such properties are primarily addressed under Section 106. The criteria for determining a resource's NRHP eligibility are defined at 36 CFR 60.4. Resources that are significant within an important historic context, meet the age guidelines, and possess integrity will generally be considered eligible for NRHP listing.

b. CEQA Requirements. In the City of Oakland, a "historical resource" under CEQA is a resource which meets any of the following criteria:

- A resource listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register);
- A resource included in Oakland's Local Register of historical resources, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- A resource identified as significant (e.g., rated 1-5) in a historical resource survey recorded on Department of Parks and Recreation Form 523, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- Meets the criteria for listing on the California Register of Historical Resources; or
- A resource that is determined by the Oakland City Council to be historically or culturally significant even though it does not meet the other four criteria listed here.

A historical resource consists of:

> "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…. Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources…" CEQA Guidelines Section 15064.5(a)(3).

In accordance with CEQA Guidelines Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment. A substantial adverse change in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired.

c. Public Resources Code 5024.1: California Register of Historical Resources. Section 5024.1 of the PRC established the California Register. Generally, a resource is considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the

California Register (California Code of Regulations [CCR] Title 14(3) Section 15064.5(a)(3)). For a cultural resource to qualify for listing in the California Register it must be significant under one or more of the following criteria:

Criterion 1: Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

Criterion 2: Associated with the lives of persons important in our past;

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

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

In addition to being significant under one or more of these criteria, a resource must retain enough of its historic character and appearance to be recognizable as a historical resource and be able to convey the reasons for its significance (CCR Title 14 Section 4852(c)). Generally, a cultural resource must be 50 years or older to be eligible for the California Register.

d. California Health and Safety Code Section 7050.5: Human Remains. Section 7050.5 of the California Health and Safety Code (HSC) 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 Native American Heritage Commission within 24 hours of this identification.

e. California Public Resources Code Section 5097.98: Notification of MLD. Section 5097.98 of the California Public Resources Code states that the Native American Heritage Commission (NAHC), upon notification of the discovery of Native American human remains pursuant to HSC §7050.5, shall immediately notify those persons (i.e., the Most Likely Descendent or "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.

f. Oakland Historic Preservation Element. The Historic Preservation Element (HPE) of the Oakland General Plan presents goals, policies, and objectives that guide historic

preservation efforts in Oakland. HPE policies define the criteria for legal significance that must be met by a resource before it is listed in Oakland's local register of historical resources, and would, therefore, be considered a historical resource under CEQA. Based on a city-wide preliminary architectural inventory by the OCHS, pre-1945 properties have been assigned a significance rating of A, B, C, D, E, or F and assigned a number (1, 2, or 3) which indicates a building's district status. The ranking system, described in Table 4.1-3, indicates a property's status as a historical resource and identifies those properties warranting special consideration in the planning process. The individual property rating of a building is based on the following criteria:

Visual Quality/Design:	Evaluation of exterior design, interior design, materials and construction, style or type, supporting elements, feelings of association, and importance of designer.
History/Association:	Association of person or organization, the importance of any event, association with patterns of history, and the age of the building.
Context:	Continuity and familiarity of the building within the City, neighborhood or district.
Integrity and Reversibility:	Evaluation of the building's condition, its exterior and interior alterations, and any structural removals.

The Historic Preservation Element also establishes the following policy with respect to historical resources under CEQA:

Policy 3.8: Definition of "Local Register of Historical Resources" and Historic Preservation "Significant Effects" for Environmental Review Purposes. For purposes of environmental review under CEQA, the following properties will constitute the City of Oakland's Local Register of Historical Resources:

- All "Designated Historic Properties," Landmarks, Heritage Properties, Study List Properties, Preservation Districts, and S-7 and S-20 Preservation Combining Zone Properties; and
- Those "Potential Designated Historic Properties" that have an existing rating of "A" or "B" or are located within an "Area of Primary Importance".

Table 4.1-3 Oakland Cultural Heritage Survey Significance Ratings

Rating Level	Description
A: Properties of Highest Importance	This designation applies to properties considered clearly eligible for individual National Register of Historic Places and City Landmark designation. Such properties consist of outstanding examples of an important style, type, or convention, or intimately associated with a person, organization, event, or historical pattern of extreme importance at the local level or of major importance at the state or national level.
B: Properties of Major Importance	These are properties of major historical or architectural value but not sufficiently important to be rated "A". Most are considered individually eligible for the National Register of Historic Places, but some may be marginal candidates. All are considered eligible for City Landmark designation and consist of especially fine examples of an important type, style, or convention, or intimately associated with a person, organization, event, or historical pattern of major importance at the local level or of moderate importance at the state or national level.
C: Properties of Secondary Importance	These are properties that have sufficient visual/architectural or historical value to warrant limited recognition but do not appear individually eligible for the National Register of Historic Places. Some may be eligible as City Landmarks and are superior or visually important examples of a particular type, style, or convention, and include most pre-1906 properties.
D: Properties of Minor Importance	These are properties which are not individually distinctive but are typical or representative examples of an important type, style, convention, or historical pattern. The great majority of pre-1946 properties are in this category.
E, F, or *: Properties of No Particular Interest	Properties that are less than 45 years old or modernized.
District Status	**Description**
1	A property in an Area if Primary Importance (API) or National Register of Historic Places-quality district. An API is a historically or visually cohesive area or property group identified by the Oakland Cultural Heritage Survey (OCHS) which usually contains a high proportion of individual properties with ratings of "C" or higher.
2	A property in an Area of Secondary Importance (ASI) or a district of local significance. An ASI is similar to an API except that an ASI does not appear eligible for the National Register.
3	A property not within a historic district.

Note: Properties with ratings of "C" or higher or are contributors to or potential contributors to an API or ASI are considered Potential Designated Historic Properties (PDHP) that may warrant consideration for preservation by the City. The OCHS has assigned some properties a contingency rating, indicated by a lower-case letter. A contingency rating is a potential rating under some condition, such as "if restored" or "when older" or "with more information."
Source: LSA Associates, Inc., 2019.

The HPE includes other policies that seek to encourage the preservation of Oakland's significant historical resources within the context of balanced development and growth. These policies are presented below.

Policy 3.1: Avoid or Minimize Adverse Historic Preservation Impacts Related to Discretionary City Actions. The City will make all reasonable efforts to avoid or minimize adverse effects on the Character-Defining Elements of existing or Potential Designated Historic Properties which could result from private or public projects requiring discretionary City actions.

Policy 3.4: City Acquisition for Historic Preservation Where Necessary. Where all other means of preservation have been exhausted, the City will consider acquiring, by eminent domain if necessary, existing or Potential Designated Historic Properties, or portions thereof, in order to preserve them.

Policy 3.5: Historic Preservation and Discretionary Permit Approvals. For any project involving complete demolition of Heritage Properties or Potential Designated Historic Properties requiring discretionary City permits, the City will make a finding that: 1) the design quality of the proposed project is at least equal to that of the original structure and is compatible with the character of the neighborhood; or 2) the public benefits of the proposed project outweigh the benefit of retaining the original structure; or 3) the existing design is undistinguished and does not warrant retention and the proposed design is compatible with the character of the neighborhood.

Policy 3.7: Property Relocation Rather than Demolition. As a condition of approval for all discretionary projects involving demolition of existing or Potential Designated Historic Properties, the City will normally require that reasonable efforts be made to relocate the properties to an acceptable site.

Policy 3.12: Historic Preservation and Substandard or Public Nuisance Properties. Before requiring vacation or demolition, the City will take all reasonable actions to repair or rehabilitate existing or Potential Designated Historic Properties which have been determined to be substandard or public nuisances under the Oakland Dangerous Buildings Code, the Oakland Housing Code, the Blight Ordinance, the Earthquake Repair Ordinance, or any other City code or ordinance. In cases where such properties are already vacant or an immediate hazard, such repair or rehabilitation will occur expeditiously to prevent further deterioration or to abate the immediate hazard.

g. Oakland Municipal Code. The City has adopted required findings for demolition of historic properties (City of Oakland Municipal Code 17.136.075). The ordinance identifies three categories of properties that are associated with a series of findings that must be met prior to acceptance of a proposal to demolish a historical building or a building within a historic district. The Category II findings, described below, are relevant to the project since it is located within an API. The three categories of historic structures identified in Section 17.136.075 are listed below:

- **Category I** includes any Landmark; Heritage Property; property rated “A” or “B” by the Oakland Cultural Heritage Survey; or Preservation Study List Property. This category excludes any property that falls into Category II.

- **Category II** includes properties in an S-7 or S-20 zone or an Area of Primary Importance. Any building, including those that do not contribute to the historic quality of the district, falls into this category.
- **Category III** includes properties rated "C" by the Oakland Cultural Heritage Survey or contributors to an Area of Secondary Importance. This category excludes any property that falls into Category II.

Because Building #1 and Building #2 are within the 57th Avenue Industrial District API, they are considered to be Category II properties, as discussed below.

There are six findings for demolition of Category II buildings, which include any property in the S-7 or S-20 zone or in a historic neighborhood defined as an API by the OCHS (i.e., both Building #1 and Building #2). A proposal to demolish a Category II building must meet either finding 1 or 2 for contributors to a district or finding 3 for non-contributing buildings and all three of findings 4, 5, and 6.

- **Finding 1**: The existing property has no reasonable use or cannot generate a reasonable economic return and the development replacing it will provide such use or generate such return.
- **Finding 2**: The structure constitutes a hazard and is economically infeasible to rehabilitate on its present site. For this finding, a hazard constitutes a threat to health and safety that is not immediate.
- **Finding 3 (non-contributing building)**: The existing structure is either: (a) seriously deteriorated or a hazard, or (b), the existing design is undistinguished and does not warrant retention. For this finding, a hazard constitutes a threat to health and safety that is not immediate.
- **Finding 4**: The design quality of the replacement structure is equal/superior to that of the existing structure.
- **Finding 5**: The design of the replacement project is compatible with the character of the preservation district, and there is no erosion of design quality at the replacement project site and in the surrounding area. This includes, but is not necessarily limited to, the following additional findings:
    - The replacement project is compatible with the district in terms of massing, siting, rhythm, composition, patterns of openings, quality of material, and intensity of detailing;
    - New street frontage with forms that reflect the widths and rhythm of the façades on the street and entrances that reflect the patterns on the street;
    - The replacement project provides high visual interest that either reflects the level and quality of visual interest of the district contributors or otherwise enhances the visual interest of the district;

- If the design contrasts the new to the historic character, the replacement project enriches the historic character of the district;
- The replacement project is consistent with the visual cohesiveness of the district. For the purpose of this item, visual cohesiveness is the architectural character, the sum of all visual aspects, features, and materials that defines the district. A new structure contributes to the visual cohesiveness of a district if it relates to the design characteristics of a historic district. New construction may do so by drawing upon some basic building features, such as the way in which a building is located on its site, the manner in which it relates to the street, its basic mass, form, direction, or orientation (horizontal vs. vertical), recesses and projections, quality of materials, patterns of openings, and level of detailing. When a combination of some of these design variables are arranged in a new building to relate to those seen traditionally in the area, but integral to the design and character of the proposed new construction, visual cohesiveness results; and
- The replacement project will not cause the district to lose its current historic status.

- **Finding 6**: It is economically, functionally, architecturally, or structurally infeasible to incorporate the historic building into the proposed development.

h. Standard Conditions of Approval. The proposed project would be required to comply with the City's SCAs related to cultural resources presented below. The Conditions of Approval will be adopted as requirements of the proposed project if the project is approved by the City.

SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33)
Requirement: Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented.

In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data

recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense.

In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.
When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-CULT-2: Archaeologically Sensitive Areas – Pre-Construction Measures (#34)
Requirement: The project applicant shall implement either Provision A (Intensive Pre- Construction Study) or Provision B (Construction ALERT Sheet) concerning archaeological resources.

Provision A: Intensive Pre-Construction Study. Prior to approval of construction-related permits, the project applicant shall retain a qualified archaeologist to conduct a site-specific, intensive archaeological resources study for review and approval by the City prior to soil-disturbing activities occurring on the project site. The purpose of the site-specific, intensive archaeological resources study is to identify early the potential presence of history-period archaeological resources on the project site. At a minimum, the study shall include:

a. Subsurface presence/absence studies of the project site. Field studies may include, but are not limited to, auguring and other common methods used to identify the presence of archaeological resources.
b. A report disseminating the results of this research.
c. Recommendations for any additional measures that could be necessary to mitigate any adverse impacts to recorded and/or inadvertently discovered cultural resources.

If the results of the study indicate a high potential presence of historic-period archaeological resources on the project site, or a potential resource is discovered, the project applicant shall hire a qualified archaeologist to monitor any ground disturbing activities on the project site during construction and prepare an ALERT sheet pursuant to Provision B below that details what could potentially be found at the project site. Archaeological monitoring would include briefing construction personnel about the type of artifacts that may be present (as referenced in the ALERT sheet, required per Provision B below) and the procedures to follow if any artifacts are encountered, field recording and sampling in accordance with the Secretary of Interior's Standards and Guidelines for Archaeological Documentation, notifying the appropriate officials if human remains or cultural resources are discovered, and preparing a report to document negative findings after construction is completed if no archaeological resources are discovered during construction.

Provision B: Construction ALERT Sheet. Prior to and during ground disturbing activities, the project applicant shall prepare a construction "ALERT" sheet developed by a qualified archaeologist for review and approval by the City prior to soil-disturbing activities occurring on the project site. The ALERT sheet shall contain, at a minimum, visuals that depict each type of artifact that could be encountered on the project site. Training by the qualified archaeologist shall be provided to the project's prime contractor, any project subcontractor firms (including demolition, excavation, grading,

foundation, and pile driving), and utility firms involved in soil- disturbing activities within the project site.

The ALERT sheet shall state, in addition to the basic archaeological resource protection measures contained in other standard conditions of approval, all work must stop and the City's Environmental Review Officer contacted in the event of discovery of the following cultural materials: concentrations of shellfish remains; evidence of fire (ashes, charcoal, burnt earth, fire-cracked rocks); concentrations of bones; recognizable Native American artifacts (arrowheads, shell beads, stone mortars [bowls], humanly shaped rock); building foundation remains; trash pits, privies (outhouse holes); floor remains; wells; concentrations of bottles, broken dishes, shoes, buttons, cut animal bones, hardware, household items, barrels, etc.; thick layers of burned building debris (charcoal, nails, fused glass, burned plaster, burned dishes); wood structural remains (building, ship, wharf); clay roof/floor tiles; stone walls or footings; or gravestones. Prior to any soil-disturbing activities, each contractor shall be responsible for ensuring that the ALERT sheet is circulated to all field personnel, including machine operators, field crew, pile drivers, and supervisory personnel. The ALERT sheet shall also be posted in a visible location at the project site.
When Required: Prior to approval of construction-related permit; during construction
Initial Approval: Bureau of Building; Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-CULT-3: Human Remains – Discovery During Construction (#35)
Requirement: Pursuant to CEQA Guidelines section 15064.5(e)(1), in the event that human skeletal remains are uncovered at the project site during construction activities, all work shall immediately halt and the project applicant shall notify the City and the Alameda County Coroner. If the County Coroner determines that an investigation of the cause of death is required or that the remains are Native American, all work shall cease within 50 feet of the remains until appropriate arrangements are made. In the event 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 California Health and Safety Code. If the agencies determine that avoidance is not feasible, then an alternative plan shall be prepared with specific steps and timeframe required to resume construction activities. Monitoring, data recovery, determination of significance, and avoidance measures (if applicable) shall be completed expeditiously and at the expense of the project applicant.
When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

Typically, SCA-CULT-4: Property Relocation, described below, is applied when a historic resource is present on a property; however, due to the size of Buildings #1 and #2 and the contamination inherent in the building materials, it is not practical or feasible to relocate the buildings.

SCA-CULT-4: Property Relocation (#36)
Requirement: Pursuant to Policy 3.7 of the Historic Preservation Element of the Oakland General Plan, the project applicant shall make a good faith effort to relocate the historic resource to a site acceptable to the City. A good faith effort includes, at a minimum, all of the following:

a. Advertising the availability of the building by: (1) posting of large visible signs (such as banners, at a minimum of 3' x 6' size or larger) at the site; (2) placement of advertisements in Bay Area news media acceptable to the City; and (3) contacting neighborhood associations and for-profit and not-for-profit housing and preservation organizations;

b. Maintaining a log of all the good faith efforts and submitting that along with photos of the subject building showing the large signs (banners) to the City;
c. Maintaining the signs and advertising in place for a minimum of 90 days; and
d. Making the building available at no or nominal cost (the amount to be reviewed by the Oakland Cultural Heritage Survey) until removal is necessary for construction of a replacement project, but in no case for less than a period of 90 days after such advertisement.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning (including Oakland Cultural Resource Survey) Monitoring/Inspection: N/A

B. Impacts and Mitigation Measure

The following section describes potentially significant impacts to cultural resources and tribal cultural resources from implementation of the proposed project or the San Leandro Street access variant. Mitigation recommendations are made to avoid, minimize, or mitigate such impacts where possible.

1. Criteria of Significance

Implementation of the proposed project would have a significant impact on cultural resources if it would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5. Specifically, a substantial adverse change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be "materially impaired." The significance of an historical resource is "materially impaired" when a project demolishes or materially alters, in an adverse manner, those physical characteristics of the resource that convey its historical significance **and** that justify its inclusion on, or eligibility for, inclusion on an historical resource list (including the California Register of Historical Resources, the National Register of Historical Resources, Local Register, or historical resources survey form (DPR Form 523) with a rating of 1through 5).

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

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

e. 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:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k); or

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code 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.]

For the project to have "a substantial adverse change" on a historical resource, it would have to demolish, destroy, relocate, or alter the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired (CEQA Guidelines Section 15064.5(b)). Archaeological sites may qualify as historical resources under CEQA (CEQA Guidelines Section 15064.5(c)(1)).

Generally, for purposes of CEQA, the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register or an officially recognized local register of historical resources, or its identification in a historical resources survey meeting the requirements of PRC Section 5024.1(g).

The significance criteria listed above are consistent with the significance criteria for cultural resources and tribal cultural resources presented in Appendix G of the updated 2019 CEQA Guidelines, with one exception. The significance criterion regarding destruction of a unique paleontological resource or site or unique geologic feature has been moved to Section VII, Geology and Soils in the revised Appendix G checklist, but will be addressed in this section in adherence to the City of Oakland's CEQA Thresholds of Significance Guidelines.

2. Project Impacts

The following section discusses potential impacts to cultural resources associated with implementation of the proposed demolition, remediation, and redevelopment project.

a. Historical Resources.

Impact CUL-1: Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA. (S)

The proposed project would demolish a substantial portion of Building #1, with the exception of the main portion of the façade and approximately 33 feet of the building sides as shown on Figures 3-5 and Figures 3-7, and all the remaining seven buildings, the railroad spur and water

tank on the project site. Buildings #4, #8, #17, #18, #20, #21, and the water tank are not historical resources as these structures are either too recent or otherwise lack significant historical associations and do not appear eligible for inclusion in the California or Oakland registers individually or as contributing elements to a historic district.

Building #1 and Building #2 are identified as historical resources for the purposes of CEQA due to one or more of the following qualifying factors: (1) listing in, or eligibility for listing in the NRHP, CRHR, and/or Oakland Register; (2) a rating of 1-5 in a historical resource survey recorded on Department of Parks and Recreation Form 523; and (3) contributing to the eligibility of a NRHP-eligible district (57th Avenue Industrial District API). Building #1, Building #2, and the API to which they contribute are historic properties for purposes of Section 106 as they are eligible for listing in the NRHP as discussed below.

As described above, based on the OHP and OCHS evaluations of buildings at the project site and the LSA 2019 Cultural Resources Study, the project site contains the following four "historical resources" as defined in CEQA: Building #1, Building #2, the railroad spur, and the 57th Avenue Industrial District API. Building #1 is listed in the California and Oakland registers and is a contributor to the 57th Avenue Industrial District API. Although Building #2 has been assigned a "D" property rating and a contingency rating of "C" (a building of Minor Importance with the potential to be a building of Secondary Importance through repair or renovation), it is listed in the Oakland Register, and is a historical resource under CEQA, as it is a contributor to the 57th Avenue Industrial District API. Although not recorded by the OCHS, the circa 1920s railroad spur on the project site, which once connected the project site with the WPRR, is also a contributor to the API as it is closely associated with the industrial development and operations of the project site and is a historical resource for purposes of CEQA.

The 57th Avenue Industrial District API is a National Register-eligible district recorded by OCHS and includes approximately 20 contributing buildings dating primarily from circa 1910s-1930s. Demolition of the majority of Building #1 and all of Building #2 and removal of the railroad spur would adversely impact the API, as the project would remove two important contributing elements to the API, thereby adversely affecting the integrity of the resource and its ability to convey its period of significance, circa 1910s-1940s. Additionally, Building #1 is the northernmost contributing building in the API on International Boulevard and thus provides a visual "anchor" for the API.

As described in Chapter 3.0, Project Description, the proposed project includes the retention of the two-story office portion of Building #1 (i.e., the street-facing façade that is an example of early-20th century utilitarian Classical Revival inspired industrial architecture) that faces International Boulevard and was built in 1922. Although the remaining portion of Building #1 will retain integrity of location, the overall integrity of Building's #1's design, materials, workmanship, feeling will be significantly reduced by demolition of the single-story warehouse portion or approximately 94 percent of the building. Integrity of feeling and setting will be further

compromised by the proposed new building of modern design that will be constructed around the bulkhead and can be viewed from International Boulevard. As proposed, the demolition of Building #2 will completely remove this historic property's integrity of location, design, setting, materials, workmanship, feeling, and association. The railroad spur would also be removed. Accordingly, the proposed project will alter the characteristics of the historic properties of Buildings #1 and #2 that qualify them for inclusion in the NRHP as described in 36 CFR 800.5(a)(2). Therefore, the proposed project would result in an adverse effect to Building # 1 and Building #2.

The proposed project will remove two of the 18 remaining contributing elements to the 57th Avenue Industrial District API, and Buildings #1 and #2 are located at the northern edge of the API and provide a visual anchor for the district. A more concentrated collection of API contributors is located along 57th Avenue (see Figure 4.1-1 for the location of the API). As an example of early-20th century utilitarian Classical Revival inspired industrial architecture, the bulkhead or office portion of Building #1 that is to be retained includes the elements that exemplify the style. However, the long rectangular, single-story, steel-framed and masonry vernacular industrial building to the rear of the office portion would be removed as part of the project, as would all of the Building #2 industrial building. The retention of the most visible office portion of Building #1 as well as the remainder of the buildings in the API would assist in maintaining the API's overall integrity of location, setting, design, materials, workmanship, feeling, and association, and retaining the API's characteristics as an assemblage of 1910s-1950s industrial properties that qualify it as a NRHP-quality district. With the retention of the bulkhead portion of Building #1 as a highly visible contributing element, the proposed project would result in a less-than-significant impact to the API.

In addition to the demolition of existing structures and excavation and removal of soils to remediate hazardous materials at the project site, the proposed project also includes construction of an approximately 534,200 square-foot combination industrial, warehouse and office building with an additional 93,520 square feet of landscaping, 357 parking stalls and 85 truck docks. The warehouse building would be approximately 42 feet in height. The two-story main entry to the warehouse building would be constructed on the northeast corner of the site. The design and materials for the main entrance would be architecturally compatible but differentiated from the Classical Revival-themed style and materials used for the Building #1 façade (see Figures 3-6, 3-7, and 3-8).

The large, new warehouse building of modern design and construction would span the majority of the site's boundary facing International Boulevard. The building's southeast elevation, containing the truck bays, would also be visible. The warehouse would be "set back" approximately 26 feet from the second floor of the façade as shown in Figure 3-6 on the proposed north elevation diagram. As shown in Figure 3-8, the slightly higher upper portion of the new warehouse can be seen above the retained 38-foot-tall, two-story façade of Building #1. With the introduction of the new building of modern design, the integrity of feeling and setting of

the northern portion of the API will be reduced. Although the proposed project will rehabilitate the retained two-story portion of the street-facing façade, the existing built environment on the site and in the northern portion of the API will be altered by the project. The proposed massing and visual appearance of the proposed construction would sharply contrast with the massing and location of the present industrial buildings on the site that date from the 1910s-1950s.

Pursuant to Policy 3.7 of the Historic Preservation Element of the Oakland General Plan, SCA-CULT-4: Property Relocation (#36) applies to all projects that involve demolition of a Potential Designated Historic Property (PDHP) or a CEQA Historic Resource, i.e., Building #1 and Building #2. SCA-CULT-4 requires a project applicant to make a good faith effort to relocate a historic resource to a site acceptable to the City. Due to the existing hazardous materials and contamination within each building, the unstable geotechnical conditions of each building, the size and building materials (unreinforced masonry), and their contribution in regards to location and setting to the API, relocation of a portion or all of Building #1 and Building #2 to another site within the API is not feasible, and not further considered as a mitigation measure.

As described in Chapter 3.0, Project Description, the San Leandro Street access variant would include the same demolition of existing structures, retention of the Building #1 bulkhead, remediation and warehouse design and development as the project. However, as shown on Figure 3-12, the project site would be expanded to include leased Union Pacific right-of-way along the southwestern site boundary sufficient to allow project-related truck traffic to access the site to and from San Leandro Street via 54th Avenue. Implementation of the access variant would also require use of a small (0.07 acre) industrial site fronting on 54th Avenue zoned CIX-2. The railroad right-of-way and the small industrial site are outside the boundaries of the API and do not contain historical resources. Therefore, impacts associated with the proposed project would be the same for the access variant.

Implementation of Mitigation Measures CULT-1a: Historical Context Report, CULT-1b: Contribution to Façade Improvement Program,[31] CULT-1c: Installation of a Commemorative Marker and CULT-1d: Preparation of a Historic Property Treatment Plan would partially reduce the impacts to Buildings #1 and #2 and the 57th Avenue Industrial District API resulting from the loss of contributing elements to an API, but the impact would not be mitigated to a less-than-significant level. Demolition of the majority of Building #1 and all of Building #2 would result in significant and unavoidable impacts to these historical resources after mitigation.

> Mitigation Measure CULT-1a: Historical Context Report. Prior to approval of demolition and construction-related permits, the project applicant shall retain a qualified cultural resources consultant to prepare a historical context report and photo-documentation of the historic buildings on the project site and the 57th Avenue Industrial District API. The report shall

[31] The Façade Improvement Program and formula to determine the amount to be paid by the project application was established by the Landmarks Preservation Advisory Board and has been used consistently as mitigation for demolition of historic and contributing structures.

include a description of the resources' historical significance within the context of Oakland's historical industrial development during the early-20th century as well their historical architectural significance within the context of utilitarian, unreinforced masonry buildings in Oakland. The report shall also include a discussion of the project site's historical association with the former KGO radio station. Oral histories of those who worked at the GE plant, or those who otherwise have knowledge of the project site's history, shall be sought out and, if located, findings incorporated into the historical context report, as appropriate. Recordings of the oral histories that result from this mitigation shall also be made available to the public by the City or a local historical archive as a digital file (e.g., mp3). Photo-documentation of the project site buildings and the API shall be included in the report to provide additional descriptive data and a permanent visual record of the resources. The photo-documentation shall be done according to Historic American Building Survey/Historic American Engineering Record (HABS/HAER) guidelines.[32] Based on the curation requirements of the receiving institution, either hard copies and/or electronic copies of the report and photo-documentation shall be offered to the Oakland Heritage Alliance, the Oakland Cultural Heritage Survey, the Oakland Public Library, the Environmental Design Library, Archives, and Visual Resource Center at the University of California, Berkeley, and the Northwest information Center. The applicant shall also be responsible for ensuring that the report and photo-documentation are available to the general public via the internet.

Mitigation Measure CULT-1b: Contribution to Façade Improvement Program. Prior to approval of demolition permits, the project applicant shall contribute to the City's Façade Improvement Program. Funds collected should be reserved for buildings within the 57th Avenue Industrial District API for a period of two years. The use of Façade Improvement Program funds for use in the API is appropriate given the location, visibility and contribution of Building #1 and Building #2 within the 57th Avenue Industrial District API. By directing that the funds be used in the 57th Avenue Industrial District API, the mitigation will have a direct effect on the remaining historic resources in the District, including the remaining portion of Building #1, as well as the District itself. The mitigation measure is devised to reflect this and provide more specificity regarding the process for use of the funds. In accordance with the City's Façade Improvement Program, the amount of the contribution required to be paid by the project applicant under this mitigation measure (based upon the calculation for obtaining façade improvement grants) shall be based on the following:

- $10,000 for the first 25 feet of two façades of each building and $2,500 per 10 additional linear feet of the same two façades beyond the first 25 feet.
- There shall be a 20 percent increase added for each building designated as a Historical Resource under CEQA.
- The total for each building shall be multiplied by 2 for being located within an API.

[32] National Park Service, 2001. HABS/HAER Photographs: Specifications and Guidelines. Washington, D.C.

For purposes of this mitigation, the length of the main, International Boulevard-facing façade of Building #1 is 135 feet minus 129 feet, which is the length to be retained, for a total of 6 feet. The length of the secondary, southeast-facing façade of Building #1 is 585 feet minus 33 feet, which is the portion to be retained, for a total of 552 feet. As 25 feet from two facades will not be removed by the project, the $10,000 would not apply to the front façade of Building #1; however, it would apply to the removal of 552 feet of the southeast-facing façade.

For Building #2, the length of the main, International Boulevard-facing façade is 110 feet, and the length of the secondary, southeast-facing façade is 450 feet.

The following calculation results in a total contribution of $684,000.

5441 International Boulevard - Building #1:	
Secondary façade: $10,000 + ($2,500 x 552 feet)/10 feet	$138,000
5441 International Boulevard - Building #2:	
Main façade: $10,000 + ($2,500 x 85 feet)/10 feet	$31,250
Secondary façade: $10,000 + ($2,500 x 425 feet)/10 feet	$116,250
	$147,000
Building #1 total ($138,000) + Building #2 total ($147,500)	*$285,000*
CEQA Historical Resources – increase by 20%: $335,000 x 1.2	$342,000
Located in an API – increase by two times	$684,000

The Façade Improvement Program contribution required hereunder shall be payable upon issuance of the first demolition permit for the project. Funds collected under this mitigation shall be designated for the repair or improvement of façades within the historic 57th Avenue Industrial District API for a two-year period. After that time, all remaining funds shall be eligible for citywide Façade Improvement Program expenditures. All rehabilitation efforts or façade improvements under this Program shall be undertaken using the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Administration of this Program shall be overseen by OCHS staff.

Mitigation Measure CULT-1c: Installation of a Commemorative Marker. To reduce the significant and unavoidable impact of the adverse effect on Building #1 and loss of Building #2 and the substantial adverse change in the historic significance of the 57th Avenue Industrial District API, the project applicant shall, prior to the issuance of the demolition permit for the project, install a commemorative marker or plaque on the project site. The marker or plaque shall be made of high quality, durable, all-weather materials, and describe the history of the project site and the 57th Avenue Industrial District; examples may be taken from the Bay Trail Series concerning historic industrial buildings. The marker or plaque shall be installed on the project site to allow for high public visibility from International Boulevard.

The content, materials, and appearance of the commemorative marker or plaque shall be developed by a consultant experienced in urban architectural interpretive displays, and shall be done in consultation with OCHS staff. At the time of installation, the project applicant shall provide the City with a plan that details ongoing review and maintenance of the marker or plaque. Additionally, for use in case of damage to the first marker or plaque, the applicant shall have prepared and stored a spare to be produced at the same time the first marker is manufactured.

Mitigation Measure CULT-1d: Preparation of a Historic Property Treatment Plan. The project applicant shall prepare a Historic Property Treatment Plan for the retained portion of Building #1, in coordination with the City and OCHS staff and prior to the issuance of the demolition permit for the project. At a minimum, the Historic Property Treatment Plan shall identify the portion of the building to be preserved, plans for maintaining and protecting that portion of the building during demolition and construction, and rehabilitation plans. The plan shall be prepared with oversight by a Preservation Architect who meets or exceeds the Secretary of the Interior's Professional Qualifications Standards for Architectural History and Historic Architecture (48 CFR 44738-9).

The City shall be responsible for ensuring that Mitigation Measures CULT-1a, CULT-1b, CULT-1c and CULT-1d are completed as a condition of the demolition permit. The applicant shall be responsible for funding the mitigation measures identified herein.

Implementation of Mitigation Measures CULT-1a, CULT-1b, CULT-1c, and CULT-1d will mitigate the cultural resources impact to a degree, but not to a level that is less than significant and the impact would remain significant and unavoidable. (SU)

b. Archeological Resources and Human Remains. The proposed project and access variant could have a significant impact related to previously unidentified historical and archaeological resources if project-related ground-disturbing activities were to cause a substantial adverse change in the significance of an archaeological deposit that qualifies as a historical or unique archaeological resource. A substantial adverse change in the significance of these resources would occur from their demolition, destruction, or alteration of the deposit in a manner that its significance would be materially impaired (CEQA Guidelines Section 15064.5(b)). As noted in the setting section, the review of geologic and soils maps indicated a moderate potential for buried precontact archaeological deposits. The potential for encountering such intact deposits is lessened due to subsequent development on the site that include the construction and operation of the GE plant from the 1920s to the 1980s and subsequent soil remediation. Historical Sanborn maps do not indicate a potential for significant, buried historic period archaeological deposits in the site (e.g., privies or trash dumps) that pre-date construction of the GE plant in the 1920s.

Because the potential exists for a substantial adverse change in the significance of an archeological resource to occur during project construction, implementation of the proposed project could result in a significant impact. Implementation of SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33) and SCA-CULT-2: Archaeologically Sensitive Areas – Pre-Construction Measures (#34) would reduce potential project-related significant impacts to archeological deposits to a less-than-significant level by requiring the recovery of scientifically consequential information from at-risk resources to offset their potential loss.

The project would have a significant effect on the environment if it results in disturbance to human remains, including those interred outside of formal cemeteries. Native American skeletal remains are known to co-occur at archaeological sites in Alameda County. There is the possibility of encountering such remains, either in isolation or with prehistoric archaeological deposits, during ground-disturbing activities on the project site.

Implementation of SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33), SCA-CULT-2: Archaeologically Sensitive Areas – Pre-Construction Measures (#34), and SCA-CULT-3: Human Remains – Discovery During Construction (#35) would reduce the level of the potential impacts to unanticipated discovery of human remains during construction. The SCAs would require the recovery of scientifically consequential information from at-risk resources, including human remains, in consultation with tribal representatives, to offset their potential loss. Therefore, this impact would be reduced to a less-than-significant level.

c. Paleontological Resources. The project site is located on developed land in a highly industrialized and urban area that is relatively flat and has no unique geologic features. Therefore, the proposed project would have no impacts related to unique geologic features.

As noted in the setting section, the proposed project site is generally blanketed with up to 5 to 6 feet of fill material, and deeper fill was encountered to a depth of about 18 feet in the southern portion of the project site. Deeper fill may be present in other areas of the project site as well. Geotechnical recommendations that would be implemented during construction of the proposed project include the removal of existing fill and replacement with engineered fill to support the proposed warehouse building. Recent fill is considered to have a low sensitivity for paleontological resources due to its already disturbed nature. Excavation of native soil (Holocene alluvium) would occur during construction of the proposed project for the removal of contaminated soils and for construction of subsurface utilities. Due to the few known fossils that have been identified in Holocene-aged sediments in Alameda County, the native soil beneath the project site is considered to have a low paleontological sensitivity. With implementation of SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33) described above, and the proposed project and access variant would have a less-than-significant impact related to paleontological resources.

d. Tribal Cultural Resources. No tribal cultural resources have been identified on the project site, and as discussed previously, the archeological potential of the site is moderate to low based on the results of previous development and excavation. As noted in the setting section above, all tribal representatives identified by the NAHC were contacted by LSA via letters sent by email and regular mail on January 2, 2019, in accordance with the provisions of Assembly Bill 52.[33] The letters included a brief description of the project and project site, and a map indicating the project location. The letters requested that the tribe respond if it has information or concerns regarding cultural resources at the project site. Per Public Resources Code Section 21080.3.1(d), a request for consultation must be submitted within 30 days of receipt of the letter. No requests for consultation were received during the 30-day period. With implementation of SCA-CULT-1: Archaeological and Paleontological Resources – Discovery During Construction (#33), SCA-CULT-2: Archaeologically Sensitive Areas – Pre-Construction Measures (#34), and SCA-CULT-3: Human Remains – Discovery During Construction (#35), potential impacts to tribal cultural resources would be less than significant.

3. Cumulative Impacts

Aside from the proposed project, there are no past, current, or reasonably foreseeable future projects under review by the City that may impact historical resources in the vicinity of the project site, including the 57th Avenue Industrial District API. Taken collectively, however, the proposed project and other reasonably foreseeable future projects in the City involving demolition of industrial/warehouse/manufacturing historic resources (such as the 9th Avenue Terminal at Brooklyn Basin, Oakland Army Base buildings, Southern Pacific rail yards and shop, Mutual Grocery Co. warehouse, Montgomery Ward store and warehouse, Naval Supply Center, Fleischman Yeast factory, Red Star Yeast-Consumers Yeast and Vinegar Works, and S&W Fine Foods Inc., warehouse) contribute to on-going impacts to historical industrial resources in the City. All of these City-identified resources include examples of Oakland's early-20th century industrial development. Implementation of the proposed project or access variant, therefore, is anticipated to have a significant and unavoidable cumulative impact to historical resources in Oakland when viewed in association with other, reasonably foreseeable demolitions of significant early-20th century industrial resources in the City.

Impact CULT-2: Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA and would contribute to a significant cumulative impact to historical resources in Oakland. (S)

Mitigation Measure CULT-2: Implementation of Mitigation Measures CULT-1a, CULT-1b, and CULT-1d will mitigate this cumulative impact to a degree, but not to a level that is less than significant and this cumulative impact would remain significant and unavoidable. (SU)

[33] LSA Associates Inc., 2019. Appendix D.

4.2 HAZARDS AND HAZARDOUS MATERIALS

This section provides an overview of potential hazards and hazardous materials issues at and near the project site and assesses potential impacts to public health and safety and the environment that could result from implementation of the proposed project or the San Leandro Street access variant. Standard Conditions of Approval (SCAs) and mitigation measures to reduce significant impacts are identified, where appropriate. This analysis is based on information obtained from: 1) a review of reports related to environmental investigations and remediation of the project site and in particular the Draft Final Remedial Design and Implementation Plan Addendum ("RDIP Addendum" located in Appendix C of this EIR),[1] and 2) a review of the information provided as part of the project application and other published materials.

A. Setting

This section describes the existing conditions related to hazards and hazardous materials at and near the project area, as well as the applicable regulatory agency framework and local policies.

1. Potential Sources of Hazardous Materials at the Project Site

Past transformer manufacturing and electrical equipment maintenance and repair operations at the project site resulted in releases of hazardous materials including polychlorinated biphenyls (PCBs), petroleum hydrocarbons, and volatile organic compounds (VOCs) that have impacted the subsurface of the project site. Elevated concentrations of metals have also been detected in fill material at the project site.[2]

Environmental investigations and remediation activities have been performed at the project site since 1980, following the identification of PCB-impacted surface soil by the Department of Toxic Substances Control (DTSC) in 1979. Past investigations indicated that PCBs were widely distributed in shallow soil across the project site, and an area of oil-saturated soil was identified near a former tank farm in the southeastern portion of the project site. In 1980, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), in coordination with the California Department of Health Services (the predecessor entity to DTSC) and the U.S. Environmental Protection Agency (USEPA), issued a Cleanup and Abatement Order (CAO No. 80-011) for the project site that required the abatement of PCB discharge. Remedial actions commenced in 1981 and included a groundwater extraction and oil removal system, surface capping, stormwater controls, and soil excavation and disposal.[3] In 1989, DTSC issued a

[1] EKI Environment and Water, Inc., 2019a. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California. August 26, revised October 4.

[2] Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, GE Oakland Site, Oakland, California, June.

[3] Ibid.

Consent Order (HSA 88/89-035)[4] which required GE to implement operation, maintenance, and monitoring requirements, and develop a remedy to reduce or eliminate PCBs in soil. Also in 1989, the Regional Water Board determined that the groundwater extraction and oil removal system was recovering VOCs and requested that GE conduct an investigation into the source(s) of VOC contamination on the project site. In 1990, GE began including the analysis of VOCs in their groundwater monitoring program.[5] In 1993, a Covenant to Restrict Use of Property (Covenant)[6] was recorded for the project site that requires the existing asphalt and bentonite-soil caps to be maintained in place and prohibited penetration of either cap without first notifying DTSC and submitting a health and safety plan to DTSC. In 1997, DTSC issued a Consent Order (HSA 96/97-061)[7] to GE which superseded the 1989 Consent Order, and indicated that PCBs had been characterized in previous investigations and required additional investigation and remediation of VOC contamination. GE continues to perform investigation and remediation of the project site under the oversight of the DTSC in accordance with the 1997 Consent Order. The USEPA also has an environmental oversight role at the project site with respect to PCBs.[8]

Additional investigation and remediation (e.g., soil removal) activities were performed at the project site between 1998 and 2010, and a Remedial Action Plan (RAP) for the project site was approved by DTSC in 2011. In 2013, DTSC approved the RDIP for the project site and USEPA issued a conditional approval of the Toxic Substances Control Act (TSCA) Application for Risk Based PCB Cleanup.[9]

The remedy developed in the RAP and RDIP for the project site is being implemented by GE in two phases. Phase I was implemented between 2013 and 2015 and consisted of: (1) targeted soil excavations for VOCs and PCBs; (2) installation and operation of a groundwater extraction and treatment system (GETS); (3) capping of un-capped areas of the site; (4) stormwater management to mitigate potential migration of impacted sediments off-site; (5) monitored natural attenuation of off-site groundwater; and (6) monitoring and maintenance of the remedial measures implemented thus far. Phase II of the remedy was proposed to proceed after removal of the above-grade building structures and consists of placement of additional capping materials over existing asphalt areas and some former building footprints if they remain in place, and abandoning the subsurface stormwater system.[10]

[4] Department of Toxic Substances Control (DTSC), 1989. Docket # HSA 88/89-035, Consent Order, May 18.

[5] Department of Toxic Substances Control (DTSC), 1997. Docket # HSA 96/97-061, Consent Order, June 25.

[6] Department of Toxic Substances Control (DTSC), 1993. Covenant of Deed Restriction, GE-Oakland Site, Oakland, California, April 19.

[7] Department of Toxic Substances Control (DTSC), 1997. Op. cit.

[8] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.

[9] Ibid.

[10] EKI Environment and Water, Inc., 2018. Evaluation of the Proposed Redevelopment with respect to the Requirements of the Approved Remedy, Bridge Point Oakland, 5441 International Boulevard, Oakland, California, September 6.

Structures on the project site also contain hazardous building materials including asbestos-containing materials (ACMs), paints containing heavy metals (e.g., lead, zinc, chromium, cadmium, and mercury) and PCBs, and chemically treated wood.[11] PCBs have also been detected in concrete floor slabs, wood, and brick building materials, indicating that releases of PCBs have contaminated building materials. VOCs and semi-volatile organic compounds (SVOCs) have also been detected in concrete floor slabs. Sumps and a tank with residual sludge/debris containing PCBs and metals have also been identified at the project site, and piping that contained pyranol (an oil containing PCBs) may still be present at the project site.[12]

2. Regulatory Setting

The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous federal, State, and regional laws and regulations. Federal, State, and regional agency's jurisdiction in the management of hazards and hazardous materials, as applicable to the proposed project, are described below.

a. Federal.

U.S. Environmental Protection Agency. The USEPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations. The legislation includes the Resource Conservation and Recovery Act of 1976, the Superfund Amendments and Reauthorization Acts of 1986, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and the TSCA of 1976. The USEPA provides oversight for site investigation and remediation projects, and has developed protocols for sampling, testing, and evaluation of solid wastes. USEPA has an environmental oversight role at the project site with respect to the investigation and remediation of PCBs under TSCA.

Occupational Safety and Health Administration. Worker health and safety is regulated at the federal level by the Occupational Safety and Health Administration (OSHA). The Federal Occupational Safety and Health Act of 1970 authorizes states to establish their own safety and health programs with OSHA approval. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos.

[11] SCA Environmental, Inc., 2010. Summary Report: Phase 2 Hazardous Materials Survey, Confidential Site Oakland, California, 2nd Revision, June 17.

[12] Arcadis, 2009. General Electric Company, Phase I Building Assessment Report, East 14th Street Facility, Oakland, California, January.

Department of Transportation. 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 (DOT) 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 both RCRA and DOT regulations. The California Highway Patrol, California Department of Transportation (Caltrans), and the DTSC are responsible for enforcing federal and state regulations pertaining to the transportation of hazardous materials.

b. State. The State agencies described below regulate hazardous materials and waste that may occur on or around the project site.

Department of Toxic Substances Control. In California, the DTSC is authorized by the USEPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal requirements. Most State hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). The DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public health, and establishes cleanup levels for subsurface contamination that are equal to or more restrictive than federal levels. The DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California. DTSC is the lead oversight agency for the investigation and remediation of hazardous materials contamination on the project site.

State Water Resources Control Board. The State Water Resources Control Board (State Water Board) enforces regulations on how to implement UST programs. It also allocates monies to eligible parties that request reimbursement of funds to clean up soil and groundwater pollution from UST leaks. The State Water Board also enforces the Porter-Cologne Water Quality Act through its nine regional boards, including the Regional Water Board, described below.

California Air Resources Board. The California Air Resources Board (CARB) is responsible for coordination and oversight of State and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. The CARB has developed State air quality standards, and is responsible for monitoring air quality in conjunction with the local air districts.

California OSHA. Worker health and safety protections in California are regulated by the California Department of Industrial Relations, which includes the Division of Occupational Safety and Health, which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program, and provides consultant assistance to employers. California standards for workers dealing with hazardous materials are contained in California Code of Regulations Title

8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

c. Regional. The following regional agencies have regulatory authority over the project's management of hazardous materials and waste.

San Francisco Bay Regional Water Quality Control Board. The Regional Water Board provides for protection of state waters in accordance with the Porter-Cologne Water Quality Act of 1969. The Regional Water Board can act as lead agency to provide oversight of sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions. The Regional Water Board also developed Environmental Screening Levels (ESLs) [13] to help expedite the preparation of environmental risk assessments at sites where contaminated soil and groundwater have been identified.

Bay Area Air Quality Management District. The Bay Area Air Quality Management District (BAAQMD) has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of the USEPA and the CARB). The BAAQMD is responsible for preparing attainment plans for nonattainment criteria pollutants, control of stationary air pollutant sources, and issuance of permits for activities that include asbestos demolition and renovation activities (District Regulation 11, Rule 2).

BAAQMD Regulation 8 Rule 40 applies to excavation of soil contaminated with VOCs at concentrations exceeding 50 parts per million by weight, and includes requirements for notification of BAAQMD prior to excavation, and requirements for soil management during excavation and handling of VOCs contaminated soils to minimize emissions of VOCS into the atmosphere.

BAAQMD Regulation 8 Rule 47 requires permitting and treatment for emissions from active (e.g., with sub-slab depressurization) vapor mitigation systems. BAAQMD Regulation 2 Rule 1 Section 412 requires that the BAAQMD provide public notice if a proposed source of emissions is located within 1,000 feet of the outer boundary of a K-12 school.

Alameda County Environmental Health. The ACDEH is the primary agency responsible for local enforcement of State and federal laws pertaining to hazardous materials and hazardous waste management. In Oakland, the ACDEH is the Certified Unified Program Agency (CUPA), responsible for coordination of the following programs: Hazardous Materials Business Plan (HMBP) Program, Hazardous Waste Generator Program, UST Program,

[13] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2019. Environmental Screening Levels. January 24. Available at: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html, accessed March 4, 2019.

California Accidental Release Program (Cal ARP), Tiered Permitting Program, and Aboveground Storage Tank Program. The role of a CUPA is to consolidate, coordinate, and makes consistent the administrative requirements, permits, inspections, and enforcement activities associated with the regulation of hazardous materials and hazardous wastes. The ACDEH also provides regulatory oversight for investigation and cleanup of leaking underground fuel tank sites and spills, leaks, investigation, and cleanup sites.

Chapter 6.95 of the Health and Safety Code establishes minimum statewide standards for HMBPs, including basic information on the location, type, quantity, and health risks of hazardous materials and/or waste. Each business must prepare a HMBP if that business uses, handles, or stores a hazardous material and/or waste or an extremely hazardous material in quantities greater than or equal to the following:

- 55 gallons for a liquid,
- 500 pounds of a solid,
- 200 cubic feet for any compressed gas,
- Threshold planning quantities of an extremely hazardous substance.

The Cal ARP Program requires any business that handles more than threshold quantities of an extremely hazardous substance to develop a Risk Management Plan (RMP). The RMP is implemented by the business to prevent or mitigate releases of regulated substances that could have off-site consequences through hazard identification, planning, source reduction, maintenance, training, and engineering controls.

Lead, Asbestos, and Other Hazardous Building Materials. Prior to 1978, lead compounds were commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., may cause cancer), a known teratogen (i.e., causes birth defects), and a reproductive toxin (i.e., can cause sterility). Prior to the 1980s, building materials often contained asbestos fibers, which are a known human carcinogen. Due to its strength and fire resistance, asbestos was frequently incorporated into insulation, roofing, siding, textured paint and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes.

PCBs were used as coolants and lubricants in transformers, capacitors, heating/cooling equipment, and other electrical equipment, and were also used as plasticizers in paints, plastics, rubber products, and caulking. Although manufacturing of PCBs has been banned in the United States since 1979, they may still be found in older electrical equipment and other building materials such as light ballasts and caulking. PCBs have been demonstrated to cause cancer and a variety of other adverse health effects in animals, including effects on the immune system, reproductive system, nervous system, and endocrine system. Studies in humans support evidence for potential carcinogenic and non-carcinogenic effects of PCBs. PCBs and PCB-contaminated items require proper off-site transport and disposal at a facility that can accept such wastes.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury, a heavy metal) are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

d. City of Oakland. The following section summarizes relevant hazards and hazardous materials related policies and standards from the General Plan and the City's SCAs.

General Plan. The Safety Element of the City of Oakland General Plan[14] contains the following policies and action items related to hazardous materials:

Policy HM-1**:** Minimize the potential risks to human and environmental health and safety associated with the past and present use, handling, storage and disposal of hazardous materials.

Action HM-1.1: Continue to exercise unified-program responsibilities, including the issuance of permits for and inspection of certain industrial facilities, monitoring the filing of disclosure forms and risk-management plans, hazardous-materials assessment reports and remediation plans, and closure plans by such facilities. (The reader should note that Action HM-1.1 may be out of date as ACDEH has assumed the CUPA responsibilities for the City of Oakland.)

Action HM-1.2: Continue to enforce provisions under the zoning ordinance regulating the location of facilities which use or store hazardous materials.

Action HM-1.3: Consider adopting a health and safety protection overlay zone or set of procedures to ensure that new activities which use or store hazardous materials on a regular basis near residential zones do not endanger public health or the environment.

Action HM-1.4: Continue to participate in the Alameda County Waste Management Authority and, as a participant, continue to implement policies under the county's hazardous-waste management plan to minimize the generation of hazardous wastes.

Policy HM-2: Reduce the public's exposure to toxic air contaminants through appropriate land use and transportation strategies.

Action HM-2.1: Continue to enforce performance standards controlling the emission of air contaminants, particulate matter, smoke and unpleasant odors.

[14] City of Oakland, 2004. City of Oakland General Plan, Safety Element. Amended 2012.

Action HM-2.2: Continue to discourage the development of sensitive receptors adjacent to significant sources of air contaminants and encourage industry to adopt best-available control technologies to reduce air contaminants.

Action HM-2.3: Continue to support the efforts of the Bay Area Air Quality Management District's air-toxics program, including the review and permitting of stationary sources, identification of emitting facilities, promulgation of categorical control measures, and monitoring and inventory of emissions.

Policy HM-3: Seek to prevent industrial and transportation accidents involving hazardous materials, and enhance the city's capacity to respond to such incidents.

Action HM-3.1: Continue to enforce regulations limiting truck travel through certain areas of the city to designated routes, and consider establishing time based restrictions on truck travel on certain routes to reduce the risk and potential impact of accidents during peak traffic hours.

Action HM-3.2: Continue to support the prohibition of trucks on I-580 through Oakland.

Action HM-3.3: Support state and federal legislative efforts that seek to increase the safety of transporting hazardous materials.

Action HM-3.4: Continue to rely on, and update, the city's hazardous materials area plan to respond to emergencies related to hazardous materials.

Action HM-3.5: Continue to offer basic emergency-response education and training to local businesses.

Emergency Evacuation Routes. Figure 7.2 of the Safety Element of the City of Oakland General Plan[15] indicates that the emergency evacuation routes in the vicinity of the project site include International Boulevard and San Leandro Street.

Standard Conditions of Approval. The City has developed SCAs that are applied to projects when they receive discretionary planning-related approval. The SCAs related to hazards and hazardous materials that apply to the project are presented below. SCA-AIR-1: Asbestos in Structures (#27) and SCA-AIR-4: Stationary Sources of Air Pollution (Toxic Air Contaminants) (#25) also address impacts related to releases of hazardous materials, and are listed in Section 4.4, Air Quality.

[15] Ibid.

SCA-HAZ-1: Hazardous Materials Related to Construction (#43)
Requirement: The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health. These shall include, at a minimum, the following:

a. Follow manufacture's recommendations for use, storage, and disposal of chemical products used in construction;
b. Avoid overtopping construction equipment fuel gas tanks;
c. During routine maintenance of construction equipment, properly contain and remove grease and oils;
d. Properly dispose of discarded containers of fuels and other chemicals;
e. Implement lead-safe work practices and comply with all local, regional, state, and federal requirements concerning lead (for more information refer to the Alameda County Lead Poisoning Prevention Program); and
f. If soil, groundwater, or other environmental medium with suspected contamination is encountered unexpectedly during construction activities (e.g., identified by odor or visual staining, or if any underground storage tanks, abandoned drums or other hazardous materials or wastes are encountered), the project applicant shall cease work in the vicinity of the suspect material, the area shall be secured as necessary, and the applicant shall take all appropriate measures to protect human health and the environment. Appropriate measures shall include notifying the City and applicable regulatory agency(ies) and implementation of the actions described in the City's Standard Conditions of Approval, as necessary, to identify the nature and extent of contamination. Work shall not resume in the area(s) affected until the measures have been implemented under the oversight of the City or regulatory agency, as appropriate.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44)
a. Hazardous Building Materials Assessment
Requirement: The project applicant shall submit a comprehensive assessment report to the Bureau of Building, signed by a qualified environmental professional, documenting the presence or lack thereof of asbestos-containing materials (ACMs), lead-based paint, polychlorinated biphenyls (PCBs), and any other building materials or stored materials classified as hazardous materials by State or federal law. If lead-based paint, ACMs, PCBs, or any other building materials or stored materials classified as hazardous materials are present, the project applicant shall submit specifications prepared and signed by a qualified environmental professional, for the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. The project applicant shall implement the approved recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.
When Required: Prior to approval of demolition, grading, or building permits
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

b. Environmental Site Assessment Required
Requirement: The project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment report if warranted by the Phase I report, for the project site for review and approval by the City. The report(s) shall be prepared by a qualified environmental assessment professional and include recommendations for remedial action, as appropriate, for hazardous materials. The project applicant shall implement the approved recommendations and

submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, state, or federal regulatory agency.
When Required: Prior to approval of construction-related permit
Initial Approval: Applicable regulatory agency with jurisdiction
Monitoring/Inspection: Applicable regulatory agency with jurisdiction

c. Health and Safety Plan Required
Requirement: The project applicant shall submit a Health and Safety Plan for the review and approval by the City in order to protect project construction workers from risks associated with hazardous materials. The project applicant shall implement the approved Plan.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

***d. Best Management Practices (BMPs) Required for Contaminated* Sites**
Requirement: The project applicant shall ensure that BMPs are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following:

i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements.
ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-HAZ-3: Hazardous Materials Business Plan (#45)
Requirement: The project applicant shall submit a Hazardous Materials Business Plan for review and approval by the City, and shall implement the approved Plan. The approved Plan shall be kept on file with the City and the project applicant shall update the Plan as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. Hazardous materials shall be handled in accordance with all applicable local, state, and federal requirements. The Hazardous Materials Business Plan shall include the following:

a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids.
b. The location of such hazardous materials.
c. An emergency response plan including employee training information.
d. A plan that describes the manner in which these materials are handled, transported, and disposed.

When Required: Prior to building permit final
Initial Approval: Oakland Fire Department
Monitoring/Inspection: Oakland Fire Department

B. Impacts and Mitigation Measures

This section describes and analyzes impacts related to hazards and hazardous materials that could result from implementation of the project or the San Leandro Street access variant. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies SCAs and/or mitigation measures to address these impacts as needed.

1. Criteria of Significance

Implementation of the project would result in a significant impact related to hazards and hazardous materials if it would result in any of the following:

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. Create a significant hazard to the public through the storage or use of acutely hazardous materials near sensitive receptors [**NOTE**: Per the BAAQMD CEQA Guidelines, evaluate whether the project would result in persons being within the Emergency Response Planning Guidelines (ERPG) exposure level 2 for acutely hazardous air emissions either by siting a new source or a new sensitive receptor. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers];

d. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

e. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 (i.e., the “Cortese List”) and, as a result, would create a significant hazard to the public or the environment;

f. Result in less than two emergency access routes for streets exceeding 600 feet in length unless otherwise determined to be acceptable by the Fire Chief, or his/her designee, in specific instances due to climatic, geographic, topographic, or other conditions;

g. Be 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, and would result in a significant safety hazard for people residing or working in the project area;

h. Be located within the vicinity of a private airstrip, and would result in a significant safety hazard for people residing or working in the project area;

i. Fundamentally impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or

j. 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.

The criteria above are from the City's CEQA Thresholds of Significance Guidelines, which are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist. Note that the California Natural Resources Agency adopted changes to the significance criteria for hazards and hazardous materials in Appendix G on December 28, 2018. The wording of the criteria in revised Appendix G changed slightly relative to the criteria above, however the content of the criteria is the same, with the exception of the criterion concerning hazards associated with private airstrips – that criterion is included above, but was eliminated from Hazards under the revisions to Appendix G.

2. Project Impacts

The following section begins with a discussion of the potential sources of hazardous materials associated with project or variant demolition, remediation, construction or operation and then discusses potential impacts associated with the project or variant. Mitigation measures and SCAs are identified to reduce potential impacts, as necessary.

The proposed project and access variant would involve demolition of the existing structures at the project site with the exception of the Building #1 bulkhead, as described in Chapter 3.0, Project Description. Existing above ground building materials to be retained on-site after redevelopment would include the Building #1 bulkhead, and concrete with PCBs less than 50 milligrams per kilogram (mg/kg) which would be crushed and reused on-site. The Building #1 bulkhead cleanup plan would include PCB abatement via paint removal or encapsulation.[16]

In October 2019, an RDIP Addendum[17] was prepared for the project site which summarizes conditions at the project site and outlines proposed remedial actions that would be implemented during and following redevelopment of the project site, consistent with Phase II of the remedy identified in the RAP and RDIP. In October 2019, the RDIP Addendum was submitted to DTSC and USEPA for review and approval. The RDIP Addendum summarized the findings of soil sampling performed in September 2018 under the existing and former buildings that: (1) have known high PCB concentrations in concrete, or (2) are proximate to other known locations with significant PCB impacts in soil. The RDIP Addendum indicates that based on the sampling results, PCB hotspots underneath building slabs are not expected at the project site, even where adjacent PCB hotspots have been identified or where high PCB concentrations in

[16] EKI Environment and Water, Inc., 2019. Op. cit.
[17] Ibid.

overlying concrete were previously detected.[18] Although PCB hotspots were not identified beneath buildings during the September 2018 soil sampling event, it is possible that unidentified PCB hotspots are present beneath buildings.

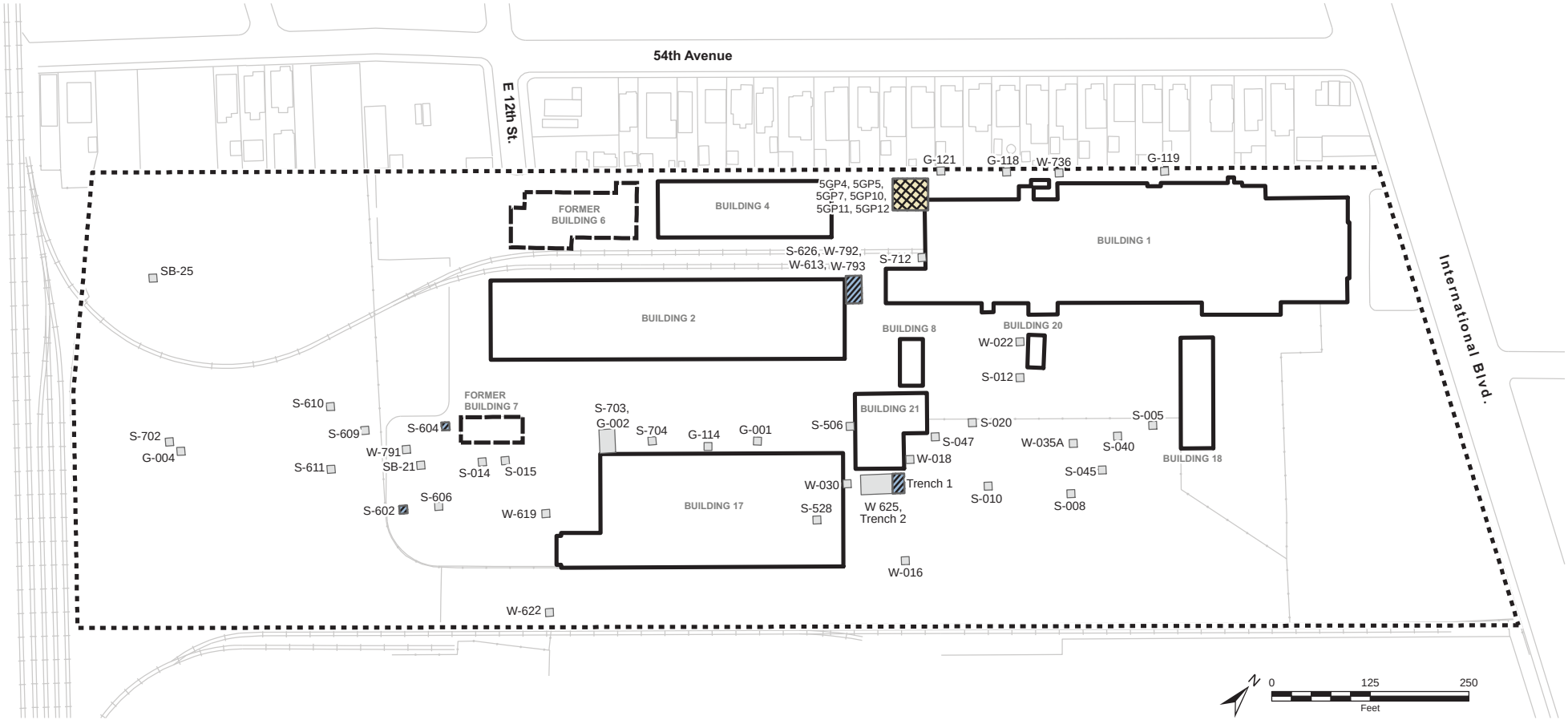
The RDIP Addendum indicates that no additional excavation is required as part of the approved remedy to meet remedial action objectives; however, because activities associated with the proposed project and variant would provide an opportunity to access contaminated soil (i.e., soil would be accessible when the cap would be temporarily removed during remediation and redevelopment), the RDIP Addendum proposes contaminated soil excavation and off-site disposal to improve overall site conditions. Five hotspots would be excavated where contaminated soil source removal may increase the effectiveness of the groundwater remedy and/or address a potential source of vapor intrusion. Areas where previously collected sampling data identified soil containing PCBs at levels exceeding 50 mg/kg in areas that may be disturbed by the remediation and redevelopment would also be excavated.[19] Figure 4.2-1 presents the areas of proposed remedial excavations.

The approved remedy calls for targeted excavation of elevated chlorinated VOCs (cVOCs) in soil characterized by trichloroethylene (TCE) concentrations in excess of 10 mg/kg. One such area was excavated by GE as part of Phase I of the remedy implementation. A remaining known area of elevated cVOCs is located between Buildings #1 and #4 near the northern boundary of the project site, where TCE was previously detected at a concentration of 21 mg/kg in soil at 13 feet below ground surface (bgs). A 40-foot by 45-foot area would be excavated to a depth of 20 feet bgs to remediate this cVOCs hotspot.[20]

Targeted excavation and off-site disposal of soil at four PCBs hotspot locations (where PCBs exceed 2,500 mg/kg) is proposed prior to redevelopment to mitigate potential impacts associated with PCBs leaching to groundwater within and near the proposed building footprint. The targeted excavations would address the highest previously detected concentrations of PCBs in soil in the following areas:[21]

- The former pyranol tank area outside of Building #2. A 20-foot by 35-foot area would be excavated to a depth of 25 feet.
- The location of the oil-water recovery sump adjacent to Building #21. A 15-foot by 25-foot area would be excavated to a depth of 5 feet.
- Two locations near former Building #7. A 10-foot by 10-foot area would be excavated to a depth of 6 feet and another 10-foot by 10-foot area would be excavated to a depth of 5 feet.

[18] Ibid.
[19] Ibid.
[20] Ibid.
[21] Ibid.



Legend

- Hotspot PCB Excavation
- PCB Excavation
- VOC Excavation
- Former Building
- Existing Building
- Site Property Boundary

Abbreviations

PCB = Polychlorinated biphenyl
VOC = Volatile organic compound

Notes

1. EKI proposed excavation limits shown in blue, grey, and tan.
2. Excavation labels represent sampling locations shown on Table 2 and Figures 4 and 5.

Figure 4.2-1
Summary of Soil Excavation Locations

GE Site Remediation and Redevelopment Project EIR
Sources: EKI Environment & Water, August 2019.

BASELINE ENVIRONMENTAL CONSULTING

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Outside of hotspot areas, known locations of PCBs in soil above California hazardous waste levels (50 mg/kg or greater) would be excavated in areas of the project site that could be disturbed by the redevelopment activities (i.e., at depths shallower than 15 feet below current ground surface). The excavation extents were designed using data previously collected by GE and based on input from USEPA. The vertical extent of these excavations would extend 1 foot below a known detection of 50 mg/kg or greater. The horizontal extent will be determined by nearby soil sampling locations with PCBs below 50 mg/kg. Where sampling data are not available to define the horizontal extent of contamination, a 10-foot by 10-foot area of soil around the sampling location would be removed. Soil excavation in areas where PCBs are known to be present at concentrations greater than 1,000 mg/kg would be performed within an enclosure (tents) with air pollution control equipment (i.e., particulate air filters), and excavated soil from these areas would be directly loaded into bins that can be sealed within the enclosure and stored on-site pending characterization and transport for off-site disposal. [22]

Structures of potential environmental concern that are expected to be encountered in the subsurface of the project site during remediation activities include:[23]

- Previously-abandoned and to-be abandoned utilities, including the existing stormwater collection system. If the pipe material contains asbestos, then the material would be handled in accordance with applicable air quality and hazardous waste management laws and regulations and appropriate protocols for handling asbestos materials.
- Utility vaults, sumps, and drains, including the French drain system and sump associated with the former oil recovery system by Building #21. This system will be removed via excavation to a depth of at least 1 foot below the expected soil disturbance zone for preparation of the new building foundation (i.e., 5 to 6 feet below existing grade). Concrete components above this depth will be cut with concrete saws and removed. Deeper portions of the trenches and sump will be grouted in place.
- Records indicate that up to four USTs were abandoned in place by GE. If an UST is encountered, it will be removed and disposed of off-site as required by the Alameda County Department of Environmental Health (ACDEH).
- Buried railroad tracks, slabs, and other building features abandoned in place when additions were made to the GE facility.
- Residual liquid or sludge could be present within encountered below-grade structures or pipelines, and would be removed, placed in sealed storage containers, characterized as required by laws and regulations and as otherwise required by the permitted disposal facility, and appropriately disposed.

[22] Ibid.
[23] Ibid.

- Free product or oily soil could also be encountered around the structures, and would be removed and managed in accordance with the soil management protocols outlined in the RDIP Addendum.

a. Routine Transportation, Use, or Disposal of Hazardous Materials. The proposed project and variant would involve the excavation, transportation and disposal of soil impacted with hazardous materials including PCBs and VOCs, and the transportation and disposal of hazardous building materials that contain PCBs, heavy metals, and asbestos. Hazardous materials (e.g., fuel, oils, and paints) would be routinely transported, stored, and used at the project site during construction activities. The proposed operational uses of the project site include warehousing and distribution. The specific operational uses of the project site would depend on the future tenant(s) of the project site. Although it is not currently anticipated that the operational uses of the project site would involve large quantities of hazardous materials, it is possible that the routine transportation, use, and disposal of hazardous materials could occur during operation of the project. The routine transportation, use, and disposal of hazardous materials during construction and operation may pose health and safety hazards to workers if the hazardous materials are improperly handled, or to nearby residents and the environment if the hazardous materials are accidentally released into the environment. Potential impacts associated with accidental releases of hazardous materials into the environment are discussed below.

The routine handling and use of hazardous materials by workers would be performed in accordance with OSHA regulations, which include training requirements for workers and a requirement that hazardous materials are accompanied by manufacturer's Safety Data Sheets (SDSs). Cal/OSHA regulations include requirements for protective clothing, training, and limits on exposure to hazardous materials. Compliance with these existing regulations would ensure that workers are protected from exposure to hazardous materials that may be transported, stored, or used on site.

The project would be required to comply with SCA-HAZ-1: Hazardous Materials Related to Construction (#43), which requires that BMPs are implemented by the contractor during construction to minimize potential negative effects on groundwater, soils, and human health which could occur as a result of hazardous materials handling and storage. Compliance with SCA-HAZ-1 would minimize the potential for accidental releases of hazardous materials used during construction and ensure that potential impacts of the proposed project and variant associated with routine transport, use, or disposal of hazardous materials would be less than significant.

Because the proposed project and variant 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 (described in detail under Section 4.8, Hydrology and Water Quality), 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).

Construction of the proposed project and access variant would result in the generation of various waste materials that would require recycling and/or disposal, including some waste materials that would be classified as hazardous waste. Hazardous materials would 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.

As discussed above, if storage of hazardous materials exceeding specific quantities occurs during project operation, the project would be required to comply with existing hazardous materials regulations including preparation of a Hazardous Materials Business Plan (HMBP), as enforced by ACDEH. The purpose of the HMBP is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. If operational uses of the project site would include the handling, storage, or transportation of hazardous materials, the proposed project and variant would also be required to comply with SCA-HAZ-3: Hazardous Materials Business Plan (#45) which requires an HMBP to be submitted for review and approval by the City, and implementation of the approved HMBP.

Compliance with existing hazardous materials regulations enforced by OSHA, Cal/OSHA, and ACDEH; implementation of a SWPPP as required by the Construction General Permit; and compliance with SCA-HAZ-1: Hazardous Materials Related to Construction (#43) and SCA-HAZ-3: Hazardous Materials Business Plan (#45) would ensure that the proposed project and variant would have less-than-significant impacts related to the routine transportation, use, or disposal of hazardous materials.

b. Accidental Release of Hazardous Materials. Construction period and operation period impacts associated with the potential for the accidental release of hazardous materials associated with the project and variant are discussed below.

Construction Period Impacts.

Impact HAZ-1: Construction of the proposed project or San Leandro Street access variant could result in the accidental release of hazardous materials. (S)

Hazardous Materials Handled During Construction. An accidental release of hazardous materials (e.g., oils, fuels, solvents, paints, contaminated soil/groundwater, or hazardous building materials) during project construction could result in exposure of construction workers, the public, and/or the environment to hazardous materials. As discussed above, construction of the proposed project or variant would be subject to the requirements of the Construction

General Permit and SCA-HAZ-1: Hazardous Materials Related to Construction (#43), which require preparation and implementation of a SWPPP and BMPs to reduce the risk of spills or leaks from reaching the environment, including procedures to address minor spills of hazardous materials. Measures to control spills, leakage, and dumping must be addressed through structural as well as nonstructural BMPs, as required by the Construction General Permit. For example, equipment and materials for cleanup of spills must be available on site, and spills and leaks must be cleaned up immediately and disposed of properly. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. Potential impacts to stormwater runoff quality related to hazardous materials that would be handled during construction are discussed under Section 4.8, Hydrology and Water Quality.

The proposed project or variant would be required to comply with SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), which requires that the project applicant ensure that BMPs are implemented by the contractor during construction to minimize potential soil and groundwater hazards including proper management of contaminated soil and groundwater, and use of engineering controls such as impermeable barriers to prohibit groundwater and vapor intrusion into the proposed building. The management and disposal of contaminated groundwater generated during construction activities is discussed in Section 4.8, Hydrology and Water Quality.

Transportation of Hazardous Materials. As discussed above, the transportation of hazardous materials is subject to both RCRA and DOT regulations. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill), and is responsible for the discharge cleanup. The RDIP Addendum, Appendix H includes a Transportation Plan Addendum that describes the proposed truck routes, approved disposal facilities, loading and transportation procedures for materials leaving the site during implementation of remedial activities, documentation protocol, and emergency response procedures. A Decontamination Plan is presented as Appendix I of the RDIP Addendum, which specifies procedures for removal, collection, and containment of soil and other potentially contaminated material from equipment and transportation vehicles, guidelines for the construction of a decontamination pad, decontamination of personnel and tools, and methods for temporary storage, characterization, and off-site disposal/on-site reuse of decontamination wastes generated during decontamination activities. Transportation of hazardous materials in accordance with the requirements of existing regulations and the RDIP Addendum would ensure that transportation of hazardous materials during construction of the project would result in less-than-significant impacts related to accidental releases of hazardous materials.

Hazardous Building Materials. As discussed above, structures on the project site contain hazardous building materials including ACMs; paints containing heavy metals (e.g., lead, zinc, chromium, cadmium, and mercury) and PCBs; chemically treated wood; concrete, brick and

wood impacted by PCBs; and sumps, tanks, and piping with residual sludge, debris, and/or oil containing PCBs and/or metals. Demolition of structures on the project site would require the disturbance and management/disposal of these hazardous building materials.

Compliance with SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44) requires that a comprehensive assessment be prepared to document the presence of ACMs, lead based paint, PCBs, or any other hazardous materials are present at the project site, and would require the stabilization and/or removal of the identified hazardous materials in accordance with all applicable laws and regulations. Hazardous building materials assessments were performed at the project site in 2009[24] and 2010.[25] Additional sampling and analysis of hazardous building materials is proposed in the RDIP Addendum including PCB sampling of concrete and PCB and lead sampling of the Building #1 bulkhead. Appendix O of the RDIP Addendum presents protocols for demolition activities including: concrete sampling, re-use of concrete, off-site disposal of concrete, sampling and handling of PCBs containing waste, and the Building #1 bulkhead cleanup plan. Concrete with PCBs below 50 mg/kg would be crushed and reused on the project site as aggregate base or engineered fill beneath the concrete pavement cap, except in areas of clean utility corridors. Concrete that cannot be reused on-site because of the presence of PCBs exceeding 50 mg/kg or for other construction-related considerations would be removed and appropriately disposed of off-site at a permitted facility.

The Building #1 bulkhead cleanup plan includes two alternatives: paint removal, and coating and encapsulation of the paint and underlying substrate. The feasibility of these two alternatives would be evaluated together with requirements from the City, comments from interested stakeholders, and input from preservation technical experts (e.g., architect, structural engineer, and abatement specialists). As part of the evaluation, paint removal would be assessed via a pilot test. USEPA would be consulted for concurrence regarding the findings of the pilot study and recommendations for future work. Paint removal would be performed if feasible, and encapsulation would be performed if paint removal is not feasible.[26]

Protective Measures. The RDIP Addendum also includes protective measures to prevent exposure of construction workers, off-site residents and industrial/commercial workers, and the environment to hazardous materials during demolition and construction activities, including requirements for tenting certain excavation areas, decontamination, dust control, odor and vapor control, and air monitoring. Compliance with SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), requires the project applicant to implement remedial recommendations and submit to the City evidence of approval for any proposed remedial action and required clearances by the applicable local, State, or federal regulatory agency.

[24] Arcadis, 2009. Op. cit.
[25] SCA Environmental, Inc., 2010. Op. cit.
[26] EKI Environment and Water, Inc., 2019a. Op. cit.

Tenting Plan. A Shoring and Tenting Plan for PCB soil excavation[27] is presented in Appendix B of the RDIP Addendum which outlines the methods and equipment that would be used for tenting of 11 excavation areas during removal of soil with PCB concentrations exceeding 1,000 mg/kg to mitigate migration of PCB-impacted dust. The footprint of nine of the eleven excavations would be approximately 10 feet by 10 feet. For these nine excavations, a 30-foot by 30-foot by approximately 19-foot-tall tent structure would be utilized to cover the work area during excavation activities. The tent would be moved from location to location by a crane. A larger tent, measuring approximately 75 feet long by 30 feet wide by 26 feet tall would be utilized for the remaining two excavations. The interior of the tent structures would be high enough to allow for soil removal with heavy equipment. During excavation activities inside of the tents, excavated soil would be directly loaded into covered bins or sacks within the tent.

The tent structures would be ventilated and kept under negative pressure during active work hours. The ventilation systems would be designed to achieve the appropriate air exchange necessary for worker safety, and a filtration system would be connected to the exhaust end of the ventilation blower system to remove particulates.

Decontamination Plan. A Decontamination Plan is presented in Appendix I of the RDIP Addendum. The contractor would construct an in-place decontamination pad or install a mobile decontamination pad where trucks, equipment, and demolition debris can be decontaminated prior to exiting the project site. The decontamination pad would be lined to contain liquids and used to remove potentially contaminated soil and debris from vehicles and equipment. Decontamination would generally be performed using dry methods (e.g., brooms, brushes, shovels, plastic scrapers, or filter equipped industrial vacuum cleaners). Wet decontamination methods (e.g., mops or brushes and soapy water, pressure washers, or spray hoses with high pressure nozzles) may also be used, if necessary. The Decontamination Plan also includes protocols for the appropriate management and disposal of soil and wastewater that would be generated by decontamination activities.[28]

Dust, Vapor, and Odor Control. A Dust Control Plan is presented in Appendix J of the RDIP Addendum which includes the following dust control measures:[29]

- Dust-generating activities (e.g., demolition of existing structures and soil excavation) in areas where PCBs are known to be present at concentrations greater than 1,000 mg/kg would be performed within an enclosure that is: (a) vented to air pollution control equipment (i.e., particulate air filters) and (b) the excavated/demolished materials would be directly loaded into bins that can be sealed.
- Vehicle speeds would be limited to 15 miles per hour at the site.

[27] Innovative Construction Solutions, 2019. Tenting Plan for PCB Soil Excavation, 5441 International Boulevard, Oakland, California 94601, August 21.

[28] EKI Environment and Water, Inc., 2019a. Op. cit.

[29] Ibid.

- Excavation activities would be controlled to minimize generation of dust.
- Drop heights would be kept to a minimum while loading transport vehicles.
- All stockpiles that are not being actively handled would be covered with weighted plastic sheeting or tarps, and/or sprayed with a non-toxic chemical soil binder such as Hydroseal or equivalent, and all stockpiles would be inspected daily.
- Exposed soil in work areas that is not being actively excavated would be covered with weighted plastic sheeting or tarps, and/or sprayed with a non-toxic chemical soil binder such as Hydroseal or equivalent or dust suppressant (e.g., Gorilla-Snot® or equivalent).
- Trucks and transport vehicles would be covered when hauling soil or other loose material, or, if clean import fill is being transported, at least 2 feet of freeboard would be maintained at all times.
- Daily sweeping with brooms or a street sweeper would be conducted if visible soil is observed on paved access routes or parking areas.
- Daily or more frequent if needed, sweeping with a street sweeper would be conducted if visible soil material is carried onto public streets.
- Water would be misted or lightly sprayed, as needed, using a watering truck and/or hoses and misting towers to prevent formation of dust while demolishing buildings, concrete floors and foundations, excavating soil, transferring or reworking soil on-site, crushing concrete, and loading or decontaminating transportation vehicles.
- Fencing that is a minimum of 6 feet tall and equipped with a windscreen will be installed around the site. If feasible based on wind conditions, strategically placed vertical dust screens/fences made of geotextile fabric may also be used to control dust, particularly when intensive soil handling will be occurring (e.g., soil compaction to prepare the building foundation) and/or when work near the property boundary is conducted.
- An approximately 16-foot tall privacy fence will be installed as a noise/dust barrier along the northern boundary of the site with adjoining residences.
- A stabilized construction entrance/exit would be constructed, or steel plates would be installed and used for any unpaved access way.
- Soil collected from sweeping would be containerized, characterized, and disposed of off-site if collected during remediation activities, or reused on-site if generated during other phases of redevelopment.
- If needed, exposed soil outside of work areas can be sprayed with a non-toxic chemical dust suppressant (e.g., Gorilla-Snot® or equivalent), stabilizer (e.g., Soiltac® or equivalent), or soil binder (e.g., HydroSeal).

- If appropriate, the contractor may construct a temporary cap or access road(s) in problem areas to reduce other dust control measures, subject to approval by the applicant's environmental consultant.
- In the event that wind speeds exceed 15 miles per hour averaged over a 15-minute period or instantaneous wind speeds exceed 25 miles per hour or when dust control measures are not able to prevent visible dust emissions or exceedances of dust action levels, soil-moving activities would be halted until wind speeds decrease and no visible emissions are observed.
- If visible fugitive dust is observed at or beyond the site perimeter during activities that generate dust, the contractor would increase its dust suppression efforts by implementing additional dust control measures to reduce dust levels.

Publicly visible signs would be posted along International Boulevard informing people how to contact a site representative, DTSC, or the BAAQMD about potential issues related to dust emissions from the project site. The name and telephone number for the appropriate contact persons with these organizations would be included on the sign.

If air monitoring action levels are exceeded, contingency dust control measures would be implemented by the contractor which would consist of increasing the magnitude and frequency of dust control measures, constructing a temporary cap in problem areas, and/or addition of dust palliative or surfactant to dust control water.

The Dust Control Plan also includes vapor and odor control measures that would be implemented by the contractor to prevent the formation and migration of vapors and odors during remedial excavation. Many of the dust control procedures described above (e.g., spraying watering, covering soil, and controlling excavation and truck loading) would also serve to control vapor and odors. In addition, the following vapor and odor control measures would be implemented:[30]

- Potable water, odor suppressant, and vapor suppressant would be misted or sprayed at a frequency that is sufficient to suppress vapors and odors during the work. Odor and vapor suppressant would be Odex and Hydroseal (Kuma Corporation of Grass Valley, CA), RusFoam® (Rusmar, Inc. of West Chester, PA), or other favorably reviewed odor control agent and vapor suppressant foam, subject to approval by the applicant's environmental consultant.
- Hydroseal, RusFoam, or other favorably reviewed vapor suppressant foam, would be applied to the top surface of odorous soil in truck loads prior to covering and to odorous and vapor emitting excavation surfaces at the end of each work day.

[30] Ibid.

Air Monitoring. A Perimeter Air Monitoring Plan (AMP) is presented in Appendix K of the RDIP Addendum.[31] Air monitoring would not be implemented for abatement and/or removal of existing building materials where PCBs are known to be present at concentrations greater than 1,000 mg/kg and soil excavation in areas where PCBs are known to be present at concentrations greater than 1,000 mg/kg, as these activities would be performed within an enclosure that is: (a) vented to air pollution control equipment (i.e., particulate air filters) and (b) the excavated/demolished materials would be directly loaded into bins that can be sealed; and the cap would remain in place during these activities except where it would be removed for demolition and excavation within enclosures. The AMP would be implemented during demolition of all other above ground structures concrete crushing, cap removal, and all other excavation/soil handling activities; and during redevelopment construction activities until the temporary cap is installed at the project site. The AMP would be implemented by the applicant's environmental consultant to evaluate the adequacy of dust, vapor, and odor control measures, and to determine if contingency measures need to be implemented by the contractor to address dust, vapor, or odor emissions. The following information was obtained from the AMP.

The applicant is proposing to install a meteorological station at the project site to continuously measure wind speed and direction during perimeter air monitoring. A wind sock or wind vane would also be located at project site. If the wind data or observations indicate that a significant shift in wind direction has occurred, the perimeter air sampling stations would be repositioned, as appropriate. Perimeter air monitoring would be performed at up to eight locations along the site perimeter. Of the four monitoring stations that would be located along the southwestern and northwestern boundaries of the project site (i.e., the upwind locations), a minimum of three would be monitored when air monitoring is required; and all four of the monitoring stations located along the southeastern and northeastern boundaries of the site (i.e., the downwind locations) would be monitored throughout construction activities while air monitoring is required. The locations of the air monitoring stations would depend on where demolition and active soil handling would be occurring and the observed wind direction.

The AMP includes action levels developed for airborne concentrations of dust and potential contaminants of concern (PCOCs) based on regulatory ambient air quality standards and available regulatory guidance, including project specific guidance from USEPA.[32] Only off-site populations were considered because access to on-site work zones would only be allowed in accordance with project-specific HASPs, which would protect construction workers from exposure.[33] The California Ambient Air Quality Standard for respirable dust (i.e., airborne particulate matter with effective particle diameters less than or equal to 10 microns or PM_{10}) is established in CCR Title 17, Section 70200, and is 0.05 milligrams per cubic meter (mg/m^3), measured as a 24-hour time weighted average (TWA). The AMP indicates that an action level

[31] Ibid.
[32] Ibid.
[33] Ibid.

for PM_{10} was developed by assuming that a background level of PM_{10}[34] of 0.020 mg/m^3 would be present during 16 hours of the day when construction activities would not be occurring, and determining what the TWA for PM_{10} could be over an 8-hour work shift such that the 24-hour TWA for PM_{10} would not exceed 0.05 mg/m^3. The APM indicates that the appropriate action level for PM_{10} is an 8-hour TWA of 0.11mg/m^3. The APM indicates that maintaining PM_{10} concentrations below the action level of 0.11 mg/m^3 would be protective of off-site populations from exposure to non-PCBs PCOCs (i.e., metals) in dust. To account for short-term variations in dust emissions, a suspend work level for PM_{10} of 0.11mg/m^3, measured as a 30-minute TWA at the perimeter of the project site would serve as an action level for PM_{10} for temporarily stopping work to re-assess construction activities and dust control measures. As an additional conservative measure, a 5-minute TWA of approximately 0.11 mg/m^3 for PM_{10} at the perimeter of the project site was established as a trigger level for PM_{10}. Dust suppression efforts would be increased if this trigger level were exceeded.

The APM also calculated potential real-time trigger levels for PCBs in PM_{10} using the maximum known PCB concentration in soil or building materials that would be handled and generate dust during a given construction activity (e.g., soil remediation excavation, building demolition, PCB building materials abatement, concrete crushing, grading); PCB Action Levels of 0.00003 mg/m^3 for off-site child residential receptors and 0.00008 mg/m^3 for off-site adult worker receptors, as recommended provided by USEPA's TSCA PCB group; and exposure assumptions that were based on DTSC and USEPA guidance and the applicant's environmental consultant's professional judgment. The calculated potential 5-minute TWA PM_{10} trigger levels based on PCB concentrations are as low as 0.0023 mg/m^3. Real-time dust monitoring instruments are not capable of accurately measuring a PM_{10} concentration difference of less than approximately 0.01 mg/m^3 and background PM_{10} concentrations are anticipated to be approximately 0.020 mg/m^3. Therefore, abatement and/or removal of existing building materials where PCBs are known to be present at concentrations greater than 1,000 mg/kg and soil excavation in areas where PCBs are known to be present at concentrations greater than 1,000 mg/kg would be performed within an enclosure as discussed above.

The PM_{10} trigger levels calculated for activities that could generate airborne PCBs are:

- 0.030 mg/m^3 for handling of soil and building materials with PCBs greater than 600 mg/kg and less than 1,000 mg/kg;
- 0.050 mg/m^3 for handling of soil and building materials with PCBs greater than 50 mg/kg and less than 600 mg/kg; and,
- 0.11 mg/m^3 for handling of soil and building materials with PCBs less than 50 mg/kg.

[34] The annual average PM_{10} concentration measured at the BAAQMD monitoring station in San Pablo, California was 0.0214 mg/m3 in 2018. San Pablo is the closest monitoring station in the East Bay to the project site with PM_{10} data. PM_{10} data is not available for air monitoring stations in Oakland.

If these PM_{10} trigger levels measured as a 5-minute TWA are exceeded at any of the air monitoring stations, the contractor would increase dust suppression efforts. If the PM_{10} levels measured as a 30-minute TWA exceeds any of the trigger levels at any of the air monitoring stations, the contractor would temporarily stop work and reassess site activities and dust control measures.

An action level was also developed to screen for total VOCs and determine if contingency measures for vapor may need to be implemented. If significant odors or vapor were detected at the perimeter of the project site by air monitoring field staff or if 1 part per million by volume (ppmv) above background organic vapor meter (OVM) measurements were sustained for more than 2 minutes, the contractor would implement contingency vapor control measures as follows: if sustained OVM measurements over 1 ppmv above background or odors persist, the contractor would temporarily halt soil handling activities, and the contractor's odor and vapor control practices would be reviewed and modified, as appropriate.

The contractor also would be required to provide a notice of excavation to the BAAQMD for excavation of VOC impacted soil and would be required to manage soil excavation and handling to minimize the emissions of VOCs to the atmosphere in accordance with requirements of BAAQMD Regulation 8 Rule 40.

In addition to the real time monitoring of total dust and organic vapors as discussed above, ambient air would also be sampled at the perimeter of the project site for laboratory analysis of VOCs during the first five days of VOC hotspot excavation activities. According to the AMP, if the VOC action levels are not exceeded during the first five days, monitoring for VOCs would be discontinued. VOCs monitoring would continue for at least three more days if the action level was exceeded until the action level is not exceeded for three consecutive work days.

During the phases of work involving mass vertical demolition of existing buildings outside of enclosures, soil remediation excavation outside of enclosures; and concrete removal activities for off-site disposal performed outside, ambient air would also be sampled at the perimeter of the project site for laboratory analysis of PCBs for the first five days of each activity. If results after five days of air monitoring show that exposures and dust control measures are acceptable, monitoring for PCBs would be discontinued. PCBs monitoring would continue for at least three more days if the action levels are exceeded until the action levels are not exceeded for three consecutive work days.

During the phase of work involving concrete crushing, cap removal, rough and fine grading, ground improvement activities for geotechnical purposes, the construction of new building foundation(s), and excavation for clean corridors, ambient air would also be sampled at the perimeter of the project site for laboratory analysis of PCBs and metal PCOCs (i.e., arsenic, cobalt, copper, and lead) for the first five days of each activity. If results after five days of air monitoring show that exposures and dust control measures are acceptable, monitoring for PCBs

and metal PCOCs would be discontinued. PCBs and/or metal PCOCs monitoring would continue for at least three more days if the action levels are exceeded until the action levels are not exceeded for three consecutive work days.

During precipitation events, moisture in the air would limit the dispersion of dust, acting as a dust control mechanism. Dust monitoring equipment has an optical sensor, which can also be influenced by ground fog or mist. Therefore, dust monitoring would not be performed in the event of precipitation, ground fog, or mist. The RDIP Addendum indicates that the applicant may elect to place a temporary cover on exposed soil to limit potential human health risks during redevelopment activities, and that if a temporary cap/cover were used at the project site, then dust monitoring would be discontinued.

While implementation of protective measures discussed above would greatly reduce the likelihood that off-site receptors would be exposed to airborne dust and PCOCs that may be generated during demolition and construction activities, it is possible that airborne dust and PCOC emissions could exceed action levels after work hours when active dust control and air monitoring activities would be discontinued. The RDIP Addendum indicates that air monitoring would be performed until the temporary cap is installed at the project site, however the RDIP Addendum does not define what the temporary cap on the project site would entail, and the AMP indicates that application of chemical dust suppressant or stabilizer to exposed soil would constitute a cap. While application of dust suppressant or soil stabilizer can help reduce dust emissions, it would not eliminate dust emissions, as dust suppressants and soil stabilizers can quickly wear away under active construction conditions. In addition to potential exposure of off-site receptors to dust and PCOC emissions via inhalation, dust laden with PCOCs could be deposited on surfaces of off-site properties which could expose off-site receptors to hazardous materials via direct contact and/or incidental ingestion (e.g., if dust lands on vegetable gardens or children playing in yards come into contact with dust). Implementation of Mitigation Measure HAZ-1, described below, would ensure that potential impacts related to airborne dust and PCOCs during demolition, soil remediation excavation, and redevelopment construction activities would be less than significant.

Groundwater Extraction and Treatment System Modification. A document titled Groundwater Remedy Modifications and Off-Site Vapor Intrusion Assessment[35] is presented as Appendix F of the RDIP Addendum, which indicates that the GETS would be shut down during remediation and redevelopment of the project site and would be replaced and recommissioned as redevelopment activities allow (i.e., when areas are clear of other construction activities). The duration of the GETS shutdown is anticipated to be approximately 48 weeks; however, to the extent practicable, the applicant plans to operate and monitor GETS extraction wells EW-1 through EW-3 (located at the southwestern and downgradient end of the project site) during the

[35] Wood Environmental & Infrastructure Solutions, Inc., 2019. Appendix F, Groundwater Remedy Modifications and Off-Site Vapor Intrusion Assessment, 5441 International Boulevard, Oakland, California, October.

wet season to assess potential risk to downgradient receptors during the shutdown period and determine if further action is warranted.[36]

The proposed project or variant conflicts with (and would require the relocation of) eight actively used monitoring wells located within or near the proposed building footprint, two monitoring wells located within the proposed truck court, and the following elements of the GETS:[37]

- Treatment system (referred to as a "treatment compound" in Appendix F of the RDIP Addendum);
- Groundwater conveyance, electrical, and control lines;
- Electrical power drop;
- Vapor discharge line; and,
- Three extraction wells (EW-5, EW-6, and EW-7).

The GETS treatment system would be relocated southwest of 12th Street to avoid conflict with the proposed warehouse footprint and drive lanes (see Figure 3-5). Subsurface piping would convey vapor emissions from the GETS to a vapor discharge point located near the southwest boundary of the project site. Eight of the performance monitoring wells and extraction well EW-7 are proposed to be relocated (i.e., destroyed and re-installed) outside of and adjacent to the proposed building footprint and truck court. Two extraction wells (EW-5 and EW-6) and two of the performance monitoring wells located under the proposed building footprint are proposed for destruction and would not be relocated. Additionally, there are 28 monitoring wells on the project site that are not part of the performance monitoring well network which are proposed to be destroyed. Four wells that are not currently included in the monitoring network would be retained and incorporated into the groundwater monitoring program, and two new up-gradient monitoring wells would be installed. If project construction activities interfere with extraction and/or monitoring wells not proposed for relocation or destruction, these wells may require destruction and reinstallation after redevelopment is completed.

The wells that are proposed to be destroyed would be pressure grouted and the tops of the wells would be over-drilled in accordance with Alameda County Public Works Agency (ACPWA) permit requirements. The wells that are proposed to be replaced or installed would be constructed in accordance with ACPWA permit requirements, including the placement of annular seal materials at depth inside of the drill casing as it is retracted to prevent bridging or borehole collapse.

Groundwater and decontamination water generated during well destruction and construction activities would be treated in the GETS and other waste materials (i.e., well materials and soil)

[36] Ibid.
[37] Ibid.

would be properly contained, transported, and disposed of at an off-site facility. According to Appendix F, the wells that are proposed to remain and be relocated are considered adequate for evaluating the groundwater conditions and remediation progress at the project site.[38] Destruction and construction of wells in accordance with ACPWA requirements would ensure that the monitoring wells would not serve as conduits that could allow vertical migration of contaminants in groundwater.

Appendix F of the RDIP Addendum also presented the findings of groundwater flow modeling that was used to evaluate: 1) the effect of removing extraction well EW-6 (removal of extraction well EW-5 would have no impact on containment of impacted groundwater); 2) potential contaminant plume migration during a 1-year shutdown of the GETS; and, 3) the groundwater capture area of the relocated GETS. According to Appendix F of the RDIP Addendum, the groundwater modeling demonstrated that:

- Removal of extraction well EW-6 would not materially affect the capture of impacted groundwater;
- An upper bound estimate (conservatively assuming a hydraulic gradient equal to the current ground surface slope of the project site) of contaminated groundwater migration in the B-zone (which has much higher hydraulic conductivity than the A-zone) during a 1-year shutdown of the GETS is 62 feet towards the southwest (downgradient direction); and,
- The relocated GETS would capture groundwater in the A- and B-zones at the project site and would create a combined capture area that extends well beyond the boundaries of the project site; and,
- As long as groundwater migration is less than approximately 62 feet during the GETS shutdown, the contaminants in the groundwater plume would be recaptured when the relocated GETS is restarted; and therefore, the system shutdown is not anticipated to have a long-term impact on the effectiveness and protectiveness of the groundwater remedy.

The potential migration of contaminated groundwater during the proposed shutdown of the GETS could result in increased levels of contaminants in groundwater and soil gas and an expanded area (up to 62 feet) of impacts in areas surrounding the project site. Additionally, proposed excavation of the VOC hotspots could result in a temporary increase in contaminant levels in groundwater near and downgradient of the excavation area as the disturbance of contaminated soils can temporarily increase the leaching of contaminants into groundwater. Although the relocated GETS is expected to draw the contaminated groundwater back to the project site when it is restarted, soil gas contamination associated with the migrating contaminant plume would not be addressed by the GETS and could present a vapor intrusion exposure risk to nearby receptors.

[38] Ibid.

DTSC comments on the Draft RDIP Addendum indicated that elevated concentrations of TCE in groundwater along the northern fence line of the project site could present a vapor intrusion health risk for off-site residents and indicates that soil gas must be investigated in this area.[39] The project includes the installation of temporary soil gas probes and two rounds of soil gas sampling to assess soil gas conditions following excavation of the VOC hot spots. If the soil gas results from the two rounds of sampling from the point closest to the property boundary are above applicable screening levels, GE[40] would then collect soil gas samples from adjacent residential properties, as allowed by the property owners. As a proactive contingency measure, a permeable material would be used to backfill the north perimeter of the VOC hot spot excavation to the subgrade elevation to disrupt a potential vapor migration pathway from the project site to adjacent off-site properties. GE also plans to collect soil gas samples from the west side of San Leandro Street to evaluate potential vapor intrusion for off-site commercial properties.[41] Soil gas sampling that would be performed under DTSC oversight would ensure that the potential for vapor intrusion to impact off-site receptors would be appropriately characterized and remediated, if necessary, and the potential impact would be reduced to a less-than-significant level.

Mitigation Measure HAZ-1: Following the completion of grading activities, the entire site shall be temporarily capped as soon as possible using recycled crushed concrete sourced from the project site that has been tested and determined to be available for this use and imported aggregate base material, as needed, to ensure that large areas of exposed soil are not present on the project site for the remainder of project construction. If recycled crushed concrete that is impacted by PCBs is used for construction of the temporary cap, dust monitoring shall be performed until the permanent cap is installed at the project site. In the event that a complaint is made by the public regarding visible dust emissions from the project site after working hours, real time dust monitoring equipment shall operate 24 hours per day and 7 days a week to monitor and log dust levels after normal working hours to evaluate whether excessive dust emissions occur after working hours. The real time air monitoring equipment shall be equipped with a remote telemetry alarm system that can notify the applicant's environmental consultant and contractor at any time if air monitoring trigger levels for dust are being exceeded after normal working hours. In the event that air monitoring trigger levels are exceeded after normal working hours or if a complaint is made by the public regarding visible dust emissions from the project site after working hours, contractor personnel shall arrive at the project site within one hour of the trigger level exceedance or public complaint, and shall implement dust control measures. Air monitoring outside of working hours can be discontinued, with approval from DTSC and the City, following demonstration that dust emissions after working hours are being adequately

[39] EKI Environment and Water, Inc., 2019a, op. cit.

[40] GE retains both legal and financial responsibility for groundwater remediation both on- and off-site related to GE's historical use of the project site, including for environmental media (e.g., soil gas) off-site related to groundwater impacts.

[41] Wood Environmental & Infrastructure Solutions, Inc., 2019., op. cit.

controlled. If a public complaint is made to a site representative regarding visible dust from project site demolition and remediation activities being deposited on surfaces of neighboring properties, DTSC and USEPA shall be notified. The applicant shall be responsible for testing and cleanup of dust on neighboring properties if necessary and as directed by DTSC or USEPA. (LTS)

Implementation of a SWPPP, compliance with SCA-HAZ-1: Hazardous Materials Related to Construction (#43) and SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), implementation of the RDIP Addendum (including the protective measures discussed above) with oversight of DTSC and USEPA, and implementation of Mitigation Measure HAZ-1 would ensure that the proposed project or variant would result in less-than-significant impacts related to the potential release of hazardous materials during demolition, remediation and construction activities.

Operation Period Impacts. The proposed redevelopment would cap the entire project site and create clean utility corridors to prevent potential exposure of receptors to contaminated soil. The current deed restriction for the project site limits on-site uses (i.e., sensitive and residential uses are prohibited), requires that the cap not be disturbed, and prohibits penetration of the cap except after notification of DTSC. DTSC, USEPA, and the applicant have prepared an updated draft of the deed restriction, which would be finalized after redevelopment.[42]

A soil management plan (SMP) would be prepared after remediation and redevelopment is complete. The SMP for the project site would: (1) identify known contaminants and their concentrations; (2) identify the location of clean corridors and procedures for working in these areas; and (3) identify protocols if the cap needs to be breached in the future (e.g., during health and safety inspections, soil handling, and cap replacement requirements). The SMP would be submitted separately for DTSC and USEPA review and approval.[43]

Construction of a vapor intrusion mitigation system (VIMS) is proposed to be included as part of the building design to ensure that future occupants of the building would not be exposed to hazardous materials in indoor air from vapor intrusion. The proposed VIMS design is presented in Appendix E of the RDIP Addendum. The VIMS design includes a sub-slab vapor barrier and ventilation system that would consist of perforated piping embedded in a gravel layer below the sub-slab liner. The perforated piping would connect to riser pipes that would discharge sub-slab vapors above the roof of the proposed building via an exhaust blower. Post construction sampling of sub-slab vapor and indoor air would be performed under DTSC oversight to evaluate the effectiveness of the VIMS.[44]

[42] EKI Environment and Water, Inc., 2019, op. cit.
[43] Ibid.
[44] Ibid.

DTSC's review of the proposed VIMS design and DTSC oversight of indoor air sampling and operation of the VIMS would ensure that future occupants of the project site would not be exposed to significant health risks from hazardous materials in indoor air as a result of vapor intrusion.

The emission of VOCs during operation of the project would also occur from the sub-slab ventilation system of the VIMS that would be installed beneath the proposed building. The VOCs emissions from ventilation risers also would be evaluated and monitored under DTSC oversight to ensure that the emissions would not present a significant exposure risks for nearby receptors.

If storage of hazardous materials occurs at the project site during operation, the project would be required to comply with SCA-HAZ-3: Hazardous Materials Business Plan (#45) and existing hazardous materials regulations, including preparation of an HMBP as enforced by ACDEH. As discussed above, the transportation of hazardous materials is subject to both RCRA and DOT regulations. If a discharge or spill of hazardous materials occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities and contain the spill), and is responsible for the discharge cleanup.

Potential impacts to stormwater runoff quality related to hazardous materials during operation of the project are discussed under Section 4.8, Hydrology and Water Quality.

Implementation of the RDIP Addendum under DTSC and USEPA oversight, including capping of the project site, installation and operation of a VIMS, updating the deed restriction, and preparation and implementation of an SMP; compliance with SCA-HAZ-3: Hazardous Materials Business Plan (#45); and compliance with existing hazardous materials regulations would ensure that potential impacts related to accidental releases of hazardous material during operation of the proposed project or variant would be less than significant.

c. Acutely Hazardous Materials Near Sensitive Receptors. The proposed project or variant would not include the siting of new sensitive receptors (e.g., residential uses, schools, parks, daycare centers, nursing homes, or medical centers). The storage or use of acutely hazardous materials would not occur during project construction, and is not anticipated to occur during project operation. As discussed above, if storage of acutely hazardous materials in excess of threshold planning quantities did occur during project operation, the project would be required to comply with existing hazardous materials regulations including preparation of an HMBP and also an RMP under the Cal ARP Program, as enforced by ACDEH. The RMP is implemented to prevent or mitigate releases of regulated substances that could have off-site consequences through hazard identification, planning, source reduction, maintenance, training, and engineering controls. The proposed project or variant would also be required to comply with

SCA-HAZ-3: Hazardous Materials Business Plan (#45), which requires an HMBP to be submitted for review and approval by the City, and implementation of the approved HMBP.

Compliance with existing hazardous materials regulations enforced by ACDEH and SCA-HAZ-3: Hazardous Materials Business Plan (#45) would ensure that the proposed project or variant would have less-than-significant impacts related to the storage or use of acutely hazardous materials.

d. Hazardous Emissions near Schools. The only school located within a quarter-mile of the project site is Bridges Academy, a public elementary school located at 1325 53rd Avenue, approximately 450 feet northwest of the project site.[45]

Construction Period Impacts. As discussed above, the proposed project or variant would include the handling of hazardous materials during construction and implementation of a SWPPP, compliance with SCA-HAZ-1: Hazardous Materials Related to Construction (#43) and SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), implementation of the RDIP Addendum (including the protective measures discussed above) with oversight of DTSC and USEPA, implementation of Mitigation Measure HAZ-1 would ensure that the proposed project or variant would result in less-than-significant impacts related to potential releases of hazardous materials during construction. Therefore, the proposed project or variant would result in less-than-significant impacts related to the handling of hazardous materials near schools during construction of the project.

Operation Period Impacts. Hazardous materials (VOCs) would continue to be emitted from the air stripper component of the GETS during operation of the proposed project. Emissions from the air stripper are treated via an activated carbon filter and discharged to the atmosphere in accordance with the BAAQMD Permit to Operate for Plant No. 22499.[46] The relocated GETS would also require BAAQMD permitting. BAAQMD Regulation 2-1-412 (Public Notice, Schools) requires that the BAAQMD provide public notice if a proposed source of emissions is located within 1,000 feet of the outer boundary of a K-12 school. The proposed vapor discharge point of the relocated GETS would be located over 1,000 feet from, but within a quarter mile, of Bridges Academy.[47] The continued treatment of emissions from the GETS via activated carbon and discharge to the atmosphere in accordance with BAAQMD permit requirements would ensure that hazardous materials emissions from the relocated GETS would have a less-than-significant impact on the nearby school.

As noted above, the emission of VOCs during operation of the project would also occur from the sub-slab ventilation system of the VIMS that would be installed beneath the proposed building.

[45] California Department of Education, 2019. California Schools Directory. Available at: https://www.cde.ca.gov/schooldirectory/, accessed March 19.

[46] Wood Environmental & Infrastructure Solutions, Inc., 2018, op. cit.

[47] EKI Environment and Water, Inc., 2019. Op. cit.

The VOC emissions from ventilation risers would be evaluated and monitored under DTSC oversight to ensure that the emissions would not present a significant exposure risks for nearby receptors, including schools. Additionally DTSC guidelines require that vents for VIMS be located at least 10 feet away from windows or air intakes.[48] The VIMS would include active sub-slab depressurization, therefore the VIMS exhaust system would require permitting from the BAAQMD as the VIMS would be considered soil vapor extraction systems under BAAQMD Regulation 8 Rule 47 (Organic Compounds; Air Stripping and Soil Vapor Extraction Operations). Pursuant to BAAQMD Regulation 8-47-301, emission controls (e.g., carbon scrubbing), would be required to reduce VOC emissions by 90 percent, unless an applicable exemption exists. The proposed location and alternate location of the potential active VIMS exhaust system is over 1,000 feet, but within a quarter mile, of Bridges Academy. Monitoring of the VIMS under DTSC oversight and compliance with BAAQMD permit requirements would ensure that hazardous materials emissions from the VIMS would have a less-than-significant impact on the nearby school.

As discussed above, if routine transportation, use, or disposal of hazardous materials occurs during project operation, the project would be required to comply with existing hazardous materials regulations enforced by ACDEH and SCA-HAZ-3: Hazardous Materials Business Plan (#45), which would ensure that the proposed project or variant would have less-than-significant impacts related to handling hazardous materials near schools during operation of the project.

e. Government Code Section 65962.5. The project site is included on the list of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, as identified by DTSC,[49] and therefore is included on a list of hazardous materials release sites compiled pursuant to Government Code Section 65962.5 (also known as the "Cortese List").

As discussed above, implementation of a SWPPP, compliance with SCA-HAZ-1: Hazardous Materials Related to Construction (#43) and SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), implementation of the RDIP Addendum with oversight of DTSC and USEPA (including the protective measures discussed above, capping of the project site, installation and operation of a VIMS, updating the deed restriction, and preparation and implementation of an SMP), and implementation of Mitigation Measure HAZ-1 would ensure that the proposed project or variant would result in less-than-significant impacts related to the past releases of hazardous materials that have occurred at the project site.

f. Emergency Access Routes for Streets over 600 Feet in Length. The project or access variant would not disrupt access points along roadways in the vicinity of the project site and the

[48] Department of Toxic Substances Control (DTSC), 2011. Vapor Intrusion Mitigation Advisory, Final Revision, October 1.

[49] Department of Toxic Substances Control (DTSC), 2019. Hazardous Waste and Substances site "Cortese" list, Available at: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/, accessed March 18.

project variant would result in increased access points to the project site compared to the existing condition. Therefore, the proposed project or variant would not result in less than two emergency access routes for streets exceeding 600 feet in length.

g. Aviation Hazards. Oakland International Airport is the closest airport to the project site. The project site is located approximately 9,500 feet northeast of the nearest runway at the Oakland International Airport. The project site is not located within the Airport Influence Area of the Oakland International Airport.[50] Therefore, the proposed project or variant would not result in aviation-related safety hazards related to an Airport Land Use Plan or public use airport.

h. Private Airstrip. The project site is not located in the vicinity of a private airstrip. Therefore, the proposed project or variant would not result in aviation-related safety hazards related to a private airstrip.

i. Emergency Response/Evacuation Plan. Figure 7.2 of the Safety Element of the City of Oakland General Plan[51] indicates that the emergency evacuation routes in the vicinity of the project site include International Boulevard, San Leandro Street, East 12th Street, and Seminary Boulevard. Construction of the project could require temporary closure of portions of streets adjacent to the project site, including International Boulevard and the southern terminus of East 12th Street, for construction activities associated with utility connections and driveway construction/reconfiguration. Traffic control requirements imposed by the City for the permitting of temporary closure of streets areas would ensure that appropriate emergency access is maintained at all times during construction activities. The project or access variant would not disrupt access along roadways in the vicinity of the project site. Therefore, the proposed project or variant would have a less-than-significant impact related to emergency response and evacuation.

j. Wildfires. The project site is within a highly urbanized area and is not located near heavily vegetated areas or wildlands that could be susceptible to wildfires. The project site is not located in or near a State responsible area or a very high fire hazard severity zone as mapped by the California Department of a Forestry and Fire Protection.[52] Therefore, the project or variant would have no impact related to wildfires.

3. Cumulative Impacts

As discussed above, accidents involving hazardous materials releases or disturbance of soil and groundwater that may be impacted with hazardous materials during construction activities could result in adverse effects to construction workers, the public, or the environment.

[50] Alameda County Community Development Agency, 2010. Oakland International Airport, Airport Land Use Compatibility Plan, December.

[51] City of Oakland, 2004. Op. cit.

[52] California Department of Forestry and Fire Protection, 2008. Very High Fire Hazard Severity Zones in LRA, Alameda County, September 3.

Occurrence of a cumulative effect would require that multiple projects release hazardous materials at the same time in close proximity to each other. Compliance with existing hazardous materials regulations, implementation of the RDIP Addendum with oversight of DTSC and USEPA (including the protective measures discussed above, capping of the project site, installation and operation of a VIMS, updating the deed restriction, and preparation and implementation of an SMP), implementation of Mitigation Measure HAZ-1, and implementation of SCA-HAZ-1: Hazardous Materials Related to Construction (#43) through SCA-HAZ-3: Hazardous Materials Business Plan (#45) would ensure that potential impacts associated with releases of hazardous materials or disturbance of soil and groundwater that may be impacted with hazardous materials would be less than significant. Each site, including the proposed project, would be required to comply with existing hazardous materials regulations to reduce the risk of impacts associated with hazardous materials releases. Therefore, the potential for impacts associated with hazardous materials releases from the proposed project or variant to combine with impacts associated with hazardous materials releases from other sites is not cumulatively considerable.

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4.3 TRANSPORTATION AND CIRCULATION

This section is a transportation impact assessment prepared by Fehr & Peers Transportation Consultants. This section describes existing and projected future transportation conditions, identifies the potential impacts of implementation of the proposed GE Site Remediation and Redevelopment Project (proposed project) and the San Leandro Street access variant, and identifies City of Oakland Standard Conditions of Approval (SCAs) and recommends mitigation measures for identified significant impacts. The analysis methodology, environmental setting, and regulatory setting are described in the following sections.

The analysis evaluates the transportation-related impacts of the proposed project. The analysis was conducted in compliance with City of Oakland Transportation Impact Review Guidelines dated April 2017, at the time of the Notice of Preparation (NOP).

A. Setting

The existing transportation-related context in which the proposed project would be implemented is described below, beginning with a description of the study area and street network serving the project site. Existing transit, bicycle, and pedestrian facilities are also described. This subsection also discusses planned transportation changes near the site, as well as the regulatory setting.

1. Existing Roadway Network

Existing regional freeway access to the project site is provided via I-880 and I-580. Direct vehicular access to the site is provided via local roadways: International Boulevard, which borders the site on the east and East 12th Street, which terminates just north of the project site (see Figure 3-1). Roadways serving the project's study area are described below. The reported annual average daily traffic volumes (AADT) were obtained from Caltrans' Traffic Volumes on the State Highway System (2017).[1]

- *Interstate 880 (I-880)* is an eight-lane north-south freeway between I-80 in Oakland and I-280 in San Jose. Access between I-880 and the project site is provided through interchanges at 42nd Avenue/High Street and 66th Avenue/Zhone Way. The AADT on I-880 between the 42nd Avenue/High Street and 66th Avenue/Zhone Way Interchanges is about 212,000 vehicles per day.
- *I-580* is an eight-lane north-south freeway in the vicinity of the project. It extends between US 101 in Marin County, and I-5 south of Tracy. Access between I-580 and the project site is provided through interchanges at MacArthur Boulevard and Kuhnle Avenue/Seminary Avenue. Trucks are prohibited on I-580 between Grand Avenue and the City of Oakland city limit with San Leandro. The AADT on I-580 just south of the Kuhnle Avenue/Seminary Avenue Interchange is about 191,000 vehicles per day.

[1] Caltrans' Traffic Volumes on the State Highway System, 2017. Available at: www.dot.ca.gov/trafficops/census/volumes2017/, accessed April 2019.

- *International Boulevard* (State Route 185) is a four-lane north-south roadway adjacent to the east side of the project. It extends between Lake Merritt in Oakland and Jackson Street in Hayward. The AADT on International Boulevard just north of 55th Avenue is about 26,100 vehicles per day.
- *San Leandro Street* is a four-lane north-south roadway just west of the project site. It extends between Fruitvale Avenue in the north and City of San Leandro in the south, where it continues south as San Leandro Boulevard. San Leandro Street is an identified truck route in the City of Oakland.
- *East 12th Street* is a local north-south street in the vicinity of the proposed project. It extends between West Oakland to the north and the project site to the south and provides one travel lane in each direction. trucks are prohibited on East 12th Street between 50th Avenue and the project site.
- *54th Avenue* is a local east-west street just north of the project site. It extends between Wentworth Avenue east of the project site to East 8th Street west of the project site. 54th Avenue provides one travel lane in each direction and is offset across International Boulevard. Trucks are prohibited on 54th Avenue between San Leandro Street and International Boulevard.

2. Existing Transit Services

Transit service providers in the vicinity of the proposed project include Bay Area Rapid Transit (BART) and AC Transit.

a. BART. BART provides regional rail service throughout the East Bay and across the Bay in San Francisco and northern San Mateo County. Based on BART Monthly Ridership Reports, the average weekday ridership in 2018 was about 412,000 systemwide. BART stations most likely to serve the proposed project are the Fruitvale Station, about 1.0 miles northwest of the project site and the Coliseum Station, about 1.3 miles southwest of the project. These stations are served by the Dublin/Pleasanton-Daly City, Richmond-Warm Springs/South Fremont, and Warm Springs/South Fremont-Daly City lines.

b. AC Transit. AC Transit is the primary bus service provider in the City of Oakland and surrounding communities. It provides local service as well as Transbay service to destinations in San Francisco, San Mateo and Santa Clara Counties. AC Transit reports serving about 169,000 riders on a typical weekday in Alameda County.[2]

As described in Table 4.3-1, AC Transit operates Routes 1 and 801 along International Boulevard and Route 45 along Seminary Boulevard. The nearest bus stops to the project site are on northbound International Boulevard just north of 57th Avenue and on southbound

[2] Available at: www.actransit.org/about-us/facts-and-figures/ridership/, accessed April 2019.

International Boulevard just south of 57th Avenue. Neither stop currently provides any amenities such as benches.

Table 4.3-1 Existing Bus Service Summary

Line	Description	Weekday Hours of Operation	Weekday Headways	Weekend Hours of Operation	Weekend Headways
1	12th St. BART Station to San Leandro BART Station via 11th and 12th St. and International Blvd.	5:00 a.m. to 1:15 a.m.	10 minutes	5:00 a.m. to 12:40 a.m.	10 to 20 minutes
45	Eastmont Transit Center to Foothill Square via Hillmont Dr., Seminary Ave., San Leandro St., Hegenberger Dr., 105th Ave., 104th Ave., and 106th Ave.	5:30 a.m. to 10:45 p.m.	15 to 30 minutes	6:00 a.m. to 11:00 p.m.	20 to 40 minutes
801	12th St. BART Station to Fremont BART Station via International Blvd., E. 14th St., and Mission Blvd.	11:45 p.m. to 6:45 a.m.	60 minutes	11:40 p.m. to 7:35 a.m.	30 to 60 minutes

Source: AC Transit website as summarized by Fehr & Peers, 2019.

3. Existing Bicycle Network

The City of Oakland 2019 Bike Plan (Let's Bike Oakland)[3] identifies the following bicycle facility types.

- *Class I Paths* are located off-street and can serve both bicyclists and pedestrians. Recreational trails can be considered Class 1 facilities. Class 1 paths are typically 8 to 10 feet wide excluding shoulders and are generally paved.
- *Class 2 Bicycle Lanes* provide a dedicated area for bicyclists within the paved street width using striping and appropriate signage. These facilities are typically 5 to 6 feet wide.
- *Class 2B Buffered Bicycle Lanes* provide a dedicated area for bicyclists within the paved street, separated from the motor vehicle travel lanes by a painted buffer.
- *Class 3 Bicycle Routes* are located along streets that do not provide enough width for dedicated bicycle lanes. The street is then designated as a bicycle route using signage informing drivers to expect bicyclists.
- *Class 3A Arterial Bicycle Routes* are located along some arterial streets where bicycle lanes are not feasible and parallel streets do not provide adequate connectivity. Speed limits as low as 25 miles per hour (mph), and shared-lane bicycle stencils, wide curb lanes, and signage are used to encourage shared use.
- *Class 3B Neighborhood Bike Routes* are located along residential streets with low traffic volumes. Assignment of right-of-way to the route, traffic calming measures and bicycle traffic signal actuation are used to prioritize through-trips for bicycles.

[3] City of Oakland, 2019. Let's Bike Oakland, 2019 Oakland Bike Plan, May.

- *Class 4 Protected Bicycle Lanes*, also known as cycle tracks, these facilities provide space that is exclusively for bicyclists and separated from motor vehicle travel lanes, parking lanes, and sidewalks. Parked cars, curbs, bollards, or planter boxes provide physical separation between bicyclists and moving cars. Where on-street parking is allowed, it is placed between the bikeway and the travel lanes (rather than between the bikeway and the sidewalk, as is typical for Class 2 bicycle lanes).

There are no existing bicycle facilities adjacent to the project site. The nearest existing bicycle facilities are Class 2 Bicycle Lanes along Bancroft Avenue, about 0.5 miles east of the project site.

4. Existing Pedestrian Network

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Most streets in the vicinity of the project site provide sidewalks along both sides of the street. No sidewalks are currently provided along 57th Avenue, west of International Boulevard. Most intersections along this segment of International Boulevard are currently stop-controlled with at least one marked crosswalk across International Boulevard and diagonal cub-ramps at corners. Most curb-ramps do not have truncated domes.

5. Vehicle Miles Traveled (VMT)

Vehicle miles travelled (VMT) refers to the amount and distance of automobile travel attributable to a project. In 2013, Governor Brown signed Senate Bill (SB) 743, which added Public Resources Code Section 21099 to CEQA, to change the way that transportation impacts are analyzed under CEQA to better align local environmental review with statewide objectives to reduce greenhouse gas (GHG) emissions, encourage infill mixed-use development in designated priority development areas, reduce regional sprawl development, and reduce VMT in California.

In 2016, Oakland adopted VMT thresholds to implement the directive from SB 743 (discussed in more detail below in the regulatory framework section. SB 743 recommends VMT as an appropriate measure for assessing the transportation impact of a project on the environment. SB 743 states that VMT is a more appropriate measure than automobile delay, and that automobile delay as measure by an intersection level of service (LOS) is not an impact on the environment. Automobile delay is a measure of travel speed. Increased travel speed increases safety hazards and encourages automobile use, which increases GHG emissions and air quality impacts. SB 743 specifically targets automobile LOS as an inappropriate measure of environmental impact and encourages the use of VMT as an appropriate replacement measure. Consistent with SB 743, the latest CEQA Guidelines from the State Office of Planning and Research (OPR) published in December 2018 require the use of VMT and prohibit the use of LOS or other congestion-based metrics in CEQA documents after July 2020.

Increased VMT leads to several direct and indirect impacts to the environment and human health. Among other effects, increasing VMT on the roadway network leads to increased emissions of air pollutants, including GHGs, as well as increased consumption of energy. Transportation is associated with more GHG emissions than any other sector in California. As documented in the City of Oakland Energy and Climate Action Plan, updated in March 2018, 57 percent of Oakland's sector-based GHG emissions are produced by transportation and land use. Making transportation more efficient by reducing VMT per capita is the most effective means to reduce GHG emissions per capita.

This analysis uses the Metropolitan Transportation Commission (MTC) Travel Model to estimate VMT.[4] Based on the MTC Travel Model, the regional average VMT per worker is 21.8 while the average for the project area is 25.3 under 2020 conditions.

6. Planned Transportation Network Changes

Changes are planned for the various transportation modes in the project vicinity, as described below. These are changes that are not related to the proposed project and would be implemented regardless of the project. Changes that have environmental clearance and funding are assumed in the analysis of future conditions in this EIR. Changes lacking final design, full approval, and/or full funding are not considered reasonably foreseeable, and therefore are not assumed in the analysis of future conditions. Planned changes by travel mode are summarized below.

a. East Bay Bus Rapid Transit Project. AC Transit is constructing the East Bay Bus Rapid Transit (BRT) Project between the Uptown Transit Center and the San Leandro BART Station. BRT station platforms will allow level boarding and pre-payment so loading and unloading passengers is more efficient. It is estimated that BRT buses will arrive every seven minutes during the day time. BRT will operate in dedicated lanes along most of the corridor, including adjacent to the project site. The nearest BRT stations will be located on International Boulevard just north of 54th Avenue, about 500 feet north of the project, and on International Boulevard just north of 58th Avenue, about 750 feet south of the project. The BRT Project will accommodate the bus-only lanes by eliminating one automobile lane in each direction on International Boulevard. Near the project site, the BRT Project will also install Class 2 Bicycle Lanes in each direction of International Boulevard south of 55th Avenue and new signals at the intersections along International Boulevard at 54th, 55th and 57th Avenues.

The International Boulevard/56th Avenue intersection would continue to be stop-controlled on the 56th Avenue approach, and only right-turns would be allowed at the intersection. A high-visibility crosswalk with advanced yield markings and signs would be installed on the south approach of the intersection. The BRT Project would also include pedestrian improvements as

[4] MTC VMT estimates for each TAZ in the region are published through online maps, including Simulated VMT per Worker by Place of Work. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=98463b4f73ca43c5944a5c30648fd689, accessed April 2019.

improved lighting and landscaping, directional curb-ramps, and signal-protected crossings at BRT Stations. The BRT Project would also install Class 2 Bicycle Lanes along International Boulevard between 54th and 85th Avenues. The BRT Project is assumed in the EIR analysis because it is under construction, fully funded, and expected to be in operation in early 2020.

b. Planned Bicycle Improvements. The City of Oakland 2019 Bike Plan proposes the following improvements to the bicycle facilities in the project vicinity. In addition to the currently under construction improvements along International Boulevard described above, the planned facilities in the vicinity of the proposed project include:

- Class 1 Path along the BART tracks between San Leandro Street and the project site which will be part of the East Bay Greenway, which will ultimately connect downtown Oakland and Fremont mostly along BART right-of-way. In the project vicinity, the East Bay Greenway may eliminate one automobile lane along San Leandro Street, which would result in San Leandro Street providing one automobile lane in each direction and a center left-turn lane.
- Class 2 Bicycle Lanes along East 12th Street between 55th and 50th Avenues, which would continue as Class 4 Protected Bike Lanes north of 55th Avenue.
- Class 3B Neighborhood Bike Route along 54th Avenue between San Leandro Street and Bancroft Avenue.
- Class 3B Neighborhood Bike Route along 55th Avenue between International and MacArthur Boulevards.

These projects are not assumed in the EIR analysis because they are not funded.

7. Regulatory Setting

a. State CEQA Thresholds of Significance Transportation Guidelines. On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's CEQA Thresholds of Significance Guidelines related to transportation impacts in order to implement the directive from Senate Bill 743[5] to modify local environmental review processes by removing automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environment pursuant to CEQA. The Planning Commission direction aligns with the December 2018 guidance from the State Office of Planning and Research (OPR) and the City's approach to transportation impact analysis with adopted plans and polices related to transportation, which promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses.

b. Senate Bill 743. On September 27, 2013, Senate Bill (SB) 743 was signed into law, building on legislative changes from SB 375, AB 32, and AB 1358. SB 743 began the process to

[5] Steinberg, 2013. Available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743, accessed March 10, 2017.

modify how impacts to the transportation system are assessed for purposes of CEQA compliance. These changes include the elimination of auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. SB 743 includes amendments that revise the definition of "infill opportunity zones" to allow cities and counties to opt out of traditional LOS standards established by congestion management programs (CMPs) and require OPR to update the CEQA Guidelines and establish criteria for determining the significance of transportation impacts of projects within transit priority areas.

As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." A preliminary discussion draft of alternative metrics was produced in the summer of 2014, with the final draft of changes to the CEQA Guidelines and an accompanying technical advisory document made available for public comment on January 20, 2016. The final guidelines were finalized in December 2018 and will take effect statewide in July 2020.

c. Oakland Plans and Policies. The Oakland General Plan comprises numerous elements, and those containing policies relevant to transportation resources primarily are in the Land Use and Transportation Element (LUTE). The goals and policies contained in the various General Plan Elements are often competing. In reviewing a project for conformity with the General Plan, the City is required to 'balance' the competing goals and policies. This project is reviewed for compliance with the following local plans and policies:

- General Plan LUTE.
- City of Oakland Pedestrian Master Plan (incorporated into the City's General Plan).
- City of Oakland 2019 Bike Plan.
- City of Oakland Public Transit and Alternative Modes Policy.
- City of Oakland Complete Streets Policy.
- City of Oakland Standard Conditions of Approval and Uniformly Applied Development Standards.
- September 21, 2016, City of Oakland Planning Commission, update to Oakland's California Environmental Quality Act (CEQA) Thresholds of Significance Guidelines aligning with Senate Bill 743.

Oakland General Plan. The General Plan is a comprehensive plan for the growth and development of the City. The General Plan includes policies related to land use and circulation; housing; recreation; conservation and open space; noise; environmental hazards; and historic resources. These topics are addressed within individual elements of the General Plan: Land Use and Transportation; Pedestrian Master Plan; Bicycle Master Plan; Housing; Historic

Preservation; Open Space; Conservation; Recreation; Noise; and Safety. Each is addressed separately below.

The General Plan states the following regarding a project's consistency with the General Plan in the context of CEQA:

The General Plan contains many policies which may in some cases address different goals, policies and objectives and thus some policies may compete with each other. The Planning Commission and City Council, in deciding whether to approve a proposed project, must decide whether, on balance, the project is consistent (i.e., in general harmony) with the General Plan. The fact that a specific project does not meet all General Plan goals, policies and objectives does not inherently result in a significant effect on the environment within the context of the California Environmental Quality Act (CEQA).[6]

Land Use and Transportation Element. The City of Oakland, through various policy documents, states a strong preference for encouraging use of pedestrian, bicycle, and transit travel modes. The following policies are included in the LUTE:

LUTE Policy Framework, Encouraging Alternative Means of Transportation: "A key challenge for Oakland is to encourage commuters to carpool or use alternative modes of transportation, including bicycling or walking. The Policy Framework proposes that congestion be lessened by promoting alternative means of transportation, such as transit, biking, and walking, providing facilities that support alternative modes, and implementing street improvements. The City will continue to work closely with local and regional transit providers to increase accessibility to transit and improve intermodal transportation connections and facilities. Additionally, policies support the introduction of light rail and trolley buses along appropriate arterials in heavily traveled corridors, and expanded use of ferries in the bay and estuary."

Policy T3.5: Including Bikeways and Pedestrian Walks: The City should include bikeways and pedestrian walks in the planning of new, reconstructed, or realized streets, wherever possible.

Policy T3.6: Encouraging Transit: The City should encourage and promote use of public transit in Oakland by expediting the movement of and access to transit vehicles on designated "transit streets" as shown on the Transportation Plan. (Policies T3.6 and T3.7 are based on the City Council's passage of "Transit First" policy in October 1996.)

Policy T3.7: Resolving Transportation Conflicts: The City, in constructing and maintaining its transportation infrastructure, should resolve any conflicts between public transit and single occupant vehicles in favor of the transportation mode that

[6] City Council Resolution No. 79312 C.M.S., adopted June 2005.

has the potential to provide the greatest mobility and access for people, rather than vehicles, giving due consideration to the environmental, public safety, economic development, health and social equity impacts.

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

Pedestrian Master Plan. Oakland's Pedestrian Master Plan Oakland Walks*!* was published in 2017 and identifies policies and implementation measures that promote a walkable City. The plan's vision is built around four pillars:

1. *Holistic Community Safety* **–** Make Oakland's pedestrian environment safe and welcoming.
2. *Equity* **–** Recognizing a historical pattern of disinvestment, focus investment and resources to create equitable, accessible walking conditions to meet the needs of Oakland's diverse communities.
3. *Responsiveness* **–** Develop and provide tools to ensure that Oakland creates and maintains a vibrant pedestrian environment.
4. *Vitality* **–** Ensure that Oakland's pedestrian environment is welcoming, well connected, supports the local economy, and sustains healthy communities.

Within these four pillars Oakland Walks! strives for five outcomes and within each are several actions.

- *Outcome 1 Increase Pedestrian Safety* – There are ten actions within this outcome. The City will install pedestrian safety improvements in high injury corridors, develop new policies, adopt Vision Zero, upgrade signals and other infrastructure, work to reduce vehicle speeds, improve lighting, and explore ways to equitably enforce traffic laws.
- *Outcome 2 Create Streets and Places that Promote Walking* – There are nine actions within this outcome. The City will integrate safety into the design of new streets, incorporate art into pedestrian infrastructure, plant more street trees, repair sidewalks, install accessible curb ramps and other features to improve the pedestrian environment for vulnerable populations, and provide public open space in underutilized roadways. The City will also pursue citywide programs and partnerships with nonprofits and community groups to promote walking.
- *Outcome 3 Improve Walkability to Key Destinations* – There are six actions within this outcome. The City will develop a prioritization strategy to best focus the benefits of the Safe Routes to School program, establish a similar program focused on first and last mile access to transit, support wayfinding efforts that can be used by vulnerable populations, and identify strategies for improving the walking environment in and near Caltrans-owned rights-of-way,

such as underneath freeway overpasses, on and off ramps, and streets where the surface grade is un-even due to railroad tracks. Additionally, the City will use Walk Score® to improve walkability to key destinations and to enhance areas where car-ownership and usage is lower than the citywide average.

- *Outcome 4 Engage the Oakland Community in Creating Vibrant Pedestrian Environments* – There are five actions within this outcome. The City will reinvigorate existing communication methods and establish new protocols for engaging about pedestrian projects and enabling community-determined pedestrian projects. The City will also partner with groups that specialize in addressing specific vulnerable populations, for example, the Mayor's Commission on Persons with Disabilities, to understand to the experiences of persons with disabilities.
- *Outcome 5 Improve Metrics, Evaluations, Funding, and Tools for Creating Pedestrian Environments* – There are nine actions within this outcome. The City will develop and implement a host of data collection, data analysis, and data reporting efforts, as well as ensure adequate staff training in pedestrian design standards to ensure that the Plan implementation is efficient, accountable, effective, and equitably distributed.

2019 Oakland Bike Plan. The Oakland City Council adopted the 2019 Oakland Bike Plan (Let's Bike Oakland) in May 2019 and incorporated the plan into the adopted General Plan. The adopted plan identifies programs and projects to improve the bikeability of Oakland, and includes four main goals regarding access, health and safety, affordability and collaboration. Each goal outlines specific objectives and actions related to the goal. The following actions are applicable to the project:

Access Goal, Objective A: Increase access to jobs, education, retail, park and libraries, schools, recreational centers, transit, and other neighborhood destinations.

Action A2: Increase the supply of bicycle parking at neighborhood destinations like schools, medical centers, grocery stores, and government offices.

Action A3: Evaluate the potential to combine transportation-impact fees for new developments within the same neighborhood to provide continuous, high-quality bicycle facilities.

Access Goal, Objective C: Support public transit service.

Action C1: Design bikeways that provide first and last mile connections to transit

Health & Safety Goal, Objective C: Reduce air pollution, asthma rates and greenhouse gas emissions.

Action C1: Build a bicycle network that encourages Oaklanders to choose modes of transportation other than driving by providing low-stress facilities and integrating bikes with transit.

Action C2: Achieve a 20 percent reduction in vehicle miles traveled annually as residents, workers and visitors meet daily needs by walking, bicycling and using transit, consistent with the City's Energy and Climate Action Plan (2018).

Affordability Goal, Objective A: Reduce the overall household costs for all Oaklanders.

Action A1: Build a bicycle network that provides low-stress bicycle facilities for people in low-income neighborhoods, encouraging the use of bicycling as low-cost transportation.

Affordability Goal, Objective B: Reduce long-term transportation costs by reducing the need for vehicle ownership or for parking in new developments

Action B1: Update the Oakland Planning Code to eliminate parking minimums.

Action B2: Revise the menu of Transportation Demand Management options to include bike share passes, fix-it stations and hydration stations.

Action B3: Update Oakland's Bicycle Parking Ordinance to determine whether they reflect the type and quantity of parking needed in new developments and major renovations.

Action B4: Update the Oakland Planning Code to require end-of-trip facilities such as showers and changing rooms in major non-residential developments.

City of Oakland Public Transit and Alternative Modes Policy. The City of Oakland adopted the Public Transit and Alternative Modes Policy, also known as the "Transit-First Policy," in October 2006 (City Council Resolution 73036 C.M.S.). This resolution supports public transit and other alternatives to single occupant vehicles and directs the LUTE to incorporate "various methods of expediting transit services on designated streets and encouraging greater transit use." The resolution also directs the City, in constructing and maintaining its transportation infrastructure, to resolve any conflicts between public transit and single occupant vehicles on City streets in favor of the transportation mode that provides the greatest mobility for people rather than vehicles giving due consideration to the environment, public safety, economic development, health, and social equity impacts.

City of Oakland Complete Street Policy. The City of Oakland adopted the Complete Street Policy to Further Ensure that Oakland Streets Provide Safe and Convenient Travel Options for all Users in January 2013 (City Council Resolution 84204 C.M.S.). This resolution,

consistent with the California Complete Streets Act of 2008, directs the City of Oakland to plan, design, construct, operate, and maintain the street network in the City to accommodate safe, convenient, comfortable travel for all modes, including pedestrians, bicyclists, transit users, motorists, trucks, and emergency vehicles.

Standard Conditions of Approval. The City's Standard Conditions of Approval (SCAs) that directly pertain to transportation and circulation and that apply to proposed project are listed below. If the proposed project is adopted by the City, all applicable SCAs will be adopted as conditions of approval and required, as applicable, of the proposed project to help ensure no significant impacts. Because the SCAs are incorporated as part of the proposed project, they are not listed as mitigation measures.

SCA-TRA-1: Construction Management Plan (#13)
Requirement. Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department, Department of Transportation, and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing plan, proposed truck routes, traffic control plan, complaint management plan, construction worker parking plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project.
When Required: Prior to approval of construction-related permit
Initial Approval: Department of Transportation
Monitoring/Inspection: Department of Transportation

SCA-TRA-2: Construction Activity in the Public Right-of-Way (#76)
a. Obstruction Permit Required
Requirement: The project applicant shall obtain an obstruction permit from the City prior to placing any temporary construction-related obstruction in the public right-of-way, including City streets, sidewalks, bicycle facilities, and bus stops.
When Required: Prior to approval of construction-related permit
Initial Approval: Department of Transportation
Monitoring/Inspection: Department of Transportation

b. Traffic Control Plan Required
Requirement: In the event of obstructions to vehicle or bicycle travel lanes, bus stops, or sidewalks, the project applicant shall submit a Traffic Control Plan to the City for review and approval prior to obtaining an obstruction permit. The project applicant shall submit evidence of City approval of the Traffic Control Plan with the application for an obstruction permit. The Traffic Control Plan shall contain a set of comprehensive traffic control measures for auto, transit, bicycle, and pedestrian accommodations (or detours, if accommodations are not feasible), including detour signs if required,

lane closure procedures, signs, cones for drivers, and designated construction access routes. The Traffic Control Plan shall be in conformance with the City's Supplemental Design Guidance for Accommodating Pedestrians, Bicyclists, and Bus Facilities in Construction Zones. The project applicant shall implement the approved Plan during construction.
When Required: Prior to demolition permit
Initial Approval: Department of Transportation
Monitoring/Inspection: Department of Transportation

c. Repair of City Streets
Requirement: The project applicant shall repair any damage to the public right-of way, including streets and sidewalks, caused by project construction at his/her expense within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to approval of the final inspection of the construction-related permit. All damage that is a threat to public health or safety shall be repaired immediately.
When Required: Prior to building permit final
Initial Approval: N/A
Monitoring/Inspection: Department of Transportation

SCA-TRA-3: Bicycle Parking (#77)
Requirement: The project applicant shall comply with the City of Oakland Bicycle Parking Requirements (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall demonstrate compliance with the requirements.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-TRA-4: Transportation Improvements (#78)
Requirement: The project applicant shall implement the recommended on- and off-site transportation-related improvements contained within the Transportation Impact Review for the project (e.g., signal timing adjustments, restriping, signalization, traffic control devices, roadway reconfigurations, transportation demand management measures, and transit, pedestrian, and bicyclist amenities). The project applicant is responsible for funding and installing the improvements, and shall obtain all necessary permits and approvals from the City and/or other applicable regulatory agencies such as, but not limited to, Caltrans (for improvements related to Caltrans facilities) and the California Public Utilities Commission (for improvements related to railroad crossings), prior to installing the improvements. To implement this measure for intersection modifications, the project applicant shall submit Plans, Specifications, and Estimates (PS&E) to the City for review and approval. All elements shall be designed to applicable City standards in effect at the time of construction and all new or upgraded signals shall include these enhancements as required by the City. All other facilities supporting vehicle travel and alternative modes through the intersection shall be brought up to both City standards and ADA standards (according to Federal and State Access Board guidelines) at the time of construction. Current City Standards call for, among other items, the elements listed below:

a. 2070L Type Controller with cabinet accessory
b. GPS communication (clock)
c. Accessible pedestrian crosswalks according to Federal and State Access Board guidelines with signals (audible and tactile)
d. Countdown pedestrian head module switch out
e. City Standard ADA wheelchair ramps
f. Video detection on existing (or new, if required)
g. Mast arm poles, full activation (where applicable)

h. Polara Push buttons (full activation)
i. Bicycle detection (full activation)
j. Pull boxes
k. Signal interconnect and communication with trenching (where applicable), or through existing conduit (where applicable), 600 feet maximum
l. Conduit replacement contingency
m. Fiber switch
n. PTZ camera (where applicable)
o. Transit Signal Priority (TSP) equipment consistent with other signals along corridor
p. Signal timing plans for the signals in the coordination group
q. Bi-directional curb ramps (where feasible, and if project is on a street corner)
r. Upgrade ramps on receiving curb (where feasible, and if project is on a street corner)

When Required: Prior to building permit final or as otherwise specified
Initial Approval: Bureau of Building; Department of Transportation
Monitoring/Inspection: Bureau of Building

SCA-TRA-5: Transportation and Parking Demand Management (#79)
a. Transportation and Parking Demand Management (TDM) Plan Required

Requirement: The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.

i. The goals of the TDM Plan shall be the following:
   - Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable.
   - Achieve the following project vehicle trip reductions (VTR):
     - Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR
     - Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR
   - Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate.
   - Enhance the City's transportation system, consistent with City policies and programs.

ii. The TDM Plan should include the following:
   - Baseline existing conditions of parking and curbside regulations within the surrounding neighborhood that could affect the effectiveness of TDM strategies, including inventory of parking spaces and occupancy if applicable.
   - Proposed TDM strategies to achieve VTR goals (see below).
     i. For employers with 100 or more employees at the subject site, the TDM Plan shall also comply with the requirements of Oakland Municipal Code Chapter 10.68 Employer-Based Trip Reduction Program.
     ii. The following TDM strategies **must** be incorporated into a TDM Plan based on a project location or other characteristics. When required, these mandatory strategies should be identified as a credit toward a project's VTR.

SCA-TRA-5 Improvement	Required by code or when…
Bus boarding bulbs or islands	• A bus boarding bulb or island does not already exist, and a bus stop is located along the project frontage; and/or • A bus stop along the project frontage serves a route with 15 minutes or better peak hour service and has a shared bus-bike lane curb
Bus shelter	• A stop with no shelter is located within the project frontage, or • The project is located within 0.10 miles of a flag stop with 25 or more boardings per day
Concrete bus pad	• A bus stop is located along the project frontage and a concrete bus pad does not already exist

SCA-TRA-5 Improvement	Required by code or when…
Curb extensions or bulb-outs	• Identified as an improvement within site analysis
Implementation of a corridor-level bikeway improvement	• A buffered Class II or Class IV bikeway facility is in a local or county adopted plan within 0.10 miles of the project location; and • The project would generate 500 or more daily bicycle trips
Implementation of a corridor-level transit capital improvement	• A high-quality transit facility is in a local or county adopted plan within 0.25 miles of the project location; and • The project would generate 400 or more peak period transit trips
Installation of amenities such as lighting; pedestrian-oriented green infrastructure, trees, or other greening landscape; and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.	• Always required
Installation of safety improvements identified in the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.)	• When improvements are identified in the Pedestrian Master Plan along project frontage or at an adjacent intersection
In-street bicycle corral	• A project includes more than 10,000 square feet of ground floor retail, is located along a Tier 1 bikeway, and on-street vehicle parking is provided along the project frontages.
Intersection improvements[7]	• Identified as an improvement within site analysis
New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards	• Always required
No monthly permits and establish minimum price floor for public parking[8]	• If proposed parking ratio exceeds 1:1000 sf. (commercial)
Parking garage is designed with retrofit capability	• Optional if proposed parking ratio exceeds 1:1.25 (residential) or 1:1000 sf. (commercial)
Parking space reserved for car share	• If a project is providing parking and a project is located within downtown. One car share space reserved for buildings between 50 – 200 units, then one car share space per 200 units.
Paving, lane striping or restriping (vehicle and bicycle), and signs to midpoint of street section	• Typically required
Pedestrian crossing improvements	• Identified as an improvement within site analysis
Pedestrian-supportive signal changes[9]	• Identified as an improvement within operations analysis
Real-time transit information system	• A project frontage block includes a bus stop or BART station and is along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better
Relocating bus stops to far side	• A project is located within 0.10 mile of any active bus stop that is currently near-side
Signal upgrades[10]	• Project size exceeds 100 residential units, 80,000 sf. of retail, or 100,000 sf. of commercial; and • Project frontage abuts an intersection with signal infrastructure older than 15 years

[7] Including but not limited to visibility improvements, shortening corner radii, pedestrian safety islands, accounting for pedestrian desire lines.

[8] May also provide a cash incentive or transit pass alternative to a free parking space in commercial properties.

[9] Including but not limited to reducing signal cycle lengths to less than 90 seconds to avoid pedestrian crossings against the signal, providing a leading pedestrian interval, provide a “scramble” signal phase where appropriate.

[10] Including typical traffic lights, pedestrian signals, bike actuated signals, transit-only signals

SCA-TRA-5 Improvement	Required by code or when…
Transit queue jumps	• Identified as a needed improvement within operations analysis of a project with frontage along a Tier 1 transit route with 2 or more routes or peak period frequency of 15 minutes or better
Trenching and placement of conduit for providing traffic signal interconnect	• Project size exceeds 100 units, 80,000 sf. of retail, or 100,000 sf. of commercial; and • Project frontage block is identified for signal interconnect improvements as part of a planned ITS improvement; and • A major transit improvement is identified within operations analysis requiring traffic signal interconnect
Unbundled parking	• If proposed parking ratio exceeds 1:1.25 (residential)

iii. Other TDM strategies to consider include, but are not limited to, the following:
- Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement.
- Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping.
- Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.
- Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan, the Master Street Tree List and Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively) and any applicable streetscape plan.
- Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.
- Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).
- Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes.
- Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3).
- Guaranteed ride home program for employees, either through 511.org or through separate program.
- Pre-tax commuter benefits (commuter checks) for employees.
- Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.
- On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools.
- Distribution of information concerning alternative transportation options.
- Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.

- Parking management strategies including attendant/valet parking and shared parking spaces.
- Requiring tenants to provide opportunities and the ability to work off-site.
- Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).
- Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.

The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.
When Required: Prior to approval of planning application.
Initial Approval: Bureau of Planning
Monitoring/Inspection: N/A

b. TDM Implementation – Physical Improvements
Requirement: For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/approvals from the City and install the improvements prior to the completion of the project.
When Required: Prior to building permit final
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

c. TDM Implementation – Operational Strategies
Requirement: For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.
When Required: Ongoing
Initial Approval: Department of Transportation
Monitoring/Inspection: Department of Transportation

SCA-TRA-6: Transportation Impact Fee (#80)
Requirement: The project applicant shall comply with the requirements of the City of Oakland Transportation Impact Fee Ordinance (chapter 15.74 of the Oakland Municipal Code).
When Required: Prior to issuance of building permit
Initial Approval: Bureau of Building
Monitoring/Inspection: N/A

SCA-TRA-7: Railroad Crossings (#82)
Requirement: The project applicant shall submit for City review and approval a Diagnostic Review to evaluate potential impacts to at-grade railroad crossings resulting from project-related traffic. In general, the major types of impacts to consider are collisions between trains and vehicles, trains and pedestrians, and trains and bicyclists. The Diagnostic Review shall include specific traffic elements, such as roadway and rail description, accident history, traffic volumes (all modes, including pedestrian and bicyclist crossing movements), train volumes, vehicular speeds, train speeds, and existing rail and traffic control.
Where the Diagnostic Review identifies potentially substantially dangerous crossing conditions at at-grade railroad crossings caused by the project, measures relative to the project's traffic contribution to the crossings shall be applied through project redesign and/or incorporation of the appropriate measures to reduce potential adverse impacts at the crossings. These measures may include, without limitation, the following:

a. Installation of grade separations at crossings, i.e., physically separating roads and railroad tracks by constructing overpasses or underpasses
b. Improvements to warning devices at existing highway rail crossings that are impacted by project traffic
c. Installation of additional warning signage
d. Improvements to traffic signaling at intersections adjacent to crossings, e.g., signal preemption
e. Installation of median separation to prevent vehicles from driving around railroad crossing gates
f. Where sound walls, landscaping, buildings, etc. would be installed near crossings, maintaining the visibility of warning devices and approaching trains
g. Prohibition of parking within 100 feet of the crossings to improve the visibility of warning devices and approaching trains
h. Construction of pull-out lanes for buses and vehicles transporting hazardous materials
i. Installation of vandal-resistant fencing or walls to limit the access of pedestrians onto the railroad right-of-way
j. Elimination of driveways near crossings
k. Increased enforcement of traffic laws at crossings
l. Rail safety awareness programs to educate the public about the hazards of highway-rail grade crossings

Any proposed improvements must be coordinated with California Public Utility Commission (CPUC) and affected railroads and all necessary permits/approvals obtained, including a GO 88-B Request (Authorization to Alter Highway Rail Crossings). The project applicant shall implement the approved measures during construction of the project.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-TRA-8: Plug-In Electric Vehicle (PEV) Charging Infrastructure (#83)
a. PEV-Ready Parking Spaces
Requirement: The applicant shall submit, for review and approval of the Building Official and the Zoning Manager, plans that show the location of parking spaces equipped with full electrical circuits designated for future PEV charging (i.e. "PEV-Ready) per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-Ready parking spaces.
When Required: Prior to Issuance of Building Permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

b. PEV-Capable Parking Spaces
Requirement: The applicant shall submit, for review and approval of the Building Official, plans that show the location of inaccessible conduit to supply PEV-capable parking spaces per the requirements of Chapter 15.04 of the Oakland Municipal Code. Building electrical plans shall indicate sufficient electrical capacity to supply the required PEV-capable parking spaces.
When Required: Prior to Issuance of Building Permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

c. ADA-Accessible Spaces
Requirement: The applicant shall submit, for review and approval of the Building Official, plans that show the location of future accessible EV parking spaces as required under Title 24 Chapter 11B Table 11B-228.3.2.1, and specify plans to construct all future accessible EV parking spaces with appropriate grade, vertical clearance, and accessible path of travel to allow installation of accessible EV charging station(s).
When Required: Prior to Issuance of Building Permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

B. Impacts and Mitigation Measures

This section describes environmental impacts related to transportation and circulation that could result from the implementation of the proposed project or San Leandro Street access variant. The section begins with the City of Oakland's criteria of significance that establish the thresholds for determining whether an impact is significant. The next section identifies project transportation characteristics, and the latter part of this section presents the impacts associated with the proposed project and identifies SCAs and/or mitigation measures to address these impacts as needed.

1. Criteria of Significance

As noted above the City's criteria of significance are consistent with the latest CEQA Guidelines published by OPR in December 2018. The proposed project would have a significant impact on the environment if it would:

a. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit, specifically:

- Cause substantial additional vehicle miles traveled (VMT) per capita, per service population, or other appropriate efficiency measure. Specifically,
- For residential uses, a project would cause substantial additional VMT if it exceeds existing regional household VMT per capita minus 15 percent.
- For office uses, a project would cause substantial additional VMT if it exceeds the existing regional VMT per worker minus 15 percent.

- For retail uses, a project would cause substantial additional VMT if it exceeds the existing regional VMT per worker minus 15 percent.

b. Conflict with a plan, ordinance, or policy addressing the safety or performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths (except for automobile level of service or other measures of vehicle delay).

c. Substantially induce additional automobile travel by increasing physical roadway capacity in congested areas (i.e., by adding new mixed-flow lanes) or by adding new roadways to the network.

2. Project Transportation Characteristics and Impacts

This section discusses various characteristics of the proposed project and access variant that affect transportation and circulation.

The proposed project is located on the west side of International Boulevard between 54th and 57th Avenues in Oakland. The 24-acre project site is occupied by vacant buildings, which used to be a GE manufacturing facility, and will be demolished as part of the proposed project, with the exception of the bulkhead portion of Building #1. The proposed project and variant would construct a single building providing approximately 534,208 square feet of warehouse space and 10,000 square feet of accessory office.

As shown on Figure 3-5, Conceptual Site Plan, automobile and truck access for the proposed project would be provided through four driveways: three driveways on International Boulevard and one on East 12th Street, which are described below:

- The north driveway on International Boulevard would be limited to right-in/right-out only and would be used by passenger vehicles only.
- The center driveway on International Boulevard, would be located opposite 55th Avenue. All movements would be allowed at this intersection and the intersection would accommodate both passenger vehicles and trucks. In coordination with the BRT Project, the project sponsor would modify the new signal installed at 55th Avenue to accommodate left-turns into and out of the driveway by both passenger vehicles and trucks.
- The south driveway on International Boulevard would be limited to right-in/right-out only and would accommodate both passenger vehicles and trucks.
- The existing driveway at the end of East 12th Street, just south of 54th Avenue. Since trucks are prohibited on East 12th Street, 54th Avenue, and other adjacent streets, this driveway would be used by passenger vehicles only.

The San Leandro Street access variant, shown on Figure 3-13, would provide an additional driveway at the northwest corner of the project on 54th Avenue, just east of the railroad tracks. This analysis conservatively assumes that all heavy trucks would use the San Leandro Street

driveway to access San Leandro Street. Trucks would continue to be prohibited on 54th Avenue east of the driveway, and right turns from the driveway to eastbound 54th Avenue and left-turns from westbound 54th Avenue to the driveway also would be prohibited. Passenger vehicles would not be allowed to access the San Leandro Street driveway, and would access the site via International Boulevard.

The project would provide 219 parking spaces and accommodate 85 loading docks.

Trip generation is the process of estimating the number of vehicles that would likely access the project on any given day. Table 4.3-2 summarizes the trip generation for the proposed project. Trip generation data published by the Institute of Transportation Engineers (ITE) in the Trip Generation Manual (10th Edition) was used as a starting point to estimate the vehicle trip generation.

Table 4.3-2 Project and Variant Passenger Vehicle and Truck Trip Generation

Land Use	ITE Code	Size[a]	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehouse [b]	150	525 KSF	910	69	20	89	27	73	100
Truck Trips [c]			340	12	4	16	6	15	21
Passenger Cars, unadjusted			570	57	16	73	21	58	79
Non-Auto Reduction (23%) [d]			*-130*	*-13*	*-4*	*-17*	*-5*	*-13*	*-18*
Passenger Cars, adjusted			440	44	12	56	16	45	61
Office [e]	710	10 KSF	100	10	2	12	2	10	12
Non-Auto Reduction (23%) [d]			*-20*	*-2*	*0*	*-2*	*0*	*-2*	*-2*
Passenger Cars, adjusted			80	8	2	10	2	8	10
Adjusted Total Project Trips			**860**	**64**	**18**	**82**	**24**	**68**	**92**
Truck trips			340	12	4	16	6	15	21
Passenger Vehicle Trips			520	52	14	66	18	53	71

[a] KSF = 1,000 square feet.
[b] ITE *Trip Generation (10th Edition)* land use category 150 (Warehousing):
Daily: T = 1.74 * X, AM Peak Hour: T = 0.17 * X (77% in, 23% out), PM Peak Hour: T = 0.19 * X (27% in, 73% out)
[c] Based on truck trip generation data in *ITE Trip Generation Handbook* (3rd Edition), Appendix I.
[d] Reduction of 23.1% assumed, based on City of Oakland *Transportation Impact Review Guidelines* using Census data for urban environments over one mile of a BART Station.
[e] ITE *Trip Generation (10th Edition)* land use category 710 (General Office Building):
Daily: T = 9.74 * X, AM Peak Hour: T = 1.16 * X (86% in, 14% out), PM Peak Hour: T = 1.15 * X (16% in, 84% out)
Source: Fehr & Peers, 2019.

The ITE data is primarily based on data collected at single-use suburban sites where the automobile is often the only travel mode. However, the project site is in a medium density mixed-use environment near some transit service, and it is expected to generate more walk, bike, or transit trips than typical suburban settings. Since the project is about 1.3 miles from both

the Fruitvale and Coliseum BART stations, this analysis reduces the ITE based trip generation by about 23 percent to account for non-automobile trips. This reduction is consistent with the City of Oakland's Transportation Impact Review Guidelines (TIRG) and is based on US Census commute data for Alameda County from the 2014 5-Year Estimates of the American Community Survey (ACS), which shows that the non-automobile mode share for urban areas more than one mile from a BART Station is about 23 percent.

As presented in Table 4.3-2, the adjusted total trip generation for the proposed project and variant is approximately 860 trips daily, 82 AM peak hour, and 92 PM peak hour automobile trips. The proposed project would generate more than 50 net new peak hour trips. It is estimated that about 40 percent of the daily, 20 percent of the AM peak hour, and 23 percent of PM peak hour trips would be truck trips. The trip generation presented in this table does not account for the TDM Plan required by City SCA-TRA-5: Transportation and Parking Demand Management (#79) (provided in Appendix E), which is required to reduce the passenger car trips generated by the project by at least 10 percent.

The impacts of the proposed project, as well as the access variant, on transportation and circulation and mitigation measures for the identified significant impacts are discussed below.

a. Vehicle Miles Traveled (VMT). This section identifies the approach and evaluates the project for impacts associated with VMT.

Many factors affect travel behavior, including density of development, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development that is located at a great distance from other land uses, in areas with poor access to non-single occupancy vehicle travel modes generate more automobile travel compared to development located in urban areas. In urban areas a higher density of development, a mix of land uses, and travel options other than private vehicles are available.

OPR established that the VMT metric is the appropriate metric to fully account for the many factors that affect travel behavior and specifically indicated that VMT should be reported on a per capita basis for residential uses and a per worker basis for office uses, and this approach aligns with the City's direction established at the September 21, 2016, meeting of the Planning Commission.

VMT Estimate Approach. Estimating VMT requires the use of travel demand models to fully capture the length of trips on the transportation network as well as the changes in VMT behavior that may occur with the introduction of the project. This analysis uses the MTC Travel Model.

Neighborhoods within Oakland are expressed geographically in transportation analysis zones, or TAZs. The MTC Travel Model includes approximately 120 TAZs within Oakland that vary in

size from a few city blocks in the downtown core, to multiple blocks in outer neighborhoods, to even larger geographic areas in lower density areas in the hills. TAZs are used in transportation planning models for transportation analysis and other planning purposes.

The MTC Travel model assigns all predicted trips within, across, to or from the nine-county San Francisco Bay Area region onto the roadway network and the transit system, by mode (single-driver and carpool vehicle, biking, walking, or transit) and transit carrier (bus, rail) for a scenario.

The travel behavior from MTC Travel Model is modeled based on the following inputs:

- Socioeconomic data developed by ABAG.
- Population data created using 2000 US Census and modified using the open source PopSyn software.
- Zonal accessibility measurements for destinations of interest.
- Travel characteristics and automobile ownership rates derived from the 2000 Bay Area Travel Survey.
- Observed vehicle counts and transit boardings.

The daily VMT output from the MTC Travel Model for residential and employment uses comes from a tour-based analysis. The tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from the project site. In this way, all the VMT for an individual resident or worker is included; not just trips into and out of the person's home or workplace. For example: a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. The tour-based approach would add up the total amount driven and assign the daily VMT to this resident for the total number of miles driven on the entire "tour."

Based on the MTC Travel Model, the regional average daily VMT per worker is 21.8 under 2020 conditions and 20.3 under 2040 conditions. MTC has calculated these same metrics for every TAZ in the nine-county Bay Area.

VMT Screening Evaluation. According to the City of Oakland thresholds, standards, and TIRG guidelines, VMT impacts could be less than significant for a project if any of the identified screening criteria outlined below are met:

1. *Small Projects:* The project generates fewer than 100 vehicle trips per day.
2. *Low-VMT Areas:* The project meets map-based screening criteria by being located in an area that exhibits below threshold VMT, or 15 percent or more below the regional average.

3. *Near Transit Stations:* The project is located in a Transit Priority Area or within a ½-mile of a Major Transit Corridor or Stop[11] and satisfies the following:
   - Has a Floor Area Ratio (FAR) of more than 0.75.
   - Includes less parking for use by residents, customers, or employees of the project than other typical nearby uses, or less than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site); and
   - Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the MTC).

According to the City of Oakland Transportation Impact Review Guidelines, warehouse use is classified as a production, distribution, and repair (PDR) use, and it should be screened by comparing the VMT per worker in the TAZ to the regional average minus 15 percent. Furthermore, although the project would be a warehouse and expected to generate a large number of truck trips, the VMT assessment for the project only includes the VMT generated by passenger vehicles and does not include the VMT generated by trucks, consistent with SB 743 requirements.[12]

The proposed project would not satisfy any of the screening criteria as described below.

- *Criterion #1: Small Projects*. As shown in Table 4.3-2, the project would generate more than 100 vehicle trips per day and therefore does not meet Criterion #1.
- *Criterion #2: Low-VMT Area*. Table 4.3-3 shows the estimated 2020 and 2040 VMT per worker for TAZ 896, the TAZ in which the project is located, as well as the applicable VMT thresholds of 15 percent below the regional average. As shown in Table 4.3-3, the 2020 and 2040 estimated average daily VMT per worker in the project TAZ is higher than the regional averages minus 15-percent. Therefore, the project would not meet Criterion #2.

Table 4.3-3 Daily Vehicle Miles Travelled Screening

	Bay Area			
VMT per Worker[a]	**Regional Average**	**Regional Average Minus 15%**	**TAZ 896**	**TAZ Below Regional Average Minus 15%?**
2020	21.8	18.5	25.3	No
2040	20.3	17.3	22.1	No

[a] MTC Model. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=98463b4f73ca43c5944a5c30648fd689, accessed in April 2019.
Source: Fehr & Peers, 2019.

[11] "Major transit stop" is defined in CEQA Section 21064.3 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 of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

[12] CEQA Guidelines, Section 15064.3, subdivision (a).

- *Criterion #3: Near Transit Stations*. The project is located within 0.25 miles of the following AC Transit bus routes: Route 1 along International Boulevard with 8-minute headways during peak periods (which would be replaced by the currently under construction BRT Project in the near future), and Route 45 along Seminary Avenue with 15-minute headways during the peak periods. Although the project is located less than 0.5 miles from intersecting frequent bus service, it would not meet this criterion because it would not satisfy the first and the second of the three conditions for this criterion:
  - The project would have a FAR of 0.53, which is less than 0.75.
  - The project would provide 219 on-site parking spaces, which is more than the minimum of 153 spaces required by the City of Oakland.[13]
  - The project is located in a Priority Development Area (PDA) as defined by Plan Bay Area and is therefore consistent with the region's Sustainable Communities Strategy.

Since the proposed project would not satisfy any of the three screening criteria for VMT impact, a detailed VMT evaluation is required, which is presented in the next subsection.

Detailed VMT Evaluation. The VMT per worker for the project TAZ (TAZ 896) estimated by the MTC Model was used as a starting point to estimate the VMT per worker for the proposed project. TAZ 896 is about 620 acres in size, which is one of larger TAZs in the City of Oakland and extends between International Boulevard and the Bay. The TAZ includes both residential and industrial uses of various densities with varying access to transit service and neighborhood amenities. Considering that the project TAZ covers a large geographic area with different built environment characteristics, it is expected that the proposed project would have a different VMT per worker than the TAZ average estimated by the MTC Model. Thus, the VMT per worker for the TAZ is adjusted using the Alameda County Transportation Commission (CTC) Travel Demand Model.

The travel behavior forecasted by the Alameda CTC Model is based on the same inputs as described above for the MTC Model. However, the Alameda CTC Model provides increased granularity within Alameda County. For example, the MTC Model TAZ where the project is located is represented by five TAZs in the Alameda CTC Model. Thus, the Alameda CTC Model can better account for the project setting and proximity to transit and provide a more refined estimate of travel behavior, including VMT, for the project than the MTC Model. The VMT per worker for the project was estimated by running the Alameda CTC Model with and without the project and comparing the results to the VMT per worker estimated by the MTC Model.

It is estimated that the proposed project would have about 37 percent less VMT per worker than the project TAZ in the MTC Model. As shown in Table 4.3-4, the estimated VMT per worker for

[13] City of Oakland Planning Code (updated June 5, 2019), Section 17.116.090 requires a minimum of one parking space per 3,500 square feet of floor area for industrial activities. Since the office component of the project is an accessory part of the warehouse, the parking requirement for industrial use applies to the whole project.

the proposed project would be below the significance threshold (regional average minus 15 percent) by about 14 percent in 2020 and 20 percent in 2040. Thus, the project would not have a significant impact on VMT. The access variant would have a similar VMT per worker as the project because the project size and access for workers would remain the same. The VMT per worker estimate does not account for the TDM Plan for the project (required by City SCA-TRA-5: Transportation and Parking Demand Management (#79) and provided in Appendix E), which is estimated to reduce the project generated VMT by at least another 10 percent.

Overall, both the project and access variant would not have a significant impact on VMT. This is a less-than-significant impact; no mitigation measures are required.

Table 4.3-4 Project VMT per Worker Estimates

Metric	2020 (%)	2040 (%)
Threshold (Regional Average minus 15%)[a]	18.5	17.3
Project TAZ[a]	25.3	22.1
Project Site[b]	15.9	13.9
Significant Impact?	No	No

[a] See Table 4.3-3.
[b] The project site VMT estimate is 37 percent less than the entire VMT estimate for the MTC Model TAZ, based on the Alameda CTC Model.
Source: Fehr & Peers, 2019.

b. Consistency with Plans, Ordinances, or Policies Relating to Safety, or Performance of the Circulation System. The project is consistent with applicable plans, ordinances, and policies, and would not cause a significant impact by conflicting with adopted plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadways, bicycle lanes, and pedestrian paths (except for automobile level of service or other measures of vehicle delay).

The 1998 LUTE, as well as the City's Public Transit and Alternative Mode and Complete Streets policies, states a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The proposed project would encourage the use of non-automobile transportation modes by providing employment along International Boulevard, and within walking distance of residential uses and neighborhood services. In addition, BRT service is currently under construction along International Boulevard, which will improve transit connectivity for the proposed project.

In coordination with the BRT Project, the proposed project would modify the new traffic signal on International Boulevard at 55th Avenue in order to accommodate left-turns for both passenger vehicles and trucks into and out of the proposed project driveway opposite 55th Avenue. The proposed signal would result in loss of on-street parking on the east side of International Boulevard along the project frontage in order to accommodate a left-turn lane into the project

site. Modifying the new signal would not interfere with BRT operations along the corridor since all signals along International Boulevard would be coordinated and timed for bus operations. In addition, trucks would be able to turn into and out of the project driveways on International Boulevard without interfering with bus operations along the corridor.

The project is consistent with both the City's 2017 Pedestrian Master Plan and 2019 Bike Plan as it would not make major modifications to existing pedestrian or bicycle facilities in the surrounding areas and would not adversely affect installation of future facilities. Sixteen bike parking spaces would be installed on the site as part of the project.

The proposed project would generate a large number of truck trips. All trucks would use International Boulevard, which is consistent with the current designation of International Boulevard as a State route and a truck route.

The San Leandro Street access variant would add a truck-only driveway on the northwest corner of the site with access to and from 54th Avenue. This analysis conservatively assumes that all heavy truck trips generated by the project would use this driveway to access San Leandro Street, a designated truck route, and bypass International Boulevard. Currently, trucks are prohibited from using 54th Avenue between International Boulevard and San Leandro Street. Thus, the introduction of this driveway would require allowing trucks to use the short segment of 54th Avenue between the driveway and San Leandro Street. The access variant would be consistent with the truck prohibition on 54th Avenue because the intent of the truck prohibition on 54th Avenue is to keep trucks out of the adjacent residential areas; there are no residential uses on 54th Avenue between the driveway and San Leandro Street, and trucks would continue to be prohibited on 54th Avenue east of the driveway.

The Union Pacific Railroad Company (UP) owns and operates the railroad tracks adjacent to the west side of the project site, which at one time served the local industrial uses. The tracks are not currently in use and may be abandoned in the future. In the project vicinity, there is one at-grade crossings on 54th Avenue, just east of San Leandro Street. Since the access variant would increase truck traffic at the at-grade crossing on 54th Avenue, and the railroad tracks may be used in the future, the City of Oakland SCA-TRA-7: Railroad Crossings (#82) requires the preparation of a Diagnostic Review to ensure safety at the at-grade crossing.

Overall, both the project and access variant would not conflict with adopted plans, ordinances, or policies addressing the safety and performance of the circulation system. This is a less-than-significant impact; no mitigation measures are required.

c. Induced Travel. The proposed project would not induce additional automobile travel by increasing physical street capacity in congested areas.

The only roadway network modification proposed by the project is modifications to the already under construction traffic signal on International Boulevard at 55th Avenue in order to provide

left-turn access for the project. The roadway network modification proposed by the access variant would add a new truck-only driveway on 54th Avenue adjacent to the railroad tracks to facilitate truck trips to and from San Leandro Street. These modifications would not increase the capacity of the roadway network. The project or the access variant would not make any other modifications the roadway network surrounding the project site. Therefore, the project or the access variant would not increase the physical roadway capacity and would not add new roadways to the network and would not induce additional automobile traffic. This is a less-than-significant impact; no mitigation measures are required.

d. Cumulative Impacts. As shown in Table 4.3-4, the project-generated VMT per worker in 2040 would be below the established threshold, and would also be a less-than-significant impact under cumulative conditions. No mitigation measures are required.

4.4 AIR QUALITY

This section describes the existing air quality conditions of the project site; discusses the regulations and policies pertinent to air quality; and assesses the potentially significant impacts related to air quality that could result from implementation of the proposed project and the San Leandro Street access variant (access variant), as well as associated Standard Conditions of Approval (SCAs) and mitigation measures to address identified impacts. The potential impacts assessed include increases in criteria air pollutant and toxic air contaminant (TAC) emissions that could result from the proposed project and the access variant. The analysis in this section was prepared in accordance with the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (CEQA Guidelines).[1]

A. Setting

1. Environmental Setting

The project site is located within the San Francisco Bay Area Air Basin (SFBAAB). Some air basins have natural characteristics that limit the ability of natural processes to either dilute or transport air pollutants. The major determinants of air pollution transport and dilution are climatic and topographic factors such as wind, atmospheric stability, terrain that influences air movement, and sunshine. Wind and terrain can combine to transport pollutants away from upwind areas, while solar energy can chemically transform pollutants in the air to create secondary photochemical pollutants such as ozone. The following discussion provides an overview of the environmental setting with regard to air quality in the SFBAAB.

a. Regional Climate, Meteorology, and Topography. The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During the summer, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

Oakland is within a climatological subregion that stretches from Richmond to San Leandro. The western boundary of this subregion is defined by the San Francisco Bay and the eastern boundary by the Oakland-Berkeley Hills. The Oakland-Berkeley Hills have a ridge-line height of approximately 1,500 feet, which creates a significant barrier to air flow in the Bay Area. The

[1] Bay Area Air Quality Management District (BAAQMD), 2017a. California Environmental Quality Act Air Quality Guidelines, May.

prevailing wind direction is from the west.[2] Average summer temperatures range from about 55 to 75 degrees Fahrenheit (°F), and average winter temperatures range from about 45°F to 55°F.

b. Air Pollutants of Concern. The California Air Resources Board (CARB) and U.S. Environmental Protection Agency (EPA) focus on the following air pollutants as regional indicators of ambient air quality:

- Ozone
- Suspended particulate matter—both respirable (PM_{10}) and fine ($PM_{2.5}$)
- Nitrogen dioxide (NO_2)
- Carbon monoxide (CO)
- Sulfur dioxide (SO_2)
- Lead

Because these are the most prevalent air pollutants known to be harmful to human health, based on extensive criteria documents, they are referred to as "criteria air pollutants." In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen (NO_x) and reactive organic gases (ROG), PM_{10}, and $PM_{2.5}$. The BAAQMD operates a network of air monitoring stations throughout the SFBAAB to monitor air pollutants such as ozone, PM_{10}, and $PM_{2.5}$. Table 4.4-1 presents a five-year summary for the period 2013 to 2017 of the highest annual concentrations of ozone and $PM_{2.5}$, collected at the Oakland West monitoring station located at 1100 21st Street, in Oakland, which is the closest monitoring station to the project site. The nearest station where PM_{10} levels are measured is the Concord station at 2975 Treat Boulevard in Concord. Table 4.4-1 also compares measured pollutant concentrations with applicable State and federal ambient air quality standards, which are discussed further under the regulatory subsection below.

In addition to criteria air pollutants, local emissions of TACs, such as diesel particulate matter (DPM), are a concern for nearby receptors. These primary air pollutants of concern are discussed further below.

Ozone. While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing ultraviolet radiation, it can be harmful to the human respiratory system and to sensitive species of plants when it reaches elevated concentrations in the lower atmosphere. Ozone is not emitted directly into the environment, but is formed in the atmosphere by complex chemical reactions between ROG and NO_x in the presence of sunlight. Ozone formation is greatest during periods of little or no wind, bright sunshine, and high temperatures. As a result, levels of ozone usually build up during the day and peak in the afternoon.

[2] Bay Area Air Quality Management District (BAAQMD), 2000. BAAQMD Meteorological Data; Oakland STP, Station No. 1804.

Table 4.4-1 Air Quality Standards and Attainment Status

Pollutant	Standard	2013	2014	2015	2016	2017
Ozone (O_3)	Max 1-hour Concentration (ppm)	0.071	0.072	0.091	0.065	0.087
	Days > CAAQS (0.09 ppm)	0	0	0	0	0
	Max 8-hour Concentration (ppm)	0.06	0.0528	0.065	0.053	0.069
	Days > CAAQS (0.070 ppm)	0	0	0	0	0
	Days > NAAQS (0.070 ppm)	0	0	0	0	0
Particulate Matter (PM_{10})	Max 24-hour Concentration ($\mu g/m^3$)	50.5	42.5	24	19	41.2
	Days > CAAQS (50 $\mu g/m^3$)	NV	0	0	0	NV
	Days > NAAQS (150 $\mu g/m^3$)	0	0	0	0	NV
	Annual Arithmetic Mean ($\mu g/m^3$)	8.3	14.1	13.1	11.5	6.5
Particulate Matter ($PM_{2.5}$)	Max 24-hour Concentration ($\mu g/m^3$)	42.7	38.8	38.7	23.9	56
	Days > NAAQS (35 $\mu g/m^3$)	3	1	4	0	8
	Annual Arithmetic Mean ($\mu g/m^3$)	12.8	9.5	10.2	8.7	12.9

Notes: CAAQS = California ambient air quality standards; $\mu g/m^3$ = micrograms per cubic meter; NAAQS = National ambient air quality standards; ppm = parts per million; NV = no value due to insufficient data. State statistics are based on California-approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. When the measured state and national concentrations varied due to different sample methods, the highest concentration was reported in the summary table.
Source: California Air Resources Board (CARB), 2019. iADAM: Air Quality Data Statistics; Trend Summaries. Available at: https://www.arb.ca.gov/adam/trends/trends1.php, accessed April 10, 2019.

Anthropogenic sources of ROG and NO_x include vehicle tailpipe emissions and evaporation of solvents, paints, and fuels. Automobiles are the single largest source of ozone precursors in the SFBAAB. Short-term ozone exposure can reduce lung function in children, exacerbate respiratory infections, and produce symptoms of respiratory distress. Long-term exposure can impair lung defense mechanisms and lead to emphysema and chronic bronchitis. Ozone can also damage plants and trees and materials such as rubber and fabrics.

Particulate Matter. PM_{10} and $PM_{2.5}$ consist of extremely small, suspended particles or droplets that are 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen, forest fires, and windblown dust, are naturally occurring. In populated areas, however, most particulate matter is caused by road dust, combustion products, abrasion of tires and brakes, and construction activities. Particulate matter can also be formed in the atmosphere by condensation of SO_2 and ROG. Particulate matter exposure can affect breathing, aggravate existing respiratory and cardiovascular disease, alter the body's defense systems against foreign materials, and damage lung tissue, contributing to cancer and premature death. Individuals with chronic obstructive pulmonary or cardiovascular disease, asthmatics, the elderly, and children are most sensitive to the effects of particulate matter.

Toxic Air Contaminants. TACs include a diverse group of air pollutants that can adversely affect human health. Unlike criteria air pollutants, which generally affect regional air quality, TAC emissions are evaluated based on estimations of localized concentrations and risk assessments. The adverse health effects a person may experience following exposure to any chemical depends on several factors, including the amount (dose), duration, chemical form, and any simultaneous exposure to other chemicals.

For risk assessment purposes, TACs are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per 1 million exposed individuals over a lifetime of exposure. Non-carcinogenic substances are generally assumed to have a safe threshold below which health impacts would not occur. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the sum of expected exposure levels divided by the corresponding acceptable exposure levels. In the SFBAAB, adverse air quality impacts on public health from TACs are predominantly from diesel particulate matter (DPM).

DPM and $PM_{2.5}$ from diesel-powered engines are a complex mixture of soot, ash particulates, metallic abrasion particles, volatile organic compounds, and other components that can contribute to a range of health problems. In 1998, the CARB identified DPM from diesel-powered engines as a TAC based on its potential to cause cancer and other adverse health effects.[3]

While diesel exhaust is a complex mixture that includes hundreds of individual constituents, under California regulatory guidelines, DPM is used as a surrogate measure of exposure for the mixture of chemicals that make up diesel exhaust as a whole. More than 90 percent of DPM is less than 1 micron in diameter, and thus is a subset of $PM_{2.5}$.[4] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

c. Existing Sources and Levels of Local Air Pollution. In the Bay Area, stationary and mobile sources are the primary contributors of TACs and $PM_{2.5}$ emissions to local air pollution. In an effort to promote healthy infill development from an air quality perspective, the BAAQMD has prepared guidance entitled Planning Healthy Places.[5] The purpose of this guidance document is to encourage local governments to address and minimize potential local air pollution issues early in the land-use planning process, and to provide technical tools to assist them in doing so. Based on a screening-level cumulative analysis of mobile and stationary

[3] California Air Resources Board (CARB), 1998. Initial Statement of Reasons for Rulemaking; Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, June.

[4] California Air Resources Board (CARB), 2016. Overview: Diesel Exhaust and Health. Available at: https://www.arb.ca.gov/research/diesel/diesel-health.htm, accessed January 13, 2017. Last updated April 12, 2016.

[5] Bay Area Air Quality Management District (BAAQMD), 2016. Planning Healthy Places; A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning, May.

sources in the Bay Area, the BAAQMD mapped localized areas of elevated air pollution that exceed an excess cancer risk of 100 in a million or $PM_{2.5}$ concentrations of 0.8 micrograms per cubic meter, or are within 500 feet of a freeway, 175 feet of a major roadway (>30,000 annual average daily vehicle trips), or 500 feet of a ferry terminal. As shown on Figure 4.4-1, elevated levels of $PM_{2.5}$ and/or TAC pollution in the project vicinity are primarily from a stationary source adjacent to and northeast of the project site and mobile emissions along International Boulevard and San Leandro Street.

d. Existing Sensitive Receptors. Sensitive receptors are individuals who are more susceptible to air-quality-related health problems compared to other members of the public, such as the very young, the old, and the infirm. Sensitive land uses are places where sensitive receptors are most likely to spend their time, such as schools, convalescent homes, and hospitals. Residential areas are also considered sensitive to poor air quality because people are often at home for extended periods, thereby increasing the duration of exposure to potential air contaminants. Existing sensitive land uses near the project site include single-family homes located adjacent to the northwestern border of the project site and located approximately 100 feet northeast of the project site across International Boulevard.

e. Odors. Other air quality issues of concern in the SFBAAB include nuisance impacts from odors; objectionable odors may be associated with a variety of pollutants. According to the BAAQMD, the following odor sources are of particular concern: wastewater treatment plants, oil refineries, asphalt plants, chemical manufacturing, painting/coating operations, coffee roasters, food processing facilities, recycling operations and metal smelters. All of these odor sources are present within the City of Oakland. According to the City of Oakland's Housing Element EIR,[6] chemical manufacturing is the predominant source of odors in the vicinity of the project site.

2. Regulatory Setting

a. Federal, State, and Regional Regulations. The USEPA is responsible for implementing the programs established under the federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans (SIPs) to attain the NAAQS. A SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a State fails to enforce its SIP-approved regulations, or if the USEPA determines that a State's SIP is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given SIP.

[6] City of Oakland, 2010. 2007-2014 Housing Element EIR, Section 3.3, Air Quality, August.

Legend

Area of Elevated TACs and/or PM2.5

Project Site

Figure 4.4-1

Localized Areas of Elevated Air Pollution

0 500 Feet

BASELINE ENVIRONMENTAL CONSULTING

GE Site Remediation and Redevelopment Project EIR

Sources: Google Map, Baseline Environmental Consulting, 2019.

P:\Base\18218-00 Bridge GE EIR\Products\Draft EIR\Admin 3\Figures\Figure CDR\Figure 4.4-1.cdr 10/29/19

The CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California SIP, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by the CARB, and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts.

The CAAQS and NAAQS, which were developed for criteria air pollutants, are intended to incorporate an adequate margin of safety to protect the public health and welfare. California also has ambient air quality standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. To achieve CAAQSs, criteria air pollutant emissions are managed through control measures described in regional air quality plans as well as emission limitations placed on permitted stationary sources.

In accordance with the federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance, or nonattainment of the NAAQS and CAAQS for each criteria air pollutant. To assess the regional attainment status, the BAAQMD collects ambient air quality data from over 30 monitoring sites within the SFBAAB. Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, PM_{10}, and $PM_{2.5}$, and is designated an attainment or unclassified area for all other pollutants (see Table 4.4-2).

Regulation of TACs, referred to as hazardous air pollutants (HAPs) under federal regulations, is achieved through federal, State, and local controls on individual sources. The air toxics provisions of the federal Clean Air Act require the USEPA to identify HAPs that are known or suspected to cause cancer or other serious health effects to protect public health and welfare, and to establish National Emission Standards for Hazardous Air Pollutants. California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act created California's program to identify and reduce exposure to TACs. To date, the CARB has identified over 21 TACs and adopted the USEPA's list of 187 HAPs as TACs.

The Hot Spots Act supplements the Tanner Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

b. Bay Area Air Quality Management District Responsibilities. The BAAQMD is primarily responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. The BAAQMD fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions. The BAAQMD also awards grants to reduce motor vehicle emissions

Table 4.4-2 Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Ambient Air Quality Standards (CAAQS)		National Ambient Air Quality Standards (NAAQS)	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8-Hour	0.070 ppm	N	0.070 ppm	N
	1-Hour	0.09 ppm	N	Revoked in 2005	---
Carbon Monoxide (CO)	8-Hour	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	---	0.053 ppm	A
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm	A	0.14 ppm	A
	1-Hour	0.25 ppm	A	0.075 ppm	A
	Annual	---	---	0.030 ppm	A
Respirable Particulate Matter (PM_{10})	Annual	20 µg/m^3	N	---	---
	24-Hour	50 µg/m^3	N	150 µg/m^3	U
Fine Particulate Matter ($PM_{2.5}$)	Annual	12 µg/m^3	N	12 µg/m^3	U/A
	24-Hour	---	---	35 µg/m^3	N
Sulfates	24-Hour	25 µg/m^3	A	---	---
Lead	30-Day	1.5 µg/m^3	A	---	---
	Calendar Quarter	---	---	1.5 µg/m^3	A
	Rolling 3-Month	---	---	0.15 µg/m^3	A
Hydrogen Sulfide	1-Hour	0.03 ppm	U	---	---
Vinyl Chloride	24-Hour	0.010 ppm	U	---	---
Visibility Reducing Particles	8 Hour (10:00 to 18:00 PST)	---	U	---	---

Notes: A=Attainment; N=Nonattainment; U=Unclassified; "---"=not applicable; ppm=parts per million; µg/m^3=micrograms per cubic meter; PST=Pacific Standard Time.
Source: Bay Area Air Quality Management District (BAAQMD), 2017. Air Quality Standards and Attainment Status. Available at: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status, accessed April 10, 2019. Last updated January 5, 2017.

and conducts public education campaigns and other activities associated with improving air quality within the SFBAAB.

The demolition of existing buildings and structures are subject to BAAQMD's Regulation 11, Rule 2 (Asbestos Demolition, Renovation, and Manufacturing), which limits asbestos emissions from demolition or renovation of structures and the associated disturbance of asbestos-containing waste material generated or handled during these activities. The rule addresses the

national emissions standards for asbestos and contains additional requirements. The rule requires the lead agency and its contractors to notify the BAAQMD of any regulated renovation or demolition activity. The notification must include a description of the affected structures and the methods used to determine the presence of asbestos-containing materials. All asbestos-containing material found on site must be removed prior to demolition or renovation activity in accordance with BAAQMD Regulation 11, Rule 2, which includes specific requirements for surveying, notification, removal, and disposal of materials that contain asbestos. Therefore, projects that comply with Regulation 11, Rule 2, would ensure that asbestos-containing materials would be disposed of appropriately and safely.

The use of odorous compounds are subject to BAAQMD's Regulation 7, which places general limitations on odorous substances and specific emission limitations on certain odorous compounds. The regulation limits the "discharge of any odorous substance which causes the ambient air at or beyond the property line…to be odorous and to remain odorous after dilution with four parts of odor-free air." The BAAQMD must receive odor complaints from 10 or more complainants within a 90-day period in order for the limitations of this regulation to go into effect. If this criterion has been met, an odor violation can be issued by the BAAQMD if a test panel of people can detect an odor in samples collected periodically from the source.

The BAAQMD's CEQA Air Quality Guidelines[7] include thresholds of significance to assist lead agencies in evaluating and mitigating air quality impacts under CEQA. The BAAQMD's thresholds, which have been adopted by the City of Oakland, established levels at which emissions of ozone precursors (ROG and NO_x), PM_{10}, $PM_{2.5}$, local CO, TACs, and odors could cause significant air quality impacts. The scientific soundness of the thresholds is supported by substantial evidence presented in the BAAQMD's Revised Draft Options and Justification Report.[8]

c. Bay Area Clean Air Plan. In accordance with the California Clean Air Act, the BAAQMD is required to prepare and update an air quality plan that outlines measures by which both stationary and mobile sources of pollutants can be controlled to achieve the NAAQS and CAAQS in areas designated as nonattainment. In April 2017, the BAAQMD adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate (2017 CAP), which includes 85 control measures to reduce ROG, NOx, PM_{10}, $PM_{2.5}$, TACs, and greenhouse gases (GHGs).[9] The 2017 CAP was developed based on a multi-pollutant evaluation method that incorporates well-established studies and methods on quantifying the health benefits and air quality regulations, computer modeling and analysis of existing air quality monitoring data and emission inventories,

[7] Bay Area Air Quality Management District (BAAQMD), 2017a. Op. cit.

[8] Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report; California Environmental Quality Act Thresholds of Significance, October.

[9] Bay Area Air Quality Management District (BAAQMD), 2017b. 2017 Clean Air Plan: Spare the Air, Cool the Climate, April 19.

and growth projections prepared by the Metropolitan Transportation Commission and the Association of Bay Area Government.

d. City of Oakland. The following section summarizes relevant air quality policies and standards from the General Plan and Municipal Code.

General Plan. The following air quality policies from the Open Space, Conservation and Recreation Element of the City of Oakland General Plan would relate to the project and the access variant.

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

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

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

- Avoiding earth moving and other major dust generating activities on windy days.
- Sprinkling unpaved construction areas with water during excavation, using reclaimed water where feasible. (Watering can reduce construction-related dust by 50 percent.)
- Covering stockpiled sand, soil, and other particulates with a tarp to avoid blowing dust.
- Covering trucks hauling dirt and debris to reduce spills. If spills do occur, they should be swept up promptly before materials become airborne.

- Preparing a comprehensive dust control program for major construction in populated areas or adjacent to sensitive uses like hospitals and schools.
- Operating construction and earth-moving equipment, including trucks, to minimize exhaust emissions.

City of Oakland Municipal Code. Chapter 15.34 of the Oakland Municipal Code requires new construction projects to submit a Waste Reduction and Recycling Plan to the City's Building Official for review and approval. The intent of the provisions are to divert (e.g., reuse on site) at least 50 percent of construction and demolition debris from landfills. The purpose of these provisions is to prescribe requirements designed to meet and further the goals of the California Integrated Waste Management Act of 1989 AB 939 and the Alameda County Waste Reduction and Recycling Act of 1990 (Measure D). Chapter 15.36 of the Municipal Code requires the implementation of the following dust control measures during demolition activities:

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

Standard Conditions of Approval. The City of Oakland Uniformly Applied Development Standards would be incorporated into the project and the access variant as Standard Conditions of Approval (SCAs). The following SCAs would apply to the proposed project and the access variant.

SCA-AIR-1: Dust Controls – Construction Related (#21)
Requirement: The project applicant shall implement all of the following applicable dust control measures during construction of the project:

a) Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.
b) Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).

c) All visible mud or dirt track-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.
d) Limit vehicle speeds on unpaved roads to 15 miles per hour.
e) All demolition activities (if any) shall be suspended when average wind speeds exceed 20 mph.
f) All trucks and equipment, including tires, shall be washed off prior to leaving the site.
g) Site accesses to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
h) Apply and maintain vegetative ground cover (e.g., hydroseed) or non-toxic soil stabilizers to disturbed areas of soil that will be inactive for more than one month. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).
i) Designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.
j) When working at a site, install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of the site, to minimize wind-blown dust. Windbreaks must have a maximum 50 percent air porosity.
k) Post a publicly visible large on-site sign that includes the contact name and phone number for the project complaint manager responsible for responding to dust complaints and the telephone numbers of the City's Code Enforcement unit and the Bay Area Air Quality Management District. When contacted, the project complaint manager shall respond and take corrective action within 48 hours.
l) All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-AIR-2: Criteria Air Pollutant Controls - Construction Related (#22)
Requirement: The project applicant shall implement all of the following applicable basic control measures for criteria air pollutants during construction of the project as applicable:

a) Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.
b) Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off- Road Diesel Regulations").
c) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Equipment check documentation should be kept at the construction site and be available for review by the City and the Bay Area Air Quality District as needed.
d) Portable equipment shall be powered by grid electricity if available. If electricity is not available, propane or natural gas generators shall be used if feasible. Diesel engines shall only be used if grid electricity is not available and propane or natural gas generators cannot meet the electrical demand.

e) Low VOC (i.e., ROG) coatings shall be used that comply with BAAQMD Regulation 8, Rule 3: Architectural Coatings.
f) All equipment to be used on the construction site shall comply with the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") and upon request by the City (and the Air District if specifically requested), the project applicant shall provide written documentation that fleet requirements have been met.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-AIR-3: Diesel Particulate Matter Controls-Construction Related (#23)
a) Diesel Particulate Matter Reduction Measures

Requirement: The project applicant shall implement appropriate measures during construction to reduce potential health risks to sensitive receptors due to exposure to diesel particulate matter (DPM) from construction emissions. The project applicant shall choose one of the following methods:

i. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with current guidance from the California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment to determine the health risk to sensitive receptors exposed to DPM from project construction emissions. The HRA shall be submitted to the City (and the Air District if specifically requested) for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then DPM reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, DPM reduction measures shall be identified to reduce the health risk to acceptable levels as set forth under subsection b below. Identified DPM reduction measures shall be submitted to the City for review and approval prior to the issuance of building permits and the approved DPM reduction measures shall be implemented during construction.
-or-
ii. All off-road diesel equipment shall be equipped with the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by CARB. The equipment shall be properly maintained and tuned in accordance with manufacturer specifications. This shall be verified through an equipment inventory submittal and Certification Statement that the Contractor agrees to compliance and acknowledges that a significant violation of this requirement shall constitute a material breach of contract.

When Required: Prior to issuance of a construction related permit (i), during construction (ii)
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

b) Construction Emissions Minimization Plan (if required by a above)

Requirement: The project applicant shall prepare a Construction Emissions Minimization Plan (Emissions Plan) for all identified DPM reduction measures (if any). The Emissions Plan shall be submitted to the City (and the Bay Area Air Quality District if specifically requested) for review and approval prior to the issuance of building permits. The Emissions Plan shall include the following:

i. 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.

ii. 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.

When Required: Prior to issuance of a construction related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-AIR-4: Stationary Sources of Air Pollution (Toxic Air Contaminants) (#25)

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

a) The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

- or -

b) The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City:
   i. Installation of non-diesel fueled generators, if feasible, or;
   ii. Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26)

a) Truck Loading Docks

Requirement: The project applicant shall locate proposed truck loading docks as far from nearby sensitive receptors as feasible.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

b) Truck Fleet Emission Standards

Requirement: The project applicant shall comply with all applicable California Air Resources Board (CARB) requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Methods to comply include, but are not limited to, new clean diesel trucks, higher-tier diesel engine trucks with added Particulate Matter (PM) filters, hybrid trucks, alternative energy trucks, or other methods that achieve the applicable CARB emission standard. Compliance with this requirement shall be verified through CARB's Verification Procedures for In-Use Strategies to Control Emissions from Diesel Engines.

When Required: Prior to building permit final; ongoing
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-AIR-6: Asbestos in Structures (#27)
Requirement: The project applicant shall comply with all applicable laws and regulations regarding demolition and renovation of Asbestos Containing Materials (ACM), including but not limited to California Code of Regulations, Title 8; California Business and Professions Code, Division 3; California Health and Safety Code sections 25915-25919.7; and Bay Area Air Quality Management District, Regulation 11, Rule 2, as may be amended. Evidence of compliance shall be submitted to the City upon request.
When Required: Prior to approval of construction-related permit
Initial Approval: Applicable regulatory agency with jurisdiction
Monitoring/Inspection: Applicable regulatory agency with jurisdiction

B. Impacts and Mitigation Measures

This section analyzes environmental impacts related to air quality that could result from implementation of the project and the access variant. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the project and the access variant, and identifies SCAs and/or mitigation measures to address these impacts, as needed.

1. Criteria of Significance

Implementation of the proposed project and the access variant would result in a significant air quality impact if it would:

a. During project construction, result in average daily emissions of 54 pounds per day of ROG, NO_x, or $PM_{2.5}$ or 82 pounds per day of PM_{10}.

b. During project operation, result in average daily emissions of 54 pounds per day of ROG, NOx, or $PM_{2.5}$ or 82 pounds per day of PM_{10}, or result in maximum annual emissions of 10 tons per year of ROG, NO_x, or $PM_{2.5}$ or 15 tons per year of PM_{10}.

c. Contribute to CO concentrations exceeding the CAAQS of 9 parts per million (ppm) averaged over 8 hours or 20 ppm over 1 hour.[10]

d. For new sources of TACs, during either project construction or project operation, expose sensitive receptors to substantial levels of TACs under project conditions resulting in:[11]

[10] Pursuant to BAAQMD CEQA Guidelines, localized CO concentrations should be estimated for projects in which: (a) project-generated traffic would conflict with an applicable congestion management program established by the county congestion management agency; or (b) project-generated traffic would increase traffic volumes at affected intersections to more than 44,000 vehicles per hour (or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited, such as tunnels, parking garages, bridge underpasses, natural or urban street canyons, and below-grade roadways). In Oakland, only the MacArthur Maze portion of Interstate 580 exceeds the 44,000 vehicles per hour screening criteria.

- an increase in cancer risk level greater than 10 in 1 million,
- a non-cancer risk (chronic or acute) hazard index greater than 1.0, or
- an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter;

or, under cumulative conditions, resulting in:

- a cancer risk level greater than 100 in a million,
- a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
- annual average $PM_{2.5}$ of greater than 0.8 micrograms per cubic meter.

e. Expose new sensitive receptors to substantial ambient levels of TACs resulting in:[12]

- a cancer risk level greater than 100 in a million,
- a non-cancer risk (chronic or acute) hazard index greater than 10.0, or
- annual average PM2.5 of greater than 0.8 micrograms per cubic meter.

f. Frequently and for a substantial duration, create or expose sensitive receptors[13] to substantial objectionable odors affecting a substantial number of people.

The criteria above are from the City's CEQA Thresholds of Significance Guidelines, which are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including sections 15064, 15064.4, 15064.5, 15064.7, 15065, 15382, and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist. Note that the California Natural Resources Agency adopted changes to the significance questions for air quality in Appendix G on December 28, 2018. As part of the adopted revisions, one previously used criterion related to violation or a substantial contribution to a violation of an air quality standard was deleted, and the wording of two questions was revised. Other than that, there were no other substantial changes and additions to the Appendix G questions. Because the City's CEQA Thresholds of Significance Guidelines addresses the content and intent of the significance criteria for air quality in Appendix G updated on December 28, 2018 and these criteria are more specific to the City, this EIR evaluates air quality impacts according to the City's CEQA Thresholds of Significance Guidelines.

[11] Pursuant to the BAAQMD CEQA Guidelines, when siting new TAC sources, consider receptors located within 1,000 feet. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers. The cumulative analysis should consider the combined risk from all TAC sources.

[12] Pursuant to the BAAQMD CEQA Guidelines, when siting new sensitive receptors, consider TAC sources located within 1,000 feet, including but not limited to stationary sources, freeways, major roadways (10,000 or greater vehicles per day), truck distribution centers, airports, seaports, ferry terminals, and rail lines. For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

[13] For this threshold, sensitive receptors include residential uses, schools, daycare centers, nursing homes, and medical centers (but not parks).

2. Project Impacts

The following section discusses potential impacts related to air quality associated with implementation of the proposed project and the access variant. For the air quality analysis, the main difference between the proposed project and the access variant would be the location of truck access routes. Therefore, the air quality impact that would be different under the access variant scenario compared to the proposed project would be impacts related to health risks to nearby sensitive receptors from truck emissions. Unless otherwise stated, the following discussions related to air quality impacts are applicable to both the proposed project and the access variant.

Impact AIR-1: Project construction activities, including demolition and remediation, and project operation could generate criteria air pollutant emissions that could affect regional air quality which would be a significant impact. (S)

a. Criteria Air Pollutant Emissions During Construction. The BAAQMD currently recommends using the most recent version of the California Emissions Estimator Model (CalEEMod version 2016.3.2) to estimate construction and operational emissions of criteria air pollutants and precursors for a proposed project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land use projects that can be used if site-specific information is not available. The default data (e.g., emission rates) are supported by substantial evidence provided by regulatory agencies and a combination of statewide and regional surveys of existing land uses. The primary input data used to estimate emissions associated with construction and operation of the proposed project are summarized in Table 4.4-3. A copy of the CalEEMod report for the proposed project, which summarizes the input parameters, assumptions, and findings, is provided in Appendix F.

Table 4.4-3 Proposed Project Land Use Input Parameters for CalEEMod

Project Development	CalEEMod Land-Use Type	Unit	Amount
Warehouse	Unrefrigerated Warehouse – No Rail	1,000 Square Feet	525
Office	General Office Building	1,000 Square Feet	10
Truck Access/Parking Stalls	Other Asphalt Surfaces	Acre	10

Note: A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

Project construction activities would include demolition, remediation, grading, building construction, and paving. The primary pollutant emissions of concern during project construction would be ROG, NO_x, PM_{10}, and $PM_{2.5}$ from the exhaust of off-road construction equipment and on-road vehicles related to worker vehicles, vendor trucks, and haul trucks. In addition, fugitive dust emissions of PM_{10} and $PM_{2.5}$ would be generated by soil disturbance and demolition activities, and fugitive ROG emissions would result from paving and architectural coatings. Emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ during project construction were estimated using the

CalEEMod input parameters summarized in Table 4.4-3 and additional assumptions summarized in Table 4.4-4.

Table 4.4-4 Proposed Project Construction Assumptions for CalEEMod Air Quality Emissions

CalEEMod Input Category	Assumptions and Changes to Default Data
Construction Phase	It was assumed that project construction would begin as early as 2020; this is a conservative assumption because fleet-wide average pollutant emissions from off-road construction equipment are expected to improve over time. As described in Table 3-2, the activities of project construction are presented below and are grouped into six tasks as follows: • Demolition (17 weeks): Activities 1, 2, 8, and 9 in Table 3.2. • Remediation (8 weeks): Activities 3 through 7, 16, and 17 in Table 3.2. • Grading (9 weeks): Activity 10 in Table 3.2. • Building Construction (36 weeks): Activities 11, 13, 14, 15, and 18 in Table 3.2. • Paving (10 weeks): Activity 19 in Table 3.2. • Vapor Intrusion Mitigation System Installation (7 weeks): Activity 12 in Table 3.2.
Construction Equipment	The list of equipment use for each construction task of the project was based on the project-specific equipment described in Table 3-2. The project-specific list of equipment usage and construction phase lengths were used to estimate the total hours of equipment operation (and associated emissions) for the proposed project.
Material Movement	As described in Table 3-1, project remediation would generate about 297 truck haul trips to export soil and project grading would generate about 2,220 trips to import soil. Based on the distance and number of trips to specific disposal locations (e.g., Altamont Landfill and Kettleman Hill Landfill) during remediation, the average travel distance per haul trip (140 miles) was used to estimate the associated mobile emissions. Because the source of fill and construction materials during grading are unknown, the default average travel distance per haul trip (20 miles) was used to estimate the associated mobile emissions.
Demolition	As described in Table 3-1, project demolition would generate about 795 truck haul trips for disposal of demolition debris. Based on the distance and number of trips to specific disposal locations (e.g., Altamont Landfill and Schnitzer Steel) during demolition, the average travel distance per haul trip (19 miles) was used to estimate the associated mobile emissions.

Note: Default CalEEMod data was used for all other parameters not described. A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

To analyze daily emission rates during project construction, the total emissions estimated during construction were averaged over the total work days (87 weeks x 5 work days per week = 435 work days). As shown in Table 4.4-5, the project's estimated emissions for ROG, NO_x, and exhaust PM_{10} and $PM_{2.5}$ during construction were below the applicable thresholds and, therefore, would have a less-than-significant impact on regional air quality. Furthermore, the enhanced controls for criteria air pollutant emissions described under SCA-AIR-2: Criteria Air Pollutant Controls – Construction Related (#22) would not apply to the project.

Table 4.4-5 Estimated Construction Emissions (Pounds per Day)

Emissions Scenario	ROG	NO_x	Exhaust PM_{10}	Exhaust $PM_{2.5}$
Construction Emissions	2.9	37.5	1.2	1.1
Thresholds of Significance	54	54	82	54
Exceed Threshold?	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter, A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

The generation of fugitive dust PM_{10} and $PM_{2.5}$ from soil disturbance and demolition activities could adversely affect local air quality. Neither BAAQMD nor the City has a quantitative threshold of significance for fugitive dust PM_{10} and $PM_{2.5}$ emissions; however, the BAAQMD considers implementation of best management practices (BMPs) to control dust during construction sufficient to reduce potential impacts to a less-than-significant level.

Implementation of the enhanced dust-control measures described under SCA-AIR-1: Dust Controls – Construction Related (#21) would satisfy the BAAQMD's requirement for BMPs during construction. Additional project-specific measures to reduce dust emissions are described below. Because implementation of these dust-control measures would satisfy the BAAQMD's threshold of significance, the impact on local air quality from dust generated during project construction would be less than significant.

b. Criteria Air Pollutant Emissions During Operation. Project operation would generate criteria air pollutant emissions that could potentially affect regional air quality. The primary pollutant emissions of concern during project operation would be ROG, NO_x, and exhaust PM_{10} and $PM_{2.5}$ from mobile sources, energy use, area sources (e.g., consumer products and architectural coatings), and stationary sources. Project emissions were estimated based on occupancy of the project in 2022. Since statewide vehicle emission standards are required to improve over time in accordance with the Pavley (Assembly Bill 1493) and Low-Emission Vehicle regulations (Title 13, California Code of Regulations, and Section 1961.2), estimating emissions for the earliest year of operation provides the maximum expected annual emissions. Emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ during project operation were estimated using the CalEEMod input parameters summarized in Table 4.4-3 and additional assumptions summarized in Table 4.4-6.

Table 4.4-6 Proposed Project Operation Assumptions for CalEEMod

CalEEMod Input Category	Assumptions and Changes to Default Data
Vehicle Trips	Daily trip rates for each type of land use were adjusted according to the project traffic analysis (see Section 4.3, Transportation and Circulation). These trip estimates account for a 23 percent trip reduction based on the City of Oakland Transportation Impact Review Guidelines using census data for urban environments over 1 mile from a BART station. They also include a 10 percent trip reduction for passenger vehicles in accordance with SCA-TRA-5: Transportation and Parking Demand Management (#79).
Fleet Mix	CalEEMod default fleet mix was adjusted according to the project-specific land uses and traffic analysis (see Section 4.3, Transportation and Circulation). It was assumed that the ancillary office portion of the warehouse building would not generate any heavy trucks, buses, or mobile home trips. It was also assumed that about 46% of mobile trips generated by the proposed warehouse would be heavy truck trips and the remaining 54% of mobile trips would be passenger vehicle trips and motorcycle trips.

Note: Default CalEEMod data was used for all other parameters not described. A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

The estimated maximum annual emissions and average daily emissions during the operational phase of the proposed project are compared to the City's thresholds of significance in Table 4.4-7. The estimated emissions for ROG, NO_x, and exhaust PM_{10} and $PM_{2.5}$ during operation were below the thresholds and, therefore, would have a less-than-significant impact on regional air quality.

Table 4.4-7 Estimated Operation Emissions

Emission Sources	ROG		NOx		Exhaust PM_{10}		Exhaust $PM_{2.5}$	
Units	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day
Area	2.41	13.18	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Energy	<0.01	0.03	0.05	0.25	<0.01	0.02	<0.01	0.02
Mobile	0.32	1.74	6.15	33.69	0.02	0.10	0.02	0.10
Total Project Emissions	2.7	15.0	6.2	33.9	<0.1	0.1	<0.1	0.1
Thresholds of Significance	10	54	10	54	15	82	10	54
Exceed Threshold?	No	No	No	No	No	No	No	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; tons/yr = tons per year; lb/day = pounds per day. A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

c. Local Carbon Monoxide Concentrations During Operation. The vehicle trips generated by operation of the proposed project could increase localized CO concentrations (also known as hotspots), which would affect sensitive receptors in the local community. The source of local CO concentrations is often associated with heavy traffic congestion, which most frequently occurs at signalized intersections of high-volume roadways. The City's threshold of significance for local CO concentrations is equivalent to the 1- and 8-hour CAAQS of 20.0 ppm

and 9.0 ppm, respectively, because these represent levels that are protective of public health. As described above, the City recommends using the BAAQMD's screening criteria to evaluate potential impacts related to localized CO concentrations.

The Alameda County Transportation Commission serves as the County Congestion Management Agency. The Alameda County Transportation Commission updates the County's Congestion Management Program (CMP) every two years to assess, monitor, and improve the performance of the County's multimodal transportation system and strengthen the integration of transportation and land use planning. The current CMP requires an analysis of any project that is expected to generate more than 100 PM peak hour vehicle trips.[14] During weekdays, the project is expected to generate a maximum of 92 PM peak hour vehicle trips. Because the project would not generate more than 100 PM peak hour trips, the proposed project is consistent with the current CMP.

The project would increase existing traffic volumes up to about 1,400 vehicles per hour at nearby intersections along International Boulevard and San Leandro Street with the access variant. This number is well below the BAAQMD's screening criteria of 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Because the project would comply with (and would not exceed) the BAAQMD's screening criteria, local CO concentrations associated with operation of the project would have a less-than-significant impact on nearby sensitive receptors.

d. New Sources of Toxic Air Contaminants. The proposed project could potentially generate the following TAC emissions that are discussed below:

- Contaminated dust and vapor emissions during project demolition and earthwork activities;
- Exhaust emissions of DPM and $PM_{2.5}$ from off-road diesel equipment during project construction;
- Exhaust emissions of DPM and $PM_{2.5}$ from testing and maintenance of an emergency generator during project operations;
- Exhaust emissions of DPM and $PM_{2.5}$ from trucks during project operations; and
- Emissions of Volatile Organic Compounds (VOCs) and PCBs during project construction and operations.

The emissions of TACs during project construction and operation could pose a health risk to nearby sensitive receptors. The BAAQMD recommends evaluating the potential health risks to sensitive receptors within 1,000 feet of a proposed project that could be exposed to TACs.

[14] Alameda County Transportation Commission (ACTC), 2017. Congestion Management Program, December.

Contaminated Dust and Vapor Emissions During Construction. As described in Section 4.2, Hazards and Hazardous Materials, past transformer manufacturing and electrical equipment maintenance and repair operations at the project site resulted in releases of hazardous materials including polychlorinated biphenyls (PCBs), petroleum hydrocarbons, and VOCs that have impacted the project site. Structures on the project site also contain hazardous building materials including asbestos-containing materials (ACMs) and paints containing heavy metals (e.g., lead, zinc, chromium, cadmium, and mercury) and PCBs. The disturbance of soil and demolition of structures on the project site could potentially generate dust emissions containing TACs, such as asbestos or PCBs, if the hazardous materials currently present in soil and buildings at the project site are not properly managed and disposed.

The BAAQMD's Regulation 11, Rule 2 includes specific requirements for surveying, removing, and disposing of materials that contain asbestos prior to demolition. The City's SCA-AIR-6: Asbestos in Structures (#27) requires the project to comply with all applicable laws and regulations regarding demolition of existing structures that could contain asbestos materials and to provide evidence of compliance to the City upon request. Furthermore, the project must comply with SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), which requires a comprehensive building materials assessment to document the presence of ACMs, lead-based paint, PCBs, and any other hazardous materials at the project site, and would require the stabilization and/or removal of the identified hazardous materials in accordance with recommendations from a qualified environmental professional to comply with all applicable laws and regulations.

In October 2019, an RDIP Addendum[15] (included in Appendix C of this EIR) was prepared for the project site which includes measures for the management and/or removal of hazardous materials prior to and during construction activities to prevent the exposure of off-site residents to hazardous materials. These measures, which are described in greater detail in Section 4.2 Hazards and Hazardous Materials, include requirements for decontamination, dust control, odor and vapor control, and air monitoring during and after construction.

The RDIP Addendum includes a Dust Control Plan (see Appendix J of the RDIP Addendum) and a Perimeter Air Monitoring Plan (AMP) (see Appendix K of the RDIP Addendum). The Dust Control Plan requires that dust-generating activities (e.g., demolition and excavation) in areas where soil or building materials contain PCBs exceeding 1,000 milligrams per kilogram be performed within an enclosure. Other recommended dust-control measures in the Dust Control Plan are generally consistent with or more conservative than the City's dust-control measures required under SCA-AIR-1: Dust Controls – Construction Related (#21).The AMP would be implemented during demolition, concrete crushing, cap removal, and all other excavation/soil handling activities (except for those that would be performed within an enclosure) and during

[15] EKI Environment and Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California, August 26, revised October 4.

remediation and construction activities until the ground surface is temporarily capped at the project site. The AMP includes action levels developed for airborne concentrations of dust, volatile organic compounds, and other potential contaminants of concern based on regulatory ambient air quality standards and available regulatory guidance. Specifically, action levels are developed to ensure the total cancer risk from contaminated dust and vapor emissions not to exceed 1 in a million, and the total chronic hazard index (HI) not to exceed 1.0, in accordance with the target risk thresholds established by the USEPA.[16] If air monitoring action levels are exceeded, contingency dust-control measures would be implemented by the contractor which would consist of increasing the magnitude and frequency of dust control measures, constructing a temporary cap in problem areas, and/or addition of dust palliative or surfactant to dust control water. These dust control measures are discussed in more detail in Section 4.2, Hazards and Hazardous Materials, under the summary for the AMP.

While implementation of recommended measures from the RDIP Addendum would greatly reduce the likelihood that off-site receptors would be exposed to dust emissions containing TACs during demolition, soil handling, and redevelopment activities, it is possible that dust emissions could exceed action levels after work hours when active dust control and air monitoring activities would be discontinued (see discussion of the accidental release of hazardous materials during the construction period in Section 4.2, Hazards and Hazardous Materials). Implementation of Mitigation Measure HAZ-1 would require installation of a temporary cap of recycled crushed concrete or imported aggregate base material as soon as possible following the completion of grading activities on the project site. Additionally, if public complaints are made regarding excessive dust emissions after working hours, Mitigation Measure HAZ-1 would also require that real time dust monitoring be performed 24 hours a day, 7 days a week, to ensure that dust control actions are promptly taken in the event of excessive dust emissions outside of working hours. Implementation of Mitigation Measure HAZ-1, as required by Mitigation Measure AIR-1, would ensure that potential air quality impacts related to contaminated dust and vapor emissions during demolition, soil handling, and redevelopment activities would be less than significant.

Mitigation Measure AIR-1: Implement Mitigation Measures HAZ-1. (LTS)

Compliance with SCA-AIR-1: Dust Controls – Construction Related (#21), SCA-AIR-6: Asbestos in Structures (#27) and SCA-HAZ-2: Hazardous Building Materials and Site Contamination (#44), implementation of the RDIP Addendum (including the protective measures discussed above) with oversight from the Department of Toxic Substances Control (DTSC) and USEPA, and implementation of Mitigation Measures AIR-1 would ensure that excess health risks from contaminated dust and vapor emissions during construction would be below the USEPA's target risk thresholds described above, which are more stringent than the City's thresholds of significance. Therefore, dust- and vapor-generating activities during project demolition, soil

[16] U.S. Environmental Protection Agency (USEPA), 2019. Regional Screening Levels – Generic Tables, May.

handling, and redevelopment activities would have a less-than-significant impact on nearby sensitive receptors.

Off-Road Equipment Exhaust During Construction. The annual average concentrations of DPM and exhaust $PM_{2.5}$ during construction were estimated within 1,000 feet of the project using the USEPA's Industrial Source Complex Short Term (ISCST3) air dispersion model. For this analysis, emissions of exhaust PM_{10} were used as a surrogate for DPM, which is a conservative assumption because more than 90 percent of DPM is less than 1 micron in diameter. The input parameters and assumptions used for estimating emission rates of DPM and $PM_{2.5}$ from off-road diesel construction equipment are included in Appendix F.

The exhaust from off-road equipment was represented in the ISCST3 model as a series of volume sources with a release height of 5 meters to represent the mid-range of the expected plume rise from frequently used construction equipment. Dispersion of air pollutants from off-road construction equipment was modeled using the χ/Q ("chi over q") method, such that each source has a unit emission rate (e.g., 1 gram per second for volume sources). The annual average concentration profiles from the air dispersion model were then scaled according to the ratio between the unit emission rate and the actual emission rate from each source. Actual emission rates for off-road equipment were based on the actual hours of work and averaged over the entire duration of construction. Daily emissions from construction were assumed to occur over a typical 8-hour period between 9:00 a.m. and 5:00 p.m. Monday through Friday.

A uniform grid of receptors spaced 20 meters apart with receptor heights of 1.8 meter (for ground-level receptors) was placed around the project site as a means of developing isopleths (i.e., concentration contours) that illustrate the dispersion pattern from the emissions sources. The ISCST3 model input parameters included 1 year of BAAQMD meteorological data from the Chabot weather station located about 6.5 miles southeast of the project site.

The air dispersion model was used to estimate annual average concentrations of DPM and exhaust $PM_{2.5}$ from off-road equipment during project construction. Based on the results of the air dispersion model (Appendix F) potential health risks were evaluated for the maximally exposed individual resident (MEIR) on the ground floor of a single-family home adjacent to the northwest side of the project site, shown in Figure 4.4-2. The annual average concentrations of DPM and exhaust $PM_{2.5}$ at the MEIR were about 0.049 and 0.045 micrograms per cubic meter at the MEIR, respectively.

Legend

- Project Site
- Modeled Truck Circulation for Project
- Modeled Truck Circulation for Access Variant
- Project MEIR
- 1,000-Foot Buffer around Project MEIR
- Access Variant MEIR
- 1,000-Foot Buffer around Access Variant MEIR
- Existing Stationary Sources

Figure 4.4-2
Cumulative Toxic Air Contaminants (TAC) Sources

0 446 Feet

In accordance with guidance from the BAAQMD[17] and the Office of Environmental Health Hazard Assessment (OEHHA),[18] a health risk assessment was conducted to calculate the incremental increase in cancer risk and chronic (HI to sensitive receptors from DPM emissions during construction. Analysis of acute non-cancer health hazards from construction activity is not recommended by BAAQMD, nor has a reference exposure level been approved by OEHHA and CARB. The annual average concentration of DPM at the MEIR was used to conservatively assess potential health risks to nearby sensitive receptors.

It was conservatively assumed that the MEIR would be exposed to an annual average DPM concentration over the entire estimated duration of construction, which is about 1.7 years (87 weeks). At the MEIR location, the incremental increase in cancer risk from on-site DPM emissions during construction was assessed for a young child exposed to DPM starting from infancy in the third trimester of pregnancy. This exposure scenario represents the most sensitive individual who could be exposed to adverse air quality conditions in the vicinity of the project site. The input parameters and results of the health risk assessment are included in Appendix F.

Estimates of the health risks at the MEIR from exposure to DPM and exhaust $PM_{2.5}$ concentrations from off-road equipment during project construction are summarized and compared to the thresholds of significance in Table 4.4-8. The estimated excess cancer risk and chronic HI for DPM and annual average $PM_{2.5}$ concentration from the exhaust of off-road construction equipment were below the thresholds of significance. Therefore, emissions of DPM and $PM_{2.5}$ from off-road construction equipment would have a less-than-significant impact on nearby sensitive receptors. The additional control measures to reduce DPM emissions described under SCA-AIR-3: Diesel Particulate Matter Controls-Construction Related (#23) would not apply to the project.

Table 4.4-8 Health Risks at Maximally Exposed Individual Resident from Off-Road Construction Equipment

	Diesel Particulate Matter		Exhaust $PM_{2.5}$
Sensitive Receptor	Cancer Risk (per million)	Chronic Hazard Index	Annual Average Concentration ($\mu g/m^3$)
Maximally Exposed Individual Resident	8.2	0.01	0.03
Thresholds of Significance	10	1	0.3
Exceed Threshold?	No	No	No

Note: $\mu g/m^3$ = micrograms per cubic meter. See Appendix F.
Source: Baseline Environmental Consulting, 2019.

[17] Bay Area Air Quality Management District (BAAQMD), 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards, May.

[18] Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February.

Truck Exhaust During Operation. Emissions of DPM and $PM_{2.5}$ from trucks accessing and idling at the proposed loading docks on the project site could pose a health risk to nearby sensitive receptors.

Daily operations of trucks were assumed to occur over a typical 8-hour period between 9:00 a.m. and 5:00 p.m. Monday through Friday. Emissions from on-road diesel trucks during operation were modeled as line-area sources with a release height of 3 meters in the ISCST3 model along the circulation routes within the project site and nearby roadways. The modeled roadways included International Boulevard under the proposed project, and San Leandro Street under the access variant, shown in Figure 4.4-2.

Emission factors for running and idling emissions were derived from CARB's Emission FACtors Model (EMFAC2017), which accounts for the CARB's on-road diesel fleet rules, Pavley Clean Car Standards, and the Low Carbon Fuel Standard. All trucks assessing the project site were assumed to be diesel powered. An air dispersion model similar to that of off-road construction was set up for the proposed project and the access variant. Details of calculations are included in Appendix F.

Based on the results of the air dispersion model (Appendix F), potential health risks were evaluated for the MEIR for the proposed project, on the ground floor of a single-family home adjacent to the northwest side of the project site; and the MEIR for the project and access variant, on the ground floor of a single-family home adjacent to the west corner of the project site. The MEIR locations for the project and the access variant are shown in Figure 4.4-2. It was conservatively assumed that the two MEIRs under the proposed project and under the access variant would be exposed to an annual average DPM concentration for 30 years, which is consistent with OEHHA's guidance for evaluating cancer risk at the MEIR. Other parameters for the health risks calculation are similar to those used for the construction MEIR, and are included in Appendix F.

Estimates of the health risks at the MEIRs from exposure to DPM and exhaust $PM_{2.5}$ concentrations from trucks accessing the project site during operation are summarized and compared to the thresholds of significance in Table 4.4-9. The estimated excess cancer risk, the chronic HI for DPM and annual average $PM_{2.5}$ concentration from the diesel trucks during project operation were below the thresholds of significance. Furthermore, in accordance with SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#79), the truck loading docks will be located on the southeast side of the proposed warehouse building, furthest away from the sensitive receptors to the northwest of the project site. SCA-AIR-5 also requires the project applicant to comply with all applicable CARB requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Compliance with SCA-AIR-5 would ensure that DPM and $PM_{2.5}$ emissions generated at the project's truck loading docks would have a less-than-significant impact on nearby sensitive receptors.

Table 4.4-9 Health Risks at Maximally Exposed Individual Residents from Diesel Trucks during Project and Access Variant Operation

Sensitive Receptor	Diesel Particulate Matter		Exhaust $PM_{2.5}$
	Cancer Risk (per million)	Chronic Hazard Index	Annual Average Concentration ($\mu g/m^3$)
Maximally Exposed Individual Resident for the Proposed Project	0.26	<0.01	<0.01
Maximally Exposed Individual Resident for the Access Variant	5.37	<0.01	<0.01
Thresholds of Significance	10	1	0.3
Exceed Threshold?	No	No	No

Note: $\mu g/m^3$ = micrograms per cubic meter. See Appendix F.
Source: Baseline Environmental Consulting, 2019.

Emissions of VOCs from Subsurface Contamination During Operation. As described in Section 4.2, Hazards and Hazardous Materials, VOCs that may contain TACs, such as trichloroethylene and other chlorinated VOCs, would continue to be emitted from the proposed relocated Groundwater Extraction and Treatment System (GETS) and Vapor Intrusion Mitigation System (VIMS) during operation of the project. Operation of the relocated GETS and VIMS would be subject to BAAQMD permitting requirements for soil vapor extraction operations (BAAQMD Regulation 8 Rule 47). As indicated in the most recent monitoring report for the existing GETS,[19] the VOC vapor monitoring results for the exhaust from the vapor-phase activated carbon treatment system of the GETS were 0 ppm between October 2017 and March 2018 (which is the most recent monitoring data available).

The VIMS would include an active sub-slab ventilation system and VOC emissions from the ventilation risers would be evaluated and monitored under DTSC oversight to ensure that the emissions would not present a significant exposure risks for nearby receptors. Additionally, the VIMS exhaust system would require permitting from BAAQMD and may require emission controls (e.g., activated carbon) prior to the discharge of the VIMS exhaust to the atmosphere. Monitoring of the VIMS under DTSC oversight and compliance with BAAQMD permit requirements would ensure that VOC emissions from the VIMS would have a less-than-significant impact on nearby receptors. Additionally, the review of the proposed VIMS design and oversight of indoor air sampling and operation of the VIMS by the DTSC would ensure that receptors on the project site would not be exposed to TACs in indoor air as a result of vapor intrusion.

[19] Wood Environment and Infrastructure Solutions, Inc., 2018. Semiannual Monitoring Report, October 2017 through March 2018 and Annual Report, July.

Operation of the GETS and the VIMS are also subject to the BAAQMD permit requirements related to new and modified sources of TACs (BAAQMD Regulation 2, Rule 5). The BAAQMD requires that new and modified sources of TACs would not result in an excess cancer risk greater than 10 in 1 million or a chronic HI greater than 1.0. These health standards are also enforced through the City's SCA-AIR-4: Stationary Sources of Air Pollution (Toxic Air Contaminants) (#25). Conservatively assuming the project's combined health risks from the relocated GETS and VIMS would result in the BAAQMD's maximum permissible health risks, the health risk screening values from the project's relocated GETS and VIMS were then refined using the distance multiplier from the BAAQMD's Health Risk Calculator (Beta Version 2.0). The calculator accounted for the dispersion and decrease in air pollutant concentrations from the relocated GETS and VIMS based on the shortest expected distance from the systems to the MEIR locations under the project and the access variant. The supporting health risk calculations are included in Appendix F.

During relocation of the GETS, the temporary shutdown of the system could result in a temporary rebound in groundwater concentrations and associated vapor intrusion concerns at downgradient and off-site locations. As discussed in Section 4.2, Hazards and Hazardous Materials, groundwater modeling indicates that groundwater plume migration during the GETS shutdown would be to the southwest, away from the existing residences. Soil gas sampling would also be performed under DTSC oversight and would ensure that the potential for vapor intrusion to impact off-site receptors would be appropriately characterized and remediated, if necessary.

The conservative screening-level health risks to sensitive receptors associated with operation of the relocated GETS and VIMS are summarized and compared to the BAAQMD's thresholds of significance in Table 4.4-10. The estimated excess cancer risks and chronic HIs from operation of the GETS and VIMS were below the thresholds of significance for both the project and the access variant; therefore, the project's emissions of VOCs during operation of GETS and VIMS would have a less-than-significant impact on nearby sensitive receptors.

Table 4.4-10 Health Risks at Maximally Exposed Individual Resident from GETS and VIMS

Sensitive Receptor	Distance from GETS (feet)	Diesel Particulate Matter		Exhaust $PM_{2.5}$
		Cancer Risk (per million)	Chronic Hazard Index	Annual Average Concentration ($\mu g/m^3$)
Maximally Exposed Individual Resident during construction and proposed project operation	470	3.8	0.4	NA
Maximally Exposed Individual Resident during access variant operation	365	4.6	0.5	NA
Thresholds of Significance	---	10	1	0.3
Exceed Threshold?	---	No	No	No

Notes: $\mu g/m^3$ = micrograms per cubic meter; "---" = not applicable
Source: Baseline Environmental Consulting, 2019.

e. New Sensitive Receptors Exposed to Toxic Air Contaminants. The project would not include the siting of new sensitive receptors. Therefore, project impacts related to the exposure of new sensitive receptors to TACs would be less than significant.

f. Objectionable Odors. As the project is the remediation of the site and construction of a warehouse, the project would not be expected to frequently generate significant odors for a substantial duration. Therefore, project impacts related to odors would be less than significant.

3. Cumulative Impacts

a. Cumulative Impacts on Regional Air Quality. The BAAQMD's thresholds of significance for criteria air pollutants, which have been adopted by the City, were designed to represent levels above which a project's individual emissions would result in a cumulatively considerable contribution to the SFBAAB's existing air quality conditions.[20] Since construction and operation of the proposed project would not exceed the BAAQMD's thresholds of significance for criteria pollutants (including ozone precursors), the cumulative impacts on regional air quality would be less than significant.

b. Cumulative TAC Emissions. In addition to a project's individual TAC emissions during construction and operation, the potential cumulative health risks to sensitive receptors from existing and reasonably foreseeable future sources of TACs were evaluated. Cumulative health risks were estimated at the MEIRs for the proposed project and access variant to represent the worst-case-exposure scenario for sensitive receptors in the project vicinity, as described below.

Cumulative TAC Emissions During Construction and Project Operation. As discussed above, the MEIR during construction and operation of the proposed project is located in a single-family home adjacent to the northwest side of the project site (Figure 4.4-2). The BAAQMD's online screening tools were used to provide conservative estimates of how much existing and foreseeable future TAC sources would contribute to cancer risk, HI, and $PM_{2.5}$ concentrations. The individual health risks associated with each source were summed to find the cumulative health risk at the MEIR. The supporting health risk calculations are included in Appendix F.

Cumulative sources of TAC emissions at the project site that could affect the MEIR include contaminated dust and vapor emissions during construction, off-road construction equipment, the GETS and VIMS systems, and diesel trucks accessing the project site under the proposed project scenario. It was conservatively assumed that health risks from contaminated dust and vapor emissions during construction would be the maximum health risks allowed and used by the AMP to develop the action levels (1 in a million for cancer risk and 1.0 for chronic HI). Based on the BAAQMD's 2017 inventory of permitted stationary sources for TAC and $PM_{2.5}$

[20] Bay Area Air Quality Management District (BAAQMD), 2009. Op. cit.

emissions,[21] the E 14th Auto Body Shop (Plant 8486) is the only existing stationary source located within 1,000 feet of the MEIR. Preliminary health risk screening values at the MEIR were determined using the BAAQMD Health Risk Calculator (Beta Version 2.0) and 2014 emissions data[22] for spray booth operations at the auto body shop. Based on review of the City of Oakland's Interactive Map of Major Developments,[23] there do not appear to be reasonably foreseeable future sources of TACs within 1,000 feet of the MEIR.

Preliminary health risk screening values at the MEIR from exposure to mobile sources of TACs were estimated based on the BAAQMD's Bay Area modeling[24] of health risks from highways, railroads, and major roadways with an average annual daily traffic (AADT) volume greater than 30,000 vehicles per day. The BAAQMD also recommends using their Roadway Screening Analysis Calculator[25] to evaluate health risks from roadways with over 10,000 AADT; however, based on review of 2020 AADT volumes forecasted by Alameda County Transportation Commission,[26] there is no roadway with over 10,000 AADT within 1,000 feet of the MEIR. The locations of the stationary and mobile sources of TAC are shown in Figure 4.4-2.

Estimates of the cumulative health risks at the MEIR for the proposed project are summarized and compared to the cumulative thresholds of significance in Table 4.4-11. The excess cancer risk, chronic HI, and annual average $PM_{2.5}$ concentrations at the MEIR for the proposed project were below the BAAQMD's cumulative thresholds. Therefore, the cumulative impact on nearby sensitive receptors from TAC and $PM_{2.5}$ emissions during construction and operation of the proposed project would be less than significant.

Cumulative TAC Emissions During Construction and Access Variant Operation. The approach for assessing the cumulative TAC emissions for the access variant's MEIR located in a single-family home adjacent to the west corner of the project site was the same as the methods described above. Existing sources of TAC emissions identified within 1,000 feet of the access variant MEIR include three stationary sources. These existing stationary sources are Allied Storage Containers (Plant 20385), MD Auto Body (Plant 15866), and Kaiser Permanente (Plant 13949). Preliminary health risk screening values at the MEIR were determined using the

[21] Bay Area Air Quality Management District (BAAQMD), 2019a. CSV file for 2017 permitted stationary sources provided by Areana Flores, BAAQMD, to Patrick Sutton, Baseline Environmental Consulting, March 25.

[22] Bay Area Air Quality Management District (BAAQMD), 2019b. 2014 stationary source emissions data provided to Baseline Environmental Consulting, May 6.

[23] City of Oakland, 2019. Interactive Map of Major Developments. April. Available at: https://www.oaklandca.gov/resources/view-an-interactive-map-the-city-of-oakland-major-development-projects, accessed May 2019.

[24] Bay Area Air Quality Management District (BAAQMD), 2019c. Raster files with health risks values modeled for all highways/freeways and roadways with over 30,000 AADT provided to Baseline Environmental Consulting, May 6.

[25] Bay Area Air Quality Management District (BAAQMD), 2015. Roadway Screening Analysis Calculator, April 16.

[26] Alameda County Transportation Commission (ACTC), 2014. Countywide Travel Demand Model. Planning Area 1; 2020 Daily Model Vehicle Volumes, July.

Table 4.4-11 Cumulative Health Risks at Maximally Exposed Individual Resident during Construction and Operation of the Proposed Project

Source	Source Type	Method Reference	Cancer Risk (10^{-6})	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Project					
Contaminated Dust and Vapor Emissions during Construction	Combined		1.0	1.0	NA
Off-Road Construction Equipment	Diesel Exhaust		8.2	0.01	0.03
GETS and VIMS	Volatile Organic Compounds	1	3.8	0.4	NA
Trucks during Operation (Project)	Diesel Exhaust		0.3	<0.01	<0.01
Existing Stationary Sources					
E 14th Auto Body Shop (Plant 8486)	Spray Booth	1,3	<0.1	<0.01	<0.01
Existing Mobile Sources					
Highways	Mobile	4	15.3	NA	0.26
Major Roadways	Mobile	4	10.4	NA	0.12
Railroads	Mobile	4	10.4	NA	<0.01
Cumulative Health Risks for the Proposed Project			49	1.4	0.4
Thresholds of Significance			100	10.0	0.8
Exceed Thresholds?			No	No	No

Notes: $\mu g/m^3$=micrograms per cubic meter; NA=not applicable; GETS = Groundwater Extraction and Treatment System ; VIMS = Vapor Intrusion Mitigation System.
Health risk screening values derived using the following BAAQMD tools and methodologies:
1. BAAQMD's Health Risk Calculator (Beta Version 2.0).
2. BAAQMD's Diesel Internal Combustion Engine Distance Multiplier Tool.
3. BAAQMD's 2014 stationary source emissions data.
4. BAAQMD's Bay Area Model of Health Risks from Highways, Railroads, and Major Roadways.
Source: Baseline Environmental Consulting, 2019.

BAAQMD Health Risk Calculator (Beta Version 2.0) and 2014 emissions data.[27] The BAAQMD's Diesel Internal Combustion Engine Distance Multiplier Tool was used to refine the health risks associated with the diesel generator at Kaiser Permanente (Plant 13949). No other reasonably foreseeable future sources of TACs were identified within 1,000 feet of the access variant's MEIR.

Preliminary health risk screening values at the access variant's MEIR from exposure to mobile sources of TACs were estimated based on the BAAQMD's Bay Area modeling[28] of health risks from highways, railroads, and major roadways. The locations of the stationary and mobile sources of TAC are shown in Figure 4.4-2.

[27] Bay Area Air Quality Management District (BAAQMD), 2019b. Op. cit.
[28] Bay Area Air Quality Management District (BAAQMD), 2019c. Op. cit.

Estimates of the cumulative health risks at the access variant's MEIR are summarized and compared to the cumulative thresholds of significance in Table 4.4-12. The excess cancer risk, chronic HI, and annual average $PM_{2.5}$ concentrations at the access variant's MEIR were below the BAAQMD's cumulative thresholds. Therefore, the cumulative impact on nearby sensitive receptors from TAC and $PM_{2.5}$ emissions during construction and operation of the access variant would be less than significant.

Table 4.4-12 Cumulative Health Risks at Maximally Exposed Individual Resident during Construction and Operations of the Access Variant

Source	Source Type	Method Reference	Cancer Risk (10^{-6})	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
Project					
Contaminated Dust and Vapor Emissions during Construction	Combined		1.0	1.0	NA
Off-Road Construction Equipment	Diesel Exhaust		8.2	0.01	0.03
GETS and VIMS	Volatile Organic Compounds	1	4.6	0.5	NA
Trucks during Operation (Access Variant)	Diesel Exhaust		5.4	<0.01	<0.01
Existing Stationary Sources					
Allied Storage Containers (Plant 20385)	Spray Booth	1,3	14.6	0.03	<0.01
MD Auto Body (Plant 15866)	Spray Booth	1,3	<0.1	<0.01	<0.01
Kaiser Permanente (13949)	Emergency Standby Generator	1,2,3	1.3	<0.01	<0.01
Existing Mobile Sources					
Highways	Mobile	4	19.1	NA	0.31
Major Roadways	Mobile	4	18.1	NA	0.32
Railroads	Mobile	4	24.4	NA	0.04
Cumulative Health Risks for the Access Variant			97	1.5	0.7
Thresholds of Significance			100	10.0	0.8
Exceed Thresholds?			No	No	No

Notes: $\mu g/m^3$=micrograms per cubic meter; NA=not applicable; GETS = Groundwater Extraction and Treatment System; VIMS = Vapor Intrusion Mitigation System.
Health risk screening values derived using the following BAAQMD tools and methodologies:
1. BAAQMD's Health Risk Calculator (Beta Version 2.0).
2. BAAQMD's Diesel Internal Combustion Engine Distance Multiplier Tool.
3. BAAQMD's 2014 stationary source emissions data.
4. BAAQMD's Bay Area Model of Health Risks from Highways, Railroads, and Major Roadways.
Source: Baseline Environmental Consulting, 2019.

c. Cumulative Impacts on Local Air Quality. The BAAQMD's thresholds of significance for CO, TACs, $PM_{2.5}$, and odors, which have been adopted by the City, were also designed to determine if a project's contribution to local air pollution would be cumulatively considerable. Since emissions of CO, TACs, DPM, and odors generated during construction and operation of the proposed project would not exceed the BAAQMD's cumulative thresholds of significance, the cumulative impacts on local air quality are also less than significant.

4.5 GREENHOUSE GAS EMISSIONS AND ENERGY

This section describes the existing greenhouse gas (GHG) conditions in the vicinity of the project site; discusses the regulations and policies pertinent to GHG emissions and energy use; and assesses the potentially significant impacts to the environment that could result from implementation of the proposed project or the San Leandro access variant, as well as associated Standard Conditions of Approval (SCAs) and mitigation measures to address potentially significant impacts. The potential impacts assessed include increases in GHG emissions and wasteful energy use during both the construction and operational phase of the proposed project.

The analysis in this section was prepared in accordance with the Bay Area Air Quality Management District (BAAQMD) CEQA Air Quality Guidelines (CEQA Guidelines).[1]

A. Setting

1. Environmental Setting

a. Climate Change and GHG Emissions. Climate change refers to change in the Earth's weather patterns, including the rise in temperature due to an increase in heat-trapping GHGs in the atmosphere. Existing GHGs allow about two-thirds of the visible and ultraviolet light from the sun to pass through the atmosphere and be absorbed by the Earth's surface. To balance the absorbed incoming energy, the surface radiates thermal energy back to space at longer wavelengths primarily in the infrared part of the spectrum. Much of the thermal radiation emitted from the surface is absorbed by the GHGs in the atmosphere and is re-radiated in all directions. Since part of the re-radiation is back toward the surface and the lower atmosphere, the global surface temperatures are elevated above what they would be in the absence of GHGs. This process of trapping heat in the lower atmosphere is known as the greenhouse effect.

An increase of GHGs in the atmosphere affects the energy balance of the Earth and results in a global warming trend. Increases in global average temperatures have been observed since the mid-20th century, and have been linked to observed increases in GHG emissions from anthropogenic sources. The primary GHG emissions of concern are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other GHGs of concern include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6), but their contribution to climate change is less than 1 percent of the total GHGs that are well-mixed (i.e., that have atmospheric lifetimes long enough to be homogeneously mixed in the troposphere).[2] Each GHG has a different global warming potential (GWP). For instance, CH_4 traps about 21 times more heat per molecule than CO_2. As a result, emissions of GHGs are reported in metric tons of carbon dioxide equivalents (CO_2e), wherein each GHG is weighted by its GWP relative to CO_2.

[1] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.

[2] Intergovernmental Panel on Climate Change. 2013. Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

The atmospheric concentrations of CO_2, CH_4, and N_2O have increased to levels unprecedented in at least the last 800,000 years due to anthropogenic sources. In 2010, the concentrations of CO_2, CH_4, and N_2O exceeded the pre-industrial era (before 1750) by about 39, 158, and 18 percent, respectively.[3] The Earth's mean surface temperature in the Northern Hemisphere from 1983 to 2012 was likely the warmest 30-year period over the last 1,400 years.[4] Earth's global surface temperatures in 2018 were the fourth warmest since 1880, which was behind those of 2016, 2017 and 2015. The past five years from 2014 to 2018 are collectively the warmest years in the modern record.[5]

The global increases in CO_2 concentrations are due primarily to fossil fuel combustion, cement production, and land use change (e.g., deforestation). The dominant anthropogenic sources of CH_4 are from ruminant livestock, fossil fuel extraction and use, rice paddy agriculture, and landfills, while the dominant anthropogenic sources of N_2O are from ammonia for fertilizer and industry.[6] All emissions of HFCs, PFCs, and SF6 are not naturally occurring and originate from industrial processes such as semiconductor manufacturing, use as refrigerants and other products, and electric power transmission and distribution.[7]

b. Existing GHG Emissions and Projections. In 2016, the California Air Resources Board (CARB) estimated that transportation was responsible for about 39 percent of California's GHG emissions, followed by industrial sources at about 21 percent, and electrical power generation at about 16 percent.[8] In 2015, 85 million metric tons of CO_2e were emitted from anthropogenic sources within the San Francisco Bay Area Air Basin (SFBAAB). Emissions of CO_2 dominate the GHG inventory in the SFBAAB, accounting for about 90 percent of the total CO_2e emissions reported.[9] The 2015 GHG emissions in the SFBAAB are summarized in Table 4.5-1.

Table 4.5-1 San Francisco Bay Area 2015 GHG Emissions Inventory

Pollutant	Percent	CO_2e (Million Metric Ton/Year)
CO_2	90	76.5
CH_4	4	3.4
N_2O	2	1.7
HFC, PFC, SF_6	4	3.4
Total	**100**	**85**

Source: Bay Area Air Quality Management District (BAAQMD), 2017. Final 2017 Clean Air Plan, April 19.

[3] Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases, Base Year 2011. January.

[4] Intergovernmental Panel on Climate Change (IPCC). 2013. Op. cit.

[5] National Aeronautics and Space Administration (NASA). 2019. 2018 Fourth Warmest Year in Continued Warming Trend, According to NASA, NOAA. Website: https://www.giss.nasa.gov/research/news/20190206/. Posted February 6.

[6] Intergovernmental Panel on Climate Change (IPCC). 2013. Op. cit.

[7] Bay Area Air Quality Management District (BAAQMD). 2015. Op. cit.

[8] California Air Resources Board (CARB). 2018. California Greenhouse Gas Emissions for 2000 to 2016 – Trends of Emissions and Other Indicators. July 11.

[9] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. April 19.

The City of Oakland's (City's) GHG emissions inventories for 2005, 2010, 2013, and 2015 are summarized in Table 4.5-2 for various land-use sectors. As indicated in Table 4.5-2, the greatest sources of GHG emissions in the City are from the On-Road Vehicles (includes highways and public roads) and Buildings and Energy Use land-use sectors. The 2015 GHG emissions decreased for each land-use sector compared to 2005 and the overall GHG emissions decrease by 16.4 percent. The largest overall reductions for GHG emissions over this same period were from the Buildings and Energy Use (6.7 percent) and Port of Oakland (5.6 percent) land-use sectors.

Table 4.5-2 City of Oakland GHG Emission Trends (Metric Tons CO_2e)

Category	2005	2010	2013	2015	Net Reductions[a]	Overall Net Reduction[b]
Buildings & Energy Use	1,034,747	1,010,526	956,096	833,582	201,165	6.7%
Airport	146,618	76,781	78,270	83,348	63,270	2.1%
Public Transit	39,652	37,917	36,113	39,302	350	<0.1%
On-Road Vehicles	1,405,930	1,254,156	1,369,958	1,374,225	31,705	1.1%
Port of Oakland	235,000	235,000	68,240	68,240	166,760	5.6%
Materials Use & Waste	82,977	65,898	63,205	64,727	18,250	0.6%
City Government	42,745	37,632	35,011	33,664	9,081	0.3%
Total	**2,987,669**	**2,717,910**	**2,606,893**	**2,497,088**	**490,581**	**16.4%**

Note: Lifecycle emissions associated with the production, use, and disposal of products and services are not included.
[a] Net Reduction = 2015 emissions – 2005 emissions.
[b] Overall Net Reduction = (2015 emissions – 2005 emissions) / Total 2005 emissions.
Source: City of Oakland. 2018. 2015 Greenhouse Gas Emissions Inventory Report. March.

c. Effects of GHG Emissions. According to the BAAQMD, some of the potential effects of increased GHG emissions and the associated climate change may include loss in snow pack (affecting water supply), sea level rise, more frequent extreme weather events, more large forest fires, and more drought years. In addition, climate change may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health.[10]

2. Regulatory Setting

a. Federal Regulations. The United States (U.S.) participates in the United Nations Framework Convention on Climate Change. In 1998 under the Clinton administration, the U.S. signed the Kyoto Protocol, which would have required reductions in GHGs; however, the protocol did not become binding in the U.S. as it was never ratified by Congress. Instead, the federal government chose voluntary and incentive-based programs to reduce emissions, and has established programs to promote climate technology and science. In 2002, the U.S.

[10] Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. April 19.

announced a strategy to reduce the GHG intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012. In 2015, the U.S. submitted its "intended nationally determined contribution" to the framework convention, which targets to cut net GHG emissions by 26 to 28 percent below 2005 levels by 2025.

The U.S. Environmental Protection Agency (EPA) is responsible for enforcing the federal Clean Air Act and the 1990 amendments to it. On April 2, 2007, the U.S. Supreme Court ruled that CO_2 is an air pollutant as defined under the Clean Air Act, and that the USEPA has the authority to regulate emissions of GHGs.[11] The USEPA made two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act, as follows:

- **Endangerment Finding:** The current and projected concentrations of the six key well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, they were a prerequisite for implementing GHG emissions standards for vehicles. In May 2010, the USEPA in collaboration with the National Highway Traffic Safety Administration (NHTSA) finalized national GHG emission and fuel economy standards for light-duty vehicles for the model years 2012 to 2016. These standards were consistent with the standards adopted by California under the Pavley Regulations, described below.[12] In August 2012, USEPA and NHTSA extended the national GHG emission and fuel economy standards for light-duty vehicles for the model years 2017 to 2025. Combined with the 2012 to 2016 standards, the regulation will result in vehicles emitting 50 percent less than 2010 levels in in 2025.[13]

In August 2016, USEPA and NHTSA finalized national GHG emission and fuel economy standards for medium- and heavy-duty vehicles that would cover model years 2018 to 2027 for certain trailers and model years 2021 to 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

National Energy Conservation Policy Act. The National Energy Conservation Policy Act (NECPA) is the foundation for federal-level conservation and efficiency goals and requirements for energy and water, and the use of renewable energy sources. The NECPA was a result of the

[11] Massachusetts, et al. v. U.S. Environmental Protection Agency, et al. (2007) 549 U.S. 497.

[12] U.S. Environmental Protection Agency (EPA), 2010. Regulatory Announcement: EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks.

[13] U.S. Environmental Protection Agency (EPA), 2012. Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks. August.

energy crisis during the mid-1970s and was signed into law in 1978. As passed, the NECPA promoted three major roles for the federal government in energy conservation: setting energy-efficiency standards; disseminating information about energy conservation opportunities; and improving efficiencies of federal buildings.

Energy Policy Act of 2005. The Energy Policy Act addresses energy production in the U.S. in the following aspects: energy efficiency, renewable energy, oil and gas, coal, tribal energy, nuclear matters and security, vehicles and motor fuels, hydrogen, electricity, energy tax incentives, hydropower and geothermal, and climate change technology. The Energy Policy Act of 2005 granted the Federal Energy Regulatory Commission the responsibilities and the authority to oversee the nation's electricity transmission grid, ensure fair competition in the wholesale power markets, and provide rate incentives to promote electric transmission investment, among other duties.

b. State Regulations and Policies. This section describes the State regulations and policies related to GHG and energy use.

Pavley Regulations – Assembly Bill 1493. In 2002, the California Legislature adopted Assembly Bill (AB) 1493, referred to as the "Pavley regulations," which required CARB to develop and adopt regulations that achieve the maximum feasible and cost-effective reductions in GHG emissions from new passenger vehicles. To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations in 2004 that added GHG emissions standards to California's existing standards for motor vehicle emissions. In 2009, CARB adopted amendments to the Pavley regulations that reduce GHG emissions in new passenger vehicles from 2009 through 2016. These regulations reduced GHG emissions from California passenger vehicles by 30 percent through 2016. Upon adoption of federal greenhouse gas standards by the USEPA and NHTSA that preserved the benefits of the Pavley regulations, the Pavley regulations were revised to accept compliance with the federal standards as compliance with California's standards in the 2012 through 2016 model years. Current regulations governing GHG emission and fuel economy standards are described below.

Advanced Clean Cars Program. On August 7, 2012, CARB adopted a set of regulations to control emissions from passenger vehicles, collectively called the Advanced Clean Cars Program. This program was developed in coordination with USEPA and NHTSA in order to control the emission of smog-causing criteria pollutants and GHG emissions.[14] In California, the standards are promulgated as a single coordinated package of regulations governing standards for criteria pollutant and GHG emissions, and establishing a technology mandate for zero-emission vehicles. The criteria pollutant and GHG emissions standards are consistent with the current USEPA and NHTSA standards described above, and are in effect an extension of the Pavley regulations beyond 2016. The zero-emission vehicle regulation is designed to achieve

[14] California Air Resources Board (CARB), 2019. Advanced Clean Cars Program: About. Website https://ww2.arb.ca.gov/index.php/our-work/programs/advanced-clean-cars-program/about, accessed April 15, 2019.

the state's long-term emission reduction goals by requiring auto manufacturers to offer for sale specific numbers of the very cleanest cars available.

Renewable Portfolio Standard – Senate Bills 1078, 107, X1-2, 350, and 100. In 2002, under Senate Bill (SB) 1078, the State enacted the Renewable Portfolio Standard (RPS) program, which aims to increase the percentage of renewable energy in California's electricity mix to 20 percent of retail sales by 2017. The RPS timeline was accelerated in 2006 under SB 107 and expanded in 2011, 2015, 2018 under SB X1-2, SB 350, and SB 100, respectively. The RPS program currently requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent by 2020 and 60 percent by 2030. In addition, SB 100 sets a planning goal that 100 percent of total retail sales of electricity in California come from eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Executive Order S-3-05. In 2005, Governor Schwarzenegger issued Executive Order S-3-05, which states that California is vulnerable to the effects of climate change, including reduced snowpack in the Sierra Nevada Mountains, exacerbation of California's existing air quality problems, and sea level rise. To address these concerns, the executive order established the following statewide GHG emissions reduction targets:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

It should be noted that executive orders are legally binding only on State agencies and have no direct effect on local government or the private sector.

California Global Warming Solutions Act of 2006 – AB 32. In 2006, Governor Schwarzenegger signed AB 32, the California Global Warming Solutions Act, which requires California to reduce statewide GHG emissions to 1990 levels by 2020. In December 2008, the CARB adopted the Scoping Plan, which outlines a statewide strategy to achieve AB 32 goals. At the regional level, in response to SB 375 (see below), the Bay Area has developed a Sustainable Communities Strategy (SCS) to integrate land use and transportation planning in order to reduce future motor vehicle travel and decrease GHG emissions. In addition, the BAAQMD is implementing a wide range of programs that promote energy efficiency, reduce vehicle miles traveled (VMTs), and develop alternative sources of energy.

Low-Carbon Fuel Standard – Executive Order S-1-07. In 2007, Governor Schwarzenegger issued Executive Order S-1-07 to enact a low-carbon fuel standard (LCFS). The LCFS calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020. It also directed the CARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete early-action measure under AB 32. CARB adopted the Low Carbon Fuel Standard on April 23, 2009. The Low Carbon Fuel Standard was

last amended January 4, 2019, in order to support the 2030 GHG emissions targets enacted through SB 32 (as discussed further below). The amended standard requires a 20 percent reduction in the carbon intensity of California's transportation fuels by 2030.

California Environmental Quality Act and Senate Bill 97. In 2007, under SB 97, the State acknowledged that climate change is a prominent environmental issue requiring analysis under CEQA. SB 97 directed the Governor's Office of Planning and Research to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. In 2009, the Natural Resources Agency adopted the State CEQA Guidelines amendments, which provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The amendments became effective in March 2010. The amendments added Sections 15126.4(c) and 15064.4 (discussed further below) to the CEQA Guidelines, which specifically pertain to the significance of GHG emissions, and provide guidance on measures to mitigate GHG emissions when such emissions are found to be significant.

Sustainable Communities Strategy – SB 375. In 2008, Governor Schwarzenegger signed SB 375, which aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations to reduce vehicle emissions and help California meet the GHG reduction goals established in AB 32. Under SB 375, metropolitan planning organizations are required to incorporate an SCS into their Regional Transportation Plan. The goal of the SCS is to reduce regional VMTs and associated GHG emissions through land use planning strategies, such as promoting compact, mixed-use commercial and residential development near public transportation hubs. In accordance with SB 375, the Metropolitan Transportation Commission has incorporated the SCS into their current Regional Transportation Plan, Plan Bay Area 2040.[15] SB 375 also provides incentives to developers through CEQA streamlining to encourage projects that are consistent with applicable regional plans, and which achieve GHG emissions reduction targets.

Executive Order B-30-15 and SB 32. In 2015, Governor Brown issued Executive Order B-30-15, which set a statewide GHG emissions reduction target of 40 percent below 1990 levels by 2030. This target is in addition to the previous GHG emissions reduction targets established in Executive Order S-3-05 for 2010, 2020, and 2050. In September 2016, Governor Brown signed SB 32, which codifies the GHG emissions reduction target in Executive Order B-30-15.

As required by Executive Order B-30-15 and SB 32, CARB updated the Scoping Plan to identify measures to meet the 2030 target. The revised scoping plan was adopted December 14, 2017 and builds upon the initial scoping plan initiatives used for achieving 2020 targets, such as implementation of SCSs, LCFS, and RPS. Policies target building efficiency; renewable power

[15] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). 2017. Plan Bay Area 2040. Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040. Adopted July 26.

investment; clean and renewable fuels; vehicle emissions; walkable/bikeable communities with transit; cleaner freight and goods movement; reducing pollutants from dairies, landfills, and refrigerants; and capping emission from transportation, industry, natural gas, and electricity sources.

Senate Bill 743. SB 743 changes the way that public agencies must evaluate the transportation impacts of projects under CEQA. The bill required revisions to the CEQA guidelines that would establish new criteria for determining the significance of a project's transportation impacts that will 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 GHG emissions.

As required under SB 743, the Governor's Office of Planning and Research (OPR) developed potential metrics to measure transportation impacts that may include, but are not limited to, VMT, VMT per capita, automobile trip generation rates, or automobile trips generated. The new metric would replace the use of delay and level of service (LOS) as the metric to analyze transportation impacts under CEQA. OPR recommends different thresholds of significance for projects depending on land use types. For example, residential and office space projects must demonstrate a VMT level that is 15 percent less than that of existing development in the region may be a reasonable criterion for determining whether the mobile-source GHG emissions associated with the project are consistent with statewide GHG reduction targets. With respect to retail land uses, any net increase of VMT may be sufficient to indicate a significant transportation impact.

Warren-Alquist Act. The Warren-Alquist Act of 1975 is the legislation that created the California Energy Commission. The Act enables the California Energy Commission to formulate and adopt the nation's first-ever energy conservation standards for buildings constructed and appliances sold in California. The California Energy Commission was also directed to create a research and development program with a focus on fostering non-conventional energy sources.

Title 24 Building Efficiency Standards. The State regulates energy consumption under Title 24 Building Standards Code, Part 6 of the California Code of Regulations (also known as the California Energy Code). The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and nonresidential buildings. The California Energy Code is updated every three years, with the most recent iteration (2016) effective as of January 1, 2017, and the next version (2019) planned to go into effect on January 1, 2020. The California Energy Commission's long-term vision is that future updates to the California Energy Code will support zero-net energy for all new single-family and low-rise residential buildings by 2020 and new high-rise residential and nonresidential buildings by 2030.

Title 24 California Green Building Standards Code. Title 24 Building Standards Code, Part 11 of the California Code of Regulations is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.

c. Local Regulations.

BAAQMD Climate Protection Program. The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB. The climate protection program includes measures that promote energy efficiency, reduce VMTs, and develop alternative sources of energy, all of which assist in reducing emissions of GHGs and in reducing air pollutants that affect the health of residents. The BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

BAAQMD 2017 Clean Air Plan. The BAAQMD and other air districts prepare clean air plans in accordance with the State and federal Clean Air Acts. In April 2017, the BAAQMD adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate (2017 CAP), which is a comprehensive plan to improve Bay Area air quality and protect public health through implementation of a control strategy designed to reduce emissions and ambient concentrations of harmful pollutants. The 2017 CAP also includes measures designed to reduce GHG emissions.

City of Oakland Energy and Climate Action Plan. In December 2012, the City adopted the Energy and Climate Action Plan (ECAP).[16] The purpose of the ECAP is to identify and prioritize actions for reducing energy consumption and GHG emissions associated with the City. The ECAP includes more than 150 actions to enable the City to reduce GHG emissions by 36 percent below 2005 levels by 2020, on a path toward reducing GHG emissions by 83 percent below 2005 levels by 2050. These goals were established to align with the Intergovernmental Panel on Climate Change's Fourth Assessment Report, which recommended that industrialized countries such as the U.S. reduce GHG emissions 25 to 40 percent below 1990 levels by 2020 and 80 to 95 percent below 1990 levels by 2050 in order to achieve a level of climate stabilization that includes relatively minor consequences.

[16] City of Oakland. 2012. Energy and Climate Action Plan, December 4. Updated March 2018.

The City plans to accomplish the 2020 GHG-reduction goal through the following:

- 20 percent reduction in VMTs annually as residents, workers, and visitors meet daily needs by walking, bicycling, and using transit
- 24 million gallons of oil saved annually due to less driving and more fuel-efficient vehicles on local roads
- 32 percent decrease in electricity consumption through renewable generation, conservation, and energy efficiency
- 14 percent decrease in natural gas consumption through building retrofits, solar hot water projects, and conservation
- 62 million kilowatt-hours and 2.7 million therms annually of new renewable energy used to meet local needs
- 375,000 tons of waste diverted away from local landfills through waste reduction, reuse, recycling, and composting

In March 2018, the City updated the ECAP to reprioritize existing action items and include the most recent GHG emissions inventory.

On May 15, 2018, the City passed Resolution No. 87189 to adopt an interim GHG reduction goal of 56 percent below 2005 levels by 2030. The City has conducted an in-depth GHG analysis using the Climate Action for Urban Sustainability (CURB) planning tool to help identify critical actions needed for the City to achieve their long-term GHG reduction goals for 2030 and 2050.[17] These actions will be outlined and prioritized in the next update to the ECAP, which will be adopted in 2020.

City of Oakland Green Building Ordinance. In October 2010, the City adopted the Green Building Ordinance for Private Development Projects. This ordinance affects a wide range of projects, including new residential, non-residential, and mixed-use developments. The minimum green building requirements described in the ordinance are designed to reduce energy use, conserve water and other natural resources, limit solid waste during construction and operation, and promote healthy indoor air quality. Requirements from both the City's local ordinance and the State's CALGreen code apply to future City developments.

City of Oakland Plug-in Electric Vehicle Charging Stations. As of March 2017, Chapter 15.04, Part 11 of the City's Municipal Code requires all new multi-family and non-residential buildings to include full circuit infrastructure for plug-in electric vehicle (PEV) charging stations for at least 10 percent of the total parking spaces. In addition, inaccessible conduits for future expansion of PEV spaces must be installed for 90 percent of the total parking at multi-family

[17] Bloomberg Associates. 2018. Pathways to Deep GHG Reductions in Oakland: Final Report. March.

buildings and 10 percent of the total parking at non-residential buildings. The new requirements are designed to accelerate the installation of vehicle chargers to address demand.

City of Oakland Waste Reduction and Recycling. Chapter 15.34 of the City's Municipal Code requires new construction projects to submit a Waste Reduction and Recycling Plan to the City's Building Official for review and approval. The intent of the provisions are to divert (e.g., reuse on site) at least 50 percent of construction and demolition debris from landfills. The purpose of these provisions is to prescribe requirements designed to meet and further the goals of the California Integrated Waste Management Act of 1989 (AB 939) and the Alameda County Waste Reduction and Recycling Act of 1990 (Measure D).

Based on solid waste disposal rates reported by the California Department of Resources Recycling and Recovery (CalRecycle) for the City of Oakland in 2015,[18] the City currently diverts about 70 percent of their waste from landfills to be recycled or reused, which exceeds the previous statewide goal to reduce waste by 50 percent in 2000 under AB 939. The current statewide goal mandated under AB 341 is to reduce waste disposal by 75 percent by 2020. In March 2006 the Oakland City Council adopted a Zero Waste Goal for 2020 to reduce the City's waste disposal by 90 percent. In December 2006, the City passed a resolution adopting a Zero Waste Strategic Plan. The Zero Waste Strategic Plan[19] provides a framework of policies and initiatives that guide the planning and decision-making process to achieve the City's Zero Waste Goal. The City's current ECAP update outlines policies and actions to help the City achieve the Zero Waste Goal. However, based on the City's recent waste disposal rates reported by CalRecycle, the City is not projected to meet the Zero Waste Goal by 2020.

General Plan. The following policies from the City of Oakland General Plan would relate to the GHG Emissions.

Policy T.2.1 Encouraging Transit-Oriented Development. Transit-oriented development should be encouraged at existing or proposed transit nodes, defined by the convergence of two or more modes of public transit such as BART, bus, shuttle service, light rail or electric trolley, ferry, and inter-city or commuter rail.

Policy T.2.2 Guiding Transit-Oriented Development. Transit-oriented developments should be pedestrian-oriented, encourage night and day time use, provide the neighborhood with needed goods and services, contain a mix of land uses, and be designed to be compatible with the character of surrounding neighborhoods.

[18] CalRecyle. 2019. Jurisdiction Diversion/Disposal Rate Summary (2007 - Current); Per Capita Disposal Rates Trends; City of Oakland. Data generated April 18.

[19] City of Oakland Public Works Agency. 2006. Zero Waste Strategic Plan. November 28.

Policy N3.2 Promoting Strategies to Address Congestion. In order to facilitate the construction of needed housing units, infill development that is consistent with the General Plan should take place throughout the City of Oakland.

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

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

Policy CO-13.3 Construction Methods and Materials. Encourage the use of energy-efficient construction and building materials. Encourage site plans for new development which maximize energy efficiency.

Policy CO-13.4 Alternative Energy Sources. Accommodate the development and use of alternative energy resources, including solar energy and technologies which convert waste or industrial byproducts to energy, provided that such activities are compatible with surrounding land uses and regional air and water quality requirements.

d. Standard Conditions of Approval. The City of Oakland Uniformly Applied Development Standards would be incorporated into the project as Standard Conditions of Approval (SCAs). The following SCAs would apply to the proposed project or access variant.

SCA-GHG-1: Green Building Requirements (#87)
a. Compliance with Green Building Requirements During Plan-Check
Requirement: The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code).

i. The following information shall be submitted to the City for review and approval with the application for a building permit:

- Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
- Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
- Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.
- Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.
- Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
- Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
- Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

ii. The set of plans in subsection (i) shall demonstrate compliance with the following:
- CALGreen mandatory measures.
- New Construction of Residential or Non- residential projects that remove a Historic Resource (as defined by the Green Building Ordinance) the point level certification requirement is 53 points for residential and LEED Gold for non-residential)] per the appropriate checklist approved during the Planning entitlement process.
- All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted.
- The required green building point minimums in the appropriate credit categories.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project.

The following information shall be submitted to the City for review and approval:

i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.
ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.
iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

c. Compliance with Green Building Requirements After Construction

Requirement: Prior to the finalizing the Building Permit, the Green Building Certifier shall submit the appropriate documentation to City staff and attain the minimum required point level.
When Required: Prior to Final Approval

Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26)
a) Truck Loading Docks
Requirement: The project applicant shall locate proposed truck loading docks as far from nearby sensitive receptors as feasible.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

b) Truck Fleet Emission Standards
Requirement: The project applicant shall comply with all applicable California Air Resources Board (CARB) requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Methods to comply include, but are not limited to, new clean diesel trucks, higher-tier diesel engine trucks with added Particulate Matter (PM) filters, hybrid trucks, alternative energy trucks, or other methods that achieve the applicable CARB emission standard. Compliance with this requirement shall be verified through CARB's Verification Procedures for In-Use Strategies to Control Emissions from Diesel Engines.
When Required: Prior to building permit final; ongoing
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

B. Impacts and Mitigation Measures

This section analyzes environmental impacts related to GHG emissions and energy use that could result from implementation of the project or access variant. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies SCAs and/or mitigation measures to address these impacts, as needed.

1. Criteria of Significance

Implementation of the proposed project or access variant would result in a significant GHG or energy impact if it would:

Greenhouse Gases

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing the emissions of GHGs.

Energy

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The criteria above are from the CEQA Guidelines, Appendix G adopted by the California Natural Resources Agency on December 28, 2018. The City adopted a set of significance criteria which are also intended to implement and supplement provisions in the CEQA Guidelines. The City's significance criteria for GHG and energy were not used for this analysis because some of them established quantitative thresholds which did not include the City's GHG reduction targets beyond 2020.

2. Analysis Approach

GHG and energy impacts are, by their nature, cumulative impacts because one project by itself cannot significantly contribute to or cause significant environmental effects. The GHG thresholds of significance used in this EIR pertain to a project's contribution to cumulative impacts and whether the project's contribution is cumulatively considerable.

The BAAQMD has adopted and incorporated GHG thresholds of significance into their CEQA Guidelines[20] to assist lead agencies in evaluating and mitigating air quality impacts under CEQA; the City has adopted these thresholds. The BAAQMD's GHG thresholds were developed to evaluate stationary sources and whether land-use sector projects would comply with the statewide 2020 GHG reduction goal under AB 32 to reduce GHG emissions to 1990 levels; the City has adopted these thresholds. The scientific soundness of the thresholds is supported by substantial evidence presented in the BAAQMD's Revised Draft Options and Justification Report.[21] The BAAQMD is in the process of updating their CEQA Guidelines to include revised significance thresholds to evaluate long-term GHG reduction goals beyond 2020.

For stationary sources, such as an emergency backup generator, the BAAQMD recommends that permit applications be reviewed against a bright-line threshold of 10,000 metric tons of CO_2e per year. This threshold corresponds to a level that would capture approximately 95 percent of stationary source GHG emissions based on all combustion emissions.

Because the proposed project would include development beyond 2020, the interim GHG reduction goal for 2030 adopted by the City is also considered in this EIR. As discussed

[20] Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May.

[21] Bay Area Air Quality Management District (BAAQMD). 2009. Revised Draft Options and Justification Report: California Environmental Quality Act Thresholds of Significance. October.

previously, the City has an interim goal of reducing GHG emissions to 56 percent below 2005 levels by 2030. The City's 2030 GHG reduction goal is more aggressive than the statewide goal of reducing GHG emissions 40 percent below 1990 levels based on SB 32; therefore, a project that supports the City's 2030 GHG reduction goal would also support the statewide 2030 GHG reduction goal.

To evaluate the significance of GHG emissions from construction and operation of the proposed project, the following two-step approach was used in this Draft EIR:

1. Assess transportation-related GHG emissions (except from heavy-duty trucks) using a combination of quantitative and qualitative targets; and
2. Assess non-transportation GHG emissions and heavy-duty trucks emissions using an efficiency metric based on the City's adopted 2030 target for GHG emissions.

In Section 4.3, Transportation and Circulation, of this EIR, the total VMT for the proposed project was compared quantitatively against the per-capita VMT threshold recommended by the Governor's Office of Planning and Research for SB 743 compliance for projects located in Priority Development Areas as defined by Plan Bay Area 2040. Consistent with SB 743 requirements, the VMT analysis did not include heavy-duty truck trips that would be generated by the warehouse. Per the results from Table 4.3-4, the transportation analysis concluded that the project or the access variant would not have a significant impact on VMT. Therefore, transportation-related GHG emissions (excluding heavy-duty trucks) from the proposed project and the access variant would not have a significant impact.

All GHG emissions from non-transportation sectors (construction, building energy use, water, wastewater, solid waste) and heavy-duty truck trips proposed by the project have been compared to the efficiency metric for 2030 for this analysis. Efficiency thresholds are quantitative thresholds that are based on a measurement of GHG efficiency for a given project, regardless of the total amount of mass emissions. Projects that attain the efficiency target, with or without mitigation, would result in less-than-significant GHG emissions. The citywide efficiency metric used in this analysis is based on the GHG emissions divided by the "service population" (SP), which is the sum of people who live (residents) and work (employees) in the City of Oakland. Table 4.5-3 summarizes the non-transportation GHG efficiency thresholds for the City of Oakland. These thresholds do not account for GHG emissions from heavy-duty trucks. However, this analysis also takes a conservative approach and compares the project's combined GHG emissions from non-transportation sectors and heavy-duty truck trips.

Because the differences between the proposed project and the access variant would not affect GHG emissions from sources other than transportation, the discussion below regarding GHG emissions from non-transportation sectors from the proposed project is also applicable to the access variant. Similarly, the discussions regarding energy use of the proposed project is also applicable to the access variant.

Table 4.5-3 Oakland Non-Transportation GHG Efficiency Thresholds

	2005	2030
Population	410,560	552,812
Employment	213,666	259,723
Service Population	624,226	812,535
GHG Reduction Goal	--	56%
Land-Use Sector GHG Emission Goals ($MTCO_2e$)	1,117,724	491,799
City GHG Efficiency Threshold ($MTCO_2e$/SP)	**1.79**	**0.61**

Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent; SP = service population; "--" = not applicable
Service population was estimated based on the projected population and employment reported by the Metropolitan Transportation Commission's Travel Demand Model[22] for all Transportation Analysis Zones (TAZs) in the City of Oakland.
Source: The data from these TAZ support Plan Bay Area 2040.[23] The baseline GHG emissions were based on the City's 2005 GHG Inventory[24] for building energy use, water and wastewater, and solid waste.

3. Project Impacts

The following section discusses potential impacts related to GHG emissions and energy use associated with implementation of the proposed project or access variant.

a. Greenhouse Gas Emissions.

Impact GHG-1: Project construction and operation would generate GHG emissions that would exceed the City's target threshold and result in a significant and unavoidable impact. (S)

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod versions 2016.3.2) to estimate emissions of GHGs for a proposed project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land use projects that can be used if site-specific information is not available. The default data used in the model are supported by substantial evidence provided by regulatory agencies and a combination of statewide and regional surveys of existing land uses. The primary input data used to estimate GHG emissions for the proposed project are summarized in Table 4.5-4.

Additional assumptions used to calculate GHG emissions in CalEEMod are summarized in Table 4.5-5. A copy of the CalEEMod report, which summarizes the input parameters, assumptions, and findings, is provided in Appendix F.

[22] Metropolitan Transportation Commission (MTC), 2018. Open Date Catalog; Transportation Analysis Zones. Available at: http://opendata.mtc.ca.gov/datasets/transportation-analysis-zones. Last updated September 24.

[23] Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG), 2017. Plan Bay Area 2040. Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040. Adopted July 26.

[24] City of Oakland, 2018. 2015 Greenhouse Gas Emissions Inventory Report, March.

Table 4.5-4 Proposed Project Land Use Input Parameters for CalEEMod

Project Development	CalEEMod Land Use Type	Unit	Amount
Warehouse	Unrefrigerated Warehouse - No Rail	1,000 Square Feet	525
Office	General Office Building	1,000 Square Feet	10
Truck Access/Parking Stalls	Other Asphalt Surfaces	Acre	10

Note: A copy of the CalEEMod report is provided in Appendix F.
Source: Baseline Environmental Consulting, 2019.

Table 4.5-5 Proposed Project Assumptions for CalEEMod

CalEEMod Input Category	Assumptions and Changes to Default Data
Construction	As described in Chapter 4.4, Air Quality (Table 4.4-4), site-specific information related to construction equipment use, haul trips, and phase durations was used to estimate GHG emissions during construction.
Utility Provider	The default 2008 CO_2 intensity factor for Pacific Gas and Electric (641 pounds per megawatt hour) was updated to the most recent CO_2 intensity factor verified by a third party in 2016 (294 pounds per megawatt hour).[a] This represents power from nearly 70 percent carbon-free sources (nuclear, renewables, and hydroelectric).
Natural Gas Use	According to the project applicant no natural gas would be used in the building heating system or other design components. Therefore, GHG emissions from the use of natural gas during project operation were excluded from the calculation.
Vehicle Trips	Daily trip rates for heavy-duty truck trips were included based on the project traffic analysis (see Section 4.3, Transportation and Circulation).
Wastewater	Based on the design of the East Bay Municipal Utility District's Wastewater Treatment Plant, emissions estimated from wastewater treatment assumed a process with 100-percent aerobic biodegradation and 100-percent anaerobic digestion with cogeneration.
Water Use	In accordance with the City's Green Building Ordinance, mandatory measures from the statewide CALGreen Code to reduce indoor water use by approximately 20 percent were included. According to the project's LEED checklist[a], an additional 20 percent reduction in indoor water use would be applied beyond the statewide CALGreen Code requirement. The LEED checklist also incorporated a 50 percent reduction in outdoor water use. Therefore, it was assumed that the project operation would have a 40 percent reduction in indoor water use and a 50 percent reduction in outdoor water use.
Solid Waste	The average annual diversion rate for solid waste disposal in the City of Oakland is currently about 68 percent. The default solid waste disposal rates for commercial and industrial land uses in CalEEMod are based on statewide surveys conducted in 2005.[b] The statewide waste diversion rate in 2005 was about 52 percent.[c] The default disposal rates for the commercial and industrial land uses were reduced by 33 percent to account for the equivalent 68 percent annual average diversion rate currently reported for the City of Oakland.

Note: Default CalEEMod data used for all other parameters not described.
[a] Zinner Consultants, 2019. LEED Warehouse and Distribution Centers v4/v4.1, Project Checklist, Standard Spec Warehouse + Interior Lighting + TI + PV. July 24.
[b] California Integrated Waste Management Board, 2006. Targeted Statewide Waste Characterization Study: Waste Disposal and Diversion Findings for Selected Industry Groups, June.
[c] California Department of Resources Recycling and Recovery (CalRecycle), 2019. California's Estimated Statewide Diversion Rates Since 1989. https://www.calrecycle.ca.gov/LGCentral/GoalMeasure/DisposalRate/Graphs/EstDiversion/, accessed on June 26, 2019.
Source: Baseline Environmental Consulting, 2019.

The land-use sector GHG emissions from the proposed project were evaluated based on an average service population of 200 employees. The estimated total average annual CO_2e emissions per service population for the project was compared to the interim 2030 GHG threshold of significance in Table 4.5-6. The total estimated GHG emissions from non-transportation sources was 2.92 metric tons of CO_2e per service population ($MTCO_2e/SP$), which is more than 4 times higher than the interim 2030 GHG threshold. The largest GHG contributions from non-transportation sources are from electricity use and solid waste disposal. Because the project's non-transportation CO_2e emissions exceed the interim 2030 GHG threshold of significance, the project does not demonstrate substantial progress toward meeting the City's 2030 GHG reduction target.

Table 4.5-6 GHG Emissions from Non-Transportation Sectors and Heavy-Duty Truck Trips

Emission Source	CO_2e (MT/year/SP)	Overall Contribution to GHG Emissions
Construction[a]	0.18	2%
Operation – Area	<0.01	<1%
Operation – Energy	1.42	13%
Operation – Waste	0.85	8%
Operation – Water	0.47	4%
Total Non-Transportation Emissions	2.92	27%
Total Heavy-Duty Truck Trip Emissions	8.00	73%
Total Non-Transportation and Heavy-Duty Truck Trip Emissions	10.92	100%
Interim 2030 GHG Efficiency Threshold	0.61	--
Threshold Exceedance?	Yes	--

Notes: MT = metric tons; SP = service population; "--" = not applicable
[a] GHG emissions during construction were amortized over 40 years.
Source: Baseline Environmental Consulting, 2019.

As shown on Table 4.5-6, the total estimated GHG emissions from heavy-duty trucks was 8.00 $MTCO_2e/SP$, which is more than 13 times higher than the interim 2030 GHG threshold. Based on the combined GHG emission from non-transportation sources and heavy-duty trucks, the heavy-duty truck emissions contribute about 73 percent of the overall GHG emissions. SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26) requires the project applicant to control diesel engine emissions and comply with all CARB requirements. Methods to comply would include, but not be limited to, the use of new clean diesel trucks, high-tier diesel engine trucks with added PM filters, hybrid trucks, or alternative energy trucks. Use of low or no emission trucks would also reduce GHG emissions from truck operations. However, the truck fleets serving the proposed warehouse project would likely be owned and operated by a third party, and therefore the GHG emissions associated with the trucks traveling to and from the proposed warehouse would be outside the control of the project applicant and cannot be

regulated or reduced through required mitigation measures by the City. The GHG emissions from on-road trucks are currently controlled by CARB regulations, and overall truck emissions in California are expected to decrease over time to help meet statewide GHG reduction goals. Furthermore, the GHG emissions generated by trucks accessing a warehouse located near the Port of Oakland (such as the proposed project) would be lower than the GHG emissions generated by trucks traveling to a warehouse further away from the Port of Oakland because the movement of goods would be less efficient and CO_2e emissions would be increased. Therefore, the estimated CO_2e emissions from heavy-duty trucks identify the maximum project-related impact. While, truck emissions are not required to be reduced as part of the mitigation measure; nevertheless the project would have a significant unavoidable GHG emissions impact.

The following mitigation measures would be applied to the project to reduce GHG emissions from non-transportation sources to the maximum extent feasible, however the impact would continue to be significant and unavoidable.

Mitigation Measure GHG-1:

a. GHG Reduction Plan Required. The project applicant shall retain a qualified air quality consultant to develop a GHG Reduction Plan for City review and shall implement the approved GHG Reduction Plan. The GHG Reduction Plan shall demonstrate compliance with at least one of the following GHG goals prior to approval of a construction-related permit:

1) Consistency with a certified Qualified Climate Action Plan (if available); or
2) GHG emissions from non-transportation sources below the 2030 GHG efficiency threshold of 0.61 MT CO_2e/SP.

The GHG Reduction Plan shall include, at a minimum: (a) a detailed GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City's Standard Conditions of Approval, project design features, and other City requirements) and additional GHG reduction measures available to further reduce GHG emissions, and (b) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.

Such GHG reduction measures may include, but are not limited to, the following:

- **Carbon-Free Energy.** Address 100 percent of the project's electricity need through carbon-free sources (e.g., renewable, and hydroelectric) and/or carbon offset projects.
- **Alternative Fuels for Diesel-Powered Construction Equipment.** Use renewable diesel fuel for diesel-powered construction equipment that meets California's Low Carbon Fuel Standards and is certified by CARB Executive Officer.

- **Outdoor Electrical Receptacles.** Include electrical receptacles on the exterior of walls of the building that are accessible for the purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil fuel-powered generators.
- **Electric Forklifts and Associated Charging Stations.** Include a dedicated charging station for electric forklifts at all loading docks and truck loading areas.

Other potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council.

The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features, listed above; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "carbon credits") as explained below. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits.

If, after exhaustion of feasible physical design features and operational features specific to the project, the project's GHG emissions would still fail to meet the requirements of GHG goal 1 or GHG goal 2, the project applicant shall purchase carbon credits to further reduce GHG emissions. The preference for purchasing carbon credits by location shall be applied as follows: (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of carbon credit purchases shall be based on current market value at the time purchased and shall be based on the project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits.

b. GHG Reduction Plan Implementation during Construction. The project applicant shall implement the GHG Reduction Plan during construction of the project. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be implemented during construction. For physical GHG reduction measures to be incorporated into off-site projects, the project applicant shall obtain all necessary permits/approvals and the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval. These off-site improvements shall be installed prior to completion of the subject project (or prior to completion of the project phase for

phased projects). For GHG reduction measures involving the purchase of carbon credits, evidence of the payment/purchase shall be submitted to the City for review and approval prior to completion of the project (or prior to completion of the project phase, for phased projects).

c. GHG Reduction Plan Implementation after Construction. The project applicant shall implement the GHG Reduction Plan after construction of the project (or at the completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into the project or off-site projects, the measures shall be implemented on an indefinite and ongoing basis.

The project applicant shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan.

d. Annual Report. Implementation of the GHG reduction measures and related requirements shall be ensured through compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant shall prepare each year of the useful life of the project an Annual GHG Emissions Reduction Report ("Annual Report"), for review and approval by the City Planning Director or his/her designee. The Annual Report shall be submitted to an independent reviewer of the City's choosing to be paid for by the project applicant.

The Annual Report shall summarize the project's implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year's Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan.

The GHG Reduction Plan shall be considered fully attained when the project demonstrates consistency with a Qualified Climate Action Plan or when the project reduces non-transportation GHG emissions below the 2030 GHG efficiency threshold of 0.61 MT CO_2e/SP, as confirmed by the City through an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below.

e. Corrective Procedure. If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG

emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures ("Corrective GHG Action Plan"). The project applicant shall then implement the approved Corrective GHG Action Plan.

If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City may, in addition to its other remedies: (a) assess the project applicant a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project's approvals should be revoked, altered or additional conditions of approval imposed.

The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the "adjusted" baseline.

In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant has made a good faith effort to comply with the GHG Reduction Plan.

The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan.

f. Timeline Discretion and Summary. The City shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project. (SU)

Implementation of this mitigation measure will reduce the project's GHG emissions from non-transportation sources to the maximum extent feasible, and is likely to reduce the project's GHG emissions to below the applicable threshold with the purchase of carbon credits. However, the full implementation of this mitigation measure hinges on the availability of carbon credits. There remains uncertainty of availability of sufficient carbon offset opportunities as well as uncertainty of reliabilities with carbon credit purchases through a third party. Therefore, the successful implementation of Mitigation Measure GHG-1 is considered speculative at this time. Thus, the project's GHG emissions impact on the environment is considered significant and unavoidable.
Greenhouse Gas Plans, Policies, or Regulations.

Impact GHG-2: Project operations could conflict with applicable GHG plans, policies, or regulations. (S)

The project is subject to the City's SCAs, some of which reduce GHG emissions. These include but are not limited to CALGreen requirements under SCA-GHG-1: Green Building Requirements (#87), SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26), and TDM measures under SCA-TRA-5. The City has adopted GHG reduction goals for 2030 and 2050, which are more aggressive than the statewide GHG reduction goals. The next update to the ECAP in 2020 will outline how the City will achieve their 2030 and 2050 GHG reduction targets. Because GHG emissions from project construction and operation would exceed the interim 2030 GHG threshold, the project cannot demonstrate substantial progress toward the City's long-term 2030 and 2050 GHG reduction targets at this time. Furthermore, because the project's GHG emissions would exceed the current 2020 GHG thresholds, the project may conflict with the current ECAP and therefore this impact is considered potentially significant and unavoidable.

The following mitigation measure would be applied to reduce project GHG emissions to the maximum extent feasible.

> Mitigation Measure GHG-2: Implement Mitigation Measure GHG-1. While implementation of Mitigation Measure GHG-1 would reduce the potential conflicts with policies, this impact would still be considered significant and unavoidable. (SU)

b. Energy Consumption. The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation.

Energy would be used in the forms of fossil fuels and electricity during construction and operation of the proposed project. During construction, SCA-AIR-2 would require the proper maintenance and tuning of diesel off-road equipment and limits idling time, which would encourage more efficient use of fuel. Additionally, it would be in the interests of the contractor to minimize costs by conserving fossil fuels and electricity.

CalEEMod was used to evaluate fossil fuel and electricity consumption during operation of the project. CalEEMod can be used to estimate average daily VMT for a range of vehicle trip types associated with project operations. CalEEMod can also be used to estimate annual electricity and natural gas consumption during project operations based on the gross square footage. The primary input data and assumptions used to estimate energy use expected under the project are summarized in Tables 4.5-4 and 4.5-5. A copy of the CalEEMod report, which summarizes the input parameters, assumptions, and findings, is included in Appendix F.

Based on the CalEEMod results, electricity consumption from the proposed warehouse and office space is summarized in Table 4.5-7.

Table 4.5-7 Energy Consumption from Building Operations

Project Development	Electricity (MWh/yr)
Office	111,400
Warehouse (Unrefrigerated)	1,776,800
Total	1,888,200

Notes: MWh/yr = megawatt hours per year; MBTU/yr = million British Thermal Units per year.
Source: Baseline Environmental Consulting, 2019.

CalEEMod and the California's Mobile Source Emissions Factor (EMFAC) 2014 model were used to estimate mobile energy consumption. Information on vehicle trips, trip lengths, and vehicle mix was obtained from CalEEMod, and information on fuel economy and type and amount of fuel used for each vehicle category was obtained from EMFAC 2014. Total fuel consumption was calculated by summing the fuel consumption for each vehicle category. The estimated daily rates of gasoline, diesel, and electricity consumption by vehicles are summarized in Table 4.5-8.

Table 4.5-8 Energy Consumption from Vehicles

Proposed Development	Gasoline (gallons/day)	Diesel (gallons/day)	Electricity (kWhr/day)
Office	17	<1	3
Warehouse (Unrefrigerated)	158	328	23
Total	176	328	26

Notes: kWh/day = kilowatt hours per day.
Source: Baseline Environmental Consulting, 2019.

As described above, the estimated energy consumption from building operations and vehicles would be further reduced with implementation of SCA-GHG-1: Green Building Requirements (#87), SCA-AIR-5: Truck-Related Risk Reduction Measures (Toxic Air Contaminants) (#26), and Mitigation Measure GHG-1. The warehouse will be located in an urban area with close proximity to airports and the Port of Oakland seaport which will allow a more efficient movement of goods compared to locating a warehouse in a suburban or more remote area, and will help to reduce regional VMT and associated fuel consumption. Therefore, the proposed project would not result in energy resources being used in a wasteful, inefficient, or unnecessary manner and the project's impact related to energy use would be less than significant.

c. Plans for Renewable Energy and Energy Efficiency. The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The project would be subject to energy efficiency requirements under the Title 24 Building Efficiency Standards and CALGreen Code. The project may also be subject to additional energy efficiency measures defined under the next ECAP update to be adopted in 2020. Operation of

the project would not interfere with the current RPS program requirements to increase the procurement from eligible renewable energy resources to 33 percent by 2020 and 60 percent by 2030. Mitigation Measure GHG-1 identifies the purchase of carbon-free energy from sources such as renewable energy as a recommendation. Therefore, the project could provide beneficial support to existing renewable energy programs. Thus, the project would not conflict with any state or local plans for renewable energy or energy efficiency and this impact is less than significant.

4. Cumulative Impacts

As discussed above, GHG and energy impacts are, by their nature, cumulative impacts because one project by itself cannot significantly contribute to or cause significant environmental effects. Therefore, because the project would have significant and unavoidable impacts related to the generation of GHG emissions and conflicts with policies designed to reduce GHG emissions, it would also make a considerable contribution to a cumulative impact as stated below.

Impact GHG-3: Project construction and operation would generate GHG emissions and would contribute to a significant and unavoidable cumulative impact. (S)

Mitigation Measure GHG-3: Implement Mitigation Measure GHG-1. While implementation of this mitigation measure would reduce the potential conflicts with policies, this cumulative impact would still be considered significant and unavoidable. (SU)

4.6 NOISE AND GROUNDBORNE VIBRATION

This section analyzes potential impacts on the ambient noise environment that could occur as a result of the construction and operation of the proposed project and the San Leandro Street access variant. This section describes the environmental and regulatory setting of the project site as well as the basics of environmental acoustics, including definitions of terms commonly used in noise analyses. Potential impacts are discussed and evaluated, and Standard Conditions of Approval (SCAs) and/or appropriate mitigation measures are identified, as necessary.

A. Setting

1. Environmental Setting

a. Noise and Vibration Terminology. The following sub-sections provide general information about noise and vibration to provide a context for the remaining section.

Noise. Noise is commonly defined as unwanted sound that annoys or disturbs people and that can have an adverse psychological or physiological effect on human health. Sound is measured in units of decibels (dB) on a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but cannot accurately describe sound as perceived by the human ear, which is capable only of hearing sound within a limited frequency range. Thus, to obtain a single number that better characterizes the noise level perceived by a human ear, a decibel scale called A weighting (dBA) is typically used. On this scale, the low and high frequencies are given less weight than the middle frequencies. Decibels and other technical terms are defined in Table 4.6-1. Typical A-weighted noise levels at specific distances are shown for different noise sources in Table 4.6-2.

In an unconfined space, such as outdoors, noise attenuates with distance. Noise levels at a known distance from point sources are reduced by 6 dBA for every doubling of that distance for hard surfaces (e.g., cement or asphalt) and by 7.5 dBA for every doubling of distance for soft surfaces (e.g., undeveloped or vegetation).[1] Noise levels at a known distance from linear sources (e.g., roads, highways, and railroads) are reduced by 3 dBA for every doubling of the distance for hard surfaces and 4.5 dBA for every doubling of distance for soft surfaces. Greater decreases in noise levels can result from the presence of intervening structures or buffers.

[1] California Department of Transportation (Caltrans), 1998. Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol.

Table 4.6-1 Definition of Acoustical Terms

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency resp7onse of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period. For this CEQA evaluation, L_{eq} refers to a 1-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources: Charles M. Salter Associates, Inc. 1998. Acoustics – Architecture, Engineering, the Environment. William Stout Publishers. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual. FTA Report No.0123. September.

Table 4.6-2 Typical Sound Levels Measured in the Environment and Industry

Noise Source (Distance in Feet)	A-Weighted Sound Level
Jet Aircraft (200)	112
Subway Train (30)	100
Truck/Bus (50)	85
Vacuum Cleaner (10)	70
Automobile (50)	65
Normal Conversation (3)	65
Whisper (3)	42

Source: Charles M. Salter Associates Inc. 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people:[2]

- A change of 1 dBA cannot typically be perceived except in carefully controlled laboratory experiments; A 3-dBA change is considered a just-perceivable difference;
- A minimum of 5-dBA change would occur before any noticeable change in community response is expected; and
- A 10-dBA change is subjectively perceived as approximately a doubling or halving in loudness.

Because sound pressure levels are based on a logarithmic scale, they cannot be simply added or subtracted. For instance, if one noise source emits a sound level of 90 dBA and a second source is placed beside the first and also emits a sound level of 90 dBA, the combined sound level is 93 dBA, not 180 dBA. When the difference between two noise levels is 10 dBA or more, the amount to be added to the higher noise level is zero. In such cases, no adjustment factor is needed because adding in the contribution of the lower noise source makes no perceptible difference in what people can hear or measure. For example, if one noise source generates a noise level of 95 dBA and another noise source is added that generates a noise level of 80 dBA, the higher noise source dominates and the combined noise level will be 95 dBA.

Vibration. Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Several different methods are used to quantify vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors to vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment. Vibration amplitudes are usually expressed as either PPV or as RMS velocity. PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. Thus, RMS is more appropriate for evaluating human response to vibration. PPV and RMS are normally described in units of inches per second (in/sec), and RMS is also often described in VdB.

The local noise environment in the vicinity of the project site is described below.

[2] Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

Surrounding Receptors. The surrounding land uses are shown on Figure 4.6-1. Noise-sensitive receptors include residences, schools, churches, hospitals, elderly-care facilities, hotels, libraries, and certain types of passive recreational open space.[3,4] The nearest sensitive receptors to the project site are: (1) residences located adjacent to the northwestern border of the project site (A on Figure 4.6-1), (2) residences located approximately 100 feet northeast of the project site across International Boulevard (B on Figure 4.6-1), and (3) a church located approximately 140 feet east of the project site across International Boulevard (C on Figure 4.6-1). Commercial and industrial land uses are not considered sensitive receptors, but are still considered in this analysis because noise limits at commercial and industrial land uses are specified in the City of Oakland Construction Noise Standards). Commercial land uses are located adjacent to the northwestern border of the project site (D on Figure 4.6-1). Industrial land uses are located approximately 15 feet from the southeastern border of the project site (E on Figure 4.6-1) and approximately 190 feet west of the project site across San Leandro Street (F on Figure 4.6-1).

Ambient Noise Environment. The primary sources of noise in the vicinity of the project site are traffic on I-880, traffic along International Boulevard, elevated Bay Area Rapid Transit (BART) trains, and Union Pacific trains. Based on the roadway noise contours and the railroad/BART noise contours in the City of Oakland General Plan, combined noise levels (both roadways and railroad/BART) range from 63 to 73 dBA L_{dn} at the project site and in its vicinity.[5,6] Generally, during the peak traffic hour under normal traffic conditions, L_{dn} is within plus or minus 2 dBA of the L_{eq}.[7] Therefore, the existing AM and PM peak hour traffic noise levels range from approximately 61-75 dBA L_{eq}.

The local noise environment was further characterized during a noise monitoring survey. On January 25 2019, Baseline staff measured short-term (15-minute) noise levels at five locations in the vicinity of the project site to characterize the ambient noise levels during the AM peak period. A Casella cel-633C2 noise meter was used for the noise level measurements. The meter was calibrated before the measurements to ensure accuracy. The measurement locations are shown on Figure 4.6-1. The numerical summaries of the ambient noise level measurements are provided in Table 4.6-3.

[3] A passive recreation area is generally an undeveloped space or environmentally sensitive area.

[4] City of Oakland, 2005. City of Oakland General Plan, Noise Element, March.

[5] Ibid.

[6] The City of Oakland General Plan notes that existing traffic noise levels are not expected to change substantially over the 20-year period between 2005 and 2025 (i.e., changes in noise levels would not be distinguishable) given the minor changes expected to occur in traffic levels. Therefore, existing noise levels at the project site and its vicinity from traffic along the surrounding streets are assumed to be the same as what is indicated in the 2025 roadway noise contours, which range from 60-70 dBA L_{dn}. Railroad/BART noise range from 60-70 dBA L_{dn} at the project site.

[7] Caltrans, 1998. Op. cit.

Legend

Project Site

ST-1 Noise Monitoring Locaon

Sensiv e Receptors

Residences (A and B)

Church (C)

Non-Sensiv e Land Uses

Commercial Land Uses (D)

Industrial Land Uses (E and F)

Figure 4.6-1

Noise Monitoring Locations

0 450 Feet

BASELINE ENVIRONMENTAL CONSULTING

Table 4.6-3 Statistical Summary of Ambient Noise Measurements

Location ID and Description	Measurement Duration	A-Weighted Noise Level, dBA			Primary Noise Sources
		L_{eq}	L_{max}	L_{min}	
ST-1: residential area facing 54th Avenue, northwest of the project site, near San Leandro Street	15 minutes	66.9	84.9	45.7	Traffic on 54th Avenue, San Leandro Street, and BART trains
ST-2: residential area facing 54th Avenue, northwest of the project site, near International Boulevard	15 minutes	56.8	72.9	45.6	Traffic on 54th Avenue and International Boulevard
ST-3: residential uses on International Boulevard	15 minutes	70.3	77.5	53.7	Traffic on International Boulevard and nearby construction activity
ST-4: church at 56th Avenue and International Boulevard	15 minutes	62.9	74.7	49.7	Traffic on International Boulevard and nearby construction activity
ST-5: residential area facing 54th Avenue at E 12th Street, northwest of the project site	15 minutes	63.2	81.6	45.8	Traffic on 54th Avenue, E.12th Street, and BART trains

Source: Baseline Environmental Consulting, 2019. See Appendix G for field notes.

As indicated in Table 4.6-3, the noise level at measurement location ST-2 was measured at 56.8 dBA L_{eq}, which is lower than the estimates from the Oakland General Plan noise contour results of 61 - 75 dBA L_{eq}, indicating potentially lower ambient noise levels in the residential area located northwest of the project site. However, noise levels at the other four locations range from 62.9 to 70.3 dBA L_{eq}, which are within the General Plan range of 61-75 dBA L_{eq}, indicating that the measurements are generally consistent with the noise contour results. In addition, ambient noise levels are generally higher when locations are closer to International Boulevard and BART. The highest noise measurement (70.3 dBA L_{eq}) was taken at ST-3 which is approximately 50 feet away from the centerline of International Boulevard. The second highest noise level was measured at ST-1, which is the closest location to the BART line.

2. Regulatory Setting

In California, noise is primarily regulated at the local level, through the implementation of general plan policies and local noise ordinances, and the State provides guidance for the preparation of general plan noise elements. The purpose of a local general plan is to identify the general principles intended to guide land use and development, and the purpose of the ordinances is to specify the standards and requirements for implementing the principles of the general plan.

a. State Regulations. The California Noise Act and the applicable sections of the California Building Code are summarized below.

California Noise Control Act. Sections 46000 to 46080 of the California Health and Safety Code codify the California Noise Control Act of 1973. This act established the Office of Noise Control under the California Department of Health Services. It requires that the Office of Noise Control adopt, in coordination with the Office of Planning and Research, guidelines for the preparation and content of noise elements for general plans. The most recent guidelines are contained in the California Office of Planning and Research's General Plan Guidelines.[8] The document provides land use compatibility guidelines for cities and counties to use in general plans to reduce conflicts between land use and noise. The City has adopted a modified version of the State's land use compatibility guidelines, as discussed below.

California Building Standards Code. The 2016 California Building Standards Code specifies interior noise levels for nonresidential uses during operation. The 2016 California Building Standards Code specifies that buildings containing non-residential uses (e.g., retail spaces and offices) that are exposed to exterior noise levels at or above 65 dBA L_{eq} or CNEL shall maintain interior noise level below 50 dBA L_{eq} in occupied areas during any hour of operation.[9] The buildings are required to comply with this interior sound level by either a prescriptive or a performance method. A prescriptive method requires the employment of building assemblies and components with appropriate Sound Transmission Class (STC) values and Outdoor-Indoor Sound Transmissions Class (OITC) values. A performance method requires an acoustical analysis documenting compliance with this interior sound level to be prepared by personnel approved by the architect or engineer of record before the building is built.[10]

b. City of Oakland. The following section summarizes relevant noise policies and standards from the General Plan, Noise Ordinances, and SCAs.

General Plan. The Noise Element of the City of Oakland General Plan contains the following noise policies and action items that are applicable to the proposed project and the San Leandro Street variant:[11]

Policy 1: Ensure the compatibility of existing and, especially, of proposed development projects not only with neighboring land uses but also with their surrounding noise environment.

Action 1.1: Use the noise-land use compatibility matrix (Figure 6 of the Noise Element [Table 4.6-4 below]) in conjunction with the noise contour maps (especially for roadway traffic) to evaluate the acceptability of residential and other proposed land uses and also the need for any mitigation or abatement measures to achieve the desired degree of acceptability.

[8] California Office of Planning and Research, 2017. State of California General Plan Guidelines.
[9] California Code of Regulations, Title 24, Part 11, Section 5.507.
[10] California Code of Regulations, Title 24, Part 2, Vol. 1, Section 1207.4.
[11] City of Oakland, 2005. Op. cit.

Action 1.2: Continue using the City's zoning regulations and permit processes to limit the hours of operation of noise-producing activities which create conflicts with residential uses and to attach noise-abatement requirements to such activities.

Policy 2: Protect the noise environment by controlling the generation of noise by both stationary and mobile noise sources.

Action 2.2: As resources permit, increase enforcement of noise-related complaints and also of vehicle speed limits and of operational noise from cars, trucks and motorcycles.

Policy 3: Reduce the community's exposure to noise by minimizing the noise levels that are received by Oakland residents and others in the City. (This policy addresses the reception of noise whereas Policy 2 addresses the generation of noise.)

Action 3.1: Continue to use the building-permit application process to enforce the California Noise Insulation Standards regulating the maximum allowable interior noise level in new multi-unit buildings.

The Land Use and Transportation Element of the City of Oakland General Plan contains the following noise policies that are applicable to the proposed project and the San Leandro Street variant:

Policy N3.9: Orienting Residential Development. Residential developments should be encouraged to face the street and to orient their units to desirable sunlight and views, while avoiding unreasonably blocking sunlight and views for neighboring buildings, respecting the privacy needs of residents of the development and surrounding properties, providing for sufficient conveniently located on-site open space, and avoiding undue noise exposure.

Policy N5.2: Buffering residential areas. Residential areas should be buffered and reinforced from conflicting uses through the establishment of performance-based regulations, the removal of non-conforming uses, and other tools.

Table 4.6-4 Oakland General Plan Noise Land Use Compatibility Matrix

Land Use Category	Community Noise Exposure in Decibels (L_{dn} or CNEL, dB)						
	50	55	60	65	70	75	80
Residential							
Transient Lodging – Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	NORMALLY ACCEPTABLE Development may occur without an analysis of potential noise impacts to the proposed development (though it might still be necessary to analyze noise impacts that the project might have on its surroundings).		NORMALLY UNACCEPTABLE Development should generally de discouraged; it may be undertaken only if a detailed analysis of the noise-reduction requirements is conducted, and if highly effective noise insulation, mitigation or abatement features are included in the design.
	CONDITIONALLY ACCEPTABLE Development should be undertaken only after an analysis of noise-reduction requirements is conducted, and if necessary noise-mitigating features are included in the design. Conventional construction will usually suffice as long as it incorporates air conditioning or forced-air-supply systems, though it will likely require that project occupants maintain their windows closed.		CLEARLY UNACCEPTABLE Development should not be undertaken.

Source: City of Oakland, 2005. City of Oakland General Plan, Noise Element, Figure 6, March.

Noise Ordinances. Chapter 17.120.050 of the Municipal Code establishes performance standards to control dangerous or objectionable environmental effects of noise. The operational noise level standards for residential and commercial zones are presented in Table 4.6-5. The construction and demolition noise level standards for residential, commercial/industrial land uses are presented in Table 4.6-6. Noise from mechanical heating, ventilation, and air conditioning (HVAC) systems is prohibited from exceeding the nighttime noise levels presented in Table 4.6-5, and the systems are required to be housed within an enclosure if located within 200 feet of a residential zone. Chapter 17.120.060 prohibits activities from generating vibration that is perceptible without instruments by the average person at or beyond the lot line of the lot containing such activities. Vibration generated by motor vehicles, trains, and temporary construction or demolition work is exempt from this standard.

Table 4.6-5 City of Oakland Operational Noise Standards at Receiving Property Line, dBA

Receiving Land Use	Cumulative Number of Minutes in a 1-Hour Period	Maximum Allowable Noise Level (dBA)[a,b]	
		Daytime 7:00 a.m. to 10:00 p.m.	Nighttime 10:00 p.m. to 7:00 a.m.
Residential and Civic[c]	20	60	45
	10	65	50
	5	70	55
	1	75	60
	0 (L_{max}[d])	80	65
		Anytime	
Commercial	20	65	
	10	70	
	5	75	
	1	80	
	0 (L_{max}[d])	85	
Industrial	20	70	
	10	75	
	5	80	
	1	85	
	0 (L_{max}[d])	90	

[a] These standards are reduced by 5 dBA for simple tone noise, noise consisting primarily of speech or music, or recurring impact noise.
[b] If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level.
[c] Legal residences, schools and childcare facilities, health care or nursing home, public open space, or similarly sensitive land uses.
[d] L_{max} = maximum instantaneous noise level.
Source: City of Oakland Municipal Code Section 17.120.050 Noise.

Table 4.6-6 City of Oakland Construction Noise Standards at Receiving Property Line, dBA

	Daily 7:00 a.m. to 7:00 p.m.	Weekends 9:00 a.m. to 8:00 p.m.
Short-Term Operation[a]		
Residential	80	65
Commercial, Industrial	85	70
Long-Term Operation[b]		
Residential	65	55
Commercial, Industrial	70	60

Notes: If the ambient noise level exceeds these standards, the standard shall be adjusted to equal the ambient noise level. Nighttime noise levels from construction and demolition between the hours of 7:00 p.m. and 7:00 a.m. on weekdays and between 8:00 p.m. and 9:00 a.m. on weekends and federal holidays are prohibited from exceeding the applicable nighttime operational noise level standards (see Table 4.6-5).
[a] Short-term construction or demolition operation is less than 10 days.
[b] Long-term construction or demolition operation is 10 days or more.
Source: City of Oakland Municipal Code Section 17.120.050 Noise.

Chapter 8.18.010 of the Municipal Code defines nuisance noises and establishes noise enforcement procedures and penalties for excessive and annoying noises. Noise that conflicts with the performance standards established in Chapter 17.120.050 is considered a nuisance noise. Chapter 8.18.020 prohibits noises that would disturb the peace and comfort of any person from between the hours of 9:00 p.m. and 7:00 a.m. Additionally, the following construction noise control measures are required:

(1) All construction equipment powered by internal combustion engines shall be properly muffled and maintained.

(2) Unnecessary idling of internal combustion engines is prohibited.

(3) All stationery noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.

(4) Quiet construction equipment, particularly air compressors, are to be selected whenever possible.

(5) Use of pile drivers and jack hammers shall be prohibited on Sundays and holidays, except for emergencies and as approved in advance by the Building Official.

c. Standard Conditions of Approval. The City's SCAs[12] that are relevant to noise and vibration are listed below. The SCAs are adopted as requirements for all projects approved within the City of Oakland.

[12] City of Oakland Department of Planning and Building Bureau of Planning. Standard Conditions of Approval. Adopted by City Council on November 3, 2008 (Ordinance No. 12899 C.M.S.), revised May 1, 2018.

SCA-NOI-1: Construction Days/Hours (#62)
Requirement: The project applicant shall comply with the following restrictions concerning construction days and hours:

a. Construction activities are limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday, except that pier drilling and/or other extreme noise generating activities greater than 90 dBA shall be limited to between 8:00 a.m. and 4:00 p.m.
b. Construction activities are limited to between 9:00 a.m. and 5:00 p.m. on Saturday. In residential zones and within 300 feet of a residential zone, construction activities are allowed from 9:00 a.m. to 5:00 p.m. only within the interior of the building with the doors and windows closed. No pier drilling or other extreme noise generating activities greater than 90 dBA are allowed on Saturday.
c. No construction is allowed on Sunday or federal holidays.

Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area.

Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the City, with criteria including the urgency/emergency nature of the work, the proximity of residential or other sensitive uses, and a consideration of nearby residents'/occupants' preferences. The project applicant shall notify property owners and occupants located within 300 feet at least 14 calendar days prior to construction activity proposed outside of the above days/hours. When submitting a request to the City to allow construction activity outside of the above days/hours, the project applicant shall submit information concerning the type and duration of proposed construction activity and the draft public notice for City review and approval prior to distribution of the public notice.
When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-NOI-2: Construction Noise (#63)
Requirement: The project applicant shall implement noise reduction measures to reduce noise impacts due to construction. Noise reduction measures include, but are not limited to, the following:

a. Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible.
b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
c. Applicant shall use temporary power poles instead of generators where feasible.
d. Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City to provide equivalent noise reduction.
e. The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-NOI-3: Extreme Construction Noise (#64)

a. Construction Noise Management Plan Required

Requirement: Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following:

i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
ii. Implement "quiet" pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;
iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and
v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

b. Public Notification Required

Requirement: The project applicant shall notify property owners and occupants located within 300 feet of the construction activities at least 14 calendar days prior to commencing extreme noise generating activities. Prior to providing the notice, the project applicant shall submit to the City for review and approval the proposed type and duration of extreme noise generating activities and the proposed public notice. The public notice shall provide the estimated start and end dates of the extreme noise generating activities and describe noise attenuation measures to be implemented.
When Required: During construction
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

SCA-NOI-4: Construction Noise Complaints (#66)

Requirement: The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include:

a. Designation of an on-site construction complaint and enforcement manager for the project;
b. A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit;
c. Protocols for receiving, responding to, and tracking received complaints; and

d. Maintenance of a complaint log that records received complaints and how complaints were addressed, which shall be submitted to the City for review upon the City's request.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

SCA-NOI-5: Exposure to Community Noise (#67)
Requirement: The project applicant shall submit a Noise Reduction Plan prepared by a qualified acoustical engineer for City review and approval that contains noise reduction measures (e.g., sound-rated window, wall, and door assemblies) to achieve an acceptable interior noise level in accordance with the land use compatibility guidelines of the Noise Element of the Oakland General Plan. The applicant shall implement the approved Plan during construction. To the maximum extent practicable, interior noise levels shall not exceed the following:

a. 45 dBA: Residential activities, civic activities, hotels
b. 50 dBA: Administrative offices; group assembly activities
c. 55 dBA: Commercial activities
d. 65 dBA: Industrial activities

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-NOI-6: Operational Noise (#68)
Applicable To: All projects.
Requirement: Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.
When Required: Ongoing
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-NOI-7 is applicable to all projects involving construction that includes the use of heavy off-road equipment to perform earthwork in close proximity to adjacent properties that contain buildings near the adjoining property line or adjacent to vibration sensitive activities where vibration could substantially interfere with normal operations.

SCA-NOI-7: Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities (#70)
Requirement: The project applicant shall submit a Vibration Analysis prepared by an acoustical and/or structural engineer or other appropriate qualified professional for City review and approval that establishes pre-construction baseline conditions and threshold levels of vibration that could damage the structure and/or substantially interfere with activities located at [ENTER ADDRESS OF ADJACENT PROPERTY OR VIBRATION SENSITIVE ACTIVITY]. The Vibration Analysis shall identify design means and methods of construction that shall be utilized in order to not exceed the thresholds. The applicant shall implement the recommendations during construction.
When Required: Prior to construction
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

B. Impacts and Mitigation Measures

This section discusses potential impacts to the noise environment that could result from implementation of the proposed project and the San Leandro Street variant. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and the San Leandro Street variant and identifies mitigation measures to address these impacts, if needed.

1. Criteria of Significance

Implementation of the proposed project and the San Leandro Street variant would have a potentially significant impact if it would:

a. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding construction noise (Table 4.6-6), except if an acoustical analysis is performed that identifies recommended measures to reduce potential impacts.[13] During the hours of 7:00 p.m. to 7:00 a.m. on weekdays and 8:00 p.m. to 9:00 a.m. on weekends and federal holidays, noise levels received by any land use from construction or demolition shall not exceed the applicable nighttime operational noise level standard (Table 4.6-5);

b. Generate noise in violation of the City of Oakland nuisance standards (Oakland Municipal Code Section 8.18.020) regarding persistent construction-related noise;

c. Generate noise in violation of the City of Oakland Noise Ordinance (Oakland Planning Code Section 17.120.050) regarding operational noise;

d. Generate noise resulting in a 5 dBA permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or, if under a cumulative scenario where the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the project vicinity without the project (i.e., the cumulative condition including the project compared to the existing conditions) and a 3 dBA permanent increase is attributable to the project (i.e., the cumulative condition including the project compared to the cumulative baseline condition without the project).

e. Expose persons to interior L_{dn} or CNEL greater than 45 dBA for multi- family dwellings, hotels, motels, dormitories and long-term care facilities (and may be extended by local

[13] The acoustical analysis must identify, at a minimum, (a) the types of construction equipment expected to be used and the noise levels typically associated with the construction equipment and (b) the surrounding land uses including any sensitive land uses (e.g., schools and childcare facilities, health care and nursing homes, public open space). If sensitive land uses are present, the acoustical analysis must recommend measures to reduce potential impacts.

legislative action to include single-family dwellings) per California Noise Insulation Standards (CCR Part 2, Title 24);

f. Expose the project to community noise in conflict with the land use compatibility guidelines of the City of Oakland General Plan (Table 4.6-4) after incorporation of all applicable Standard Conditions of Approval;[14]

g. Expose persons to or generate noise levels in excess of applicable standards established by a regulatory agency (e.g., occupational noise standards of the Occupational Safety and Health Administration [OSHA]);

h. During either project construction or project operation expose persons to or generate groundborne vibration that exceeds the criteria established by the Federal Transit Administration (FTA);[15]

i. Be located within an airport land use plan and would expose people residing or working in the project area to excessive noise levels; or

j. Be located within the vicinity of a private airstrip, and would expose people residing or working in the project area to excessive noise levels.

Outside of a laboratory, a 3 dBA change is considered a just-perceivable difference. Therefore, 3 dBA is used to determine if the project-related noise increases, that include both vehicle trips and project operations, are cumulatively considerable.

The criteria above are from the City's CEQA Thresholds of Significance Guidelines, which are intended to implement and supplement provisions in the CEQA Guidelines for determining the significance of environmental effects, including sections 15064, 15064.4, 15064.5, 15064.7, 15065, 15382, and Appendix G, and form the basis of the City's Initial Study and Environmental Review Checklist. Note that the California Natural Resources Agency adopted changes to the significance criteria for noise and vibration in Appendix G on December 28, 2018.[16] As part of the adopted revisions, two previously used criteria related to permanent and temporary ambient noise levels were combined with the criteria related generally to acceptable local noise levels.

[14] The evaluation of land use compatibility should consider the following factors: type of noise source; the sensitivity of the noise receptor; the noise reduction likely to be provided by structures; the degree to which the noise source may interfere with speech, sleep or other activities characteristic of the land use; seasonal variations in noise source levels; existing outdoor ambient levels; general societal attitudes towards the noise source; prior history of the noise source; and tonal characteristics of the noise source. To the extent that any of these factors can be evaluated, the measured or computed noise exposure values may be adjusted in order to more accurately assess local sentiments towards acceptable noise exposure.

[15] The FTA criteria were developed to apply to transit-related groundborne vibration. However, these criteria should be applied to transit-related and non-transit-related sources of vibration.

[16] California Natural Resources Agency, 2019. CEQA: The California Environmental Quality Act. Available at: http://resources.ca.gov/ceqa/, accessed June 25, 2019.

Other than that, there are no other substantial changes and additions to the Appendix G questions. Because the City's CEQA Thresholds of Significance Guidelines includes all the significance criteria for noise and vibration in Appendix G updated on December 28, 2018 and because these criteria are more specific to the City, this EIR evaluates noise and vibration impacts according to the City's CEQA Thresholds of Significance Guidelines.

2. Project Impacts

a. Project Noise. The following discussion addresses significance criteria a, b, c, and d. The proposed project and the San Leandro Street variant may generate noise during the construction and operational phases that could violate the City of Oakland Noise Ordinance or municipal codes as discussed below.

Construction Period Noise. The primary noise impacts from construction of the proposed project and the San Leandro Street variant would occur from the noise generated by the operation of heavy construction equipment on the project site. Secondary sources of noise during construction include increased worker's personal vehicle trips and truck trips for export of materials from and import of materials to the project site.

Construction of the proposed project and the San Leandro Street variant would involve demolition (includes demolition of existing buildings, pavement, landscaping, walls and fencing), remediation (includes removal and remediation of contaminated materials), grading, building construction, additional site improvements (paving, utility connections, landscaping), and construction of the vapor intrusion mitigation system (VIMS). Construction is expected to occur over a period of 22 months and would temporarily increase noise levels in the vicinity of the project site. Construction noise levels would vary from day to day, depending on the quantity and condition of the equipment being used, the types and duration of activity being performed, the distance between the noise source and the receptor, and the presence or absence of barriers, if any, between the noise source and receptor.

Table 4.6-7 shows the reference noise levels associated with various types of construction equipment that is proposed to be used by the project during each phase of construction. Based on the additive properties of noise, the combined noise levels of the two noisiest pieces of equipment are calculated to represent the noise impact from each phase of construction.[17]

Noise levels from each phase of construction at the nearest noise-sensitive receptors are shown in Table 4.6-8. As shown, all construction phases would generate exterior noise levels above the 65 dBA long-term construction noise standard (shown on Table 4.6-6) at the nearest residences and the church, and above the 70 dBA long-term construction noise standard at the nearest commercial and industrial land uses. Construction noise levels also have the potential

[17] A general assessment of construction noise should include the two noisiest pieces of equipment expected to be used in each construction phase. Source: Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

Table 4.6-7 Reference and Calculated Noise Levels from Project Construction Equipment

Construction Phase	Equipment	Reference Noise Levels at 50 Feet (L_{max})	Noise Levels from Two Noisiest Pieces at 50 Feet (dBA)
Demolition (includes demolition of existing buildings, pavement, landscaping, walls and fencing)	Aerial Lifts	85	91
	Excavators	85	
	Dozers	85	
	Loaders	80	
	Water Trucks	84	
	Concrete Breaking/Crushing/Screening Equipment	85	
	Dump Trucks	84	
	Saw Cutting Equipment	90	
	Backhoes	80	
Remediation (includes removal and remediation of contaminated materials)	Excavators	85	91
	Saw Cutting Equipment	90	
	Loaders	80	
	Water Trucks	84	
	Dump Trucks	84	
	Crane	85	
	Drill Rig	85	
	Trenchers	82	
	Aerial Lifts	85	
	Backhoes	80	
Grading	Dozers	85	88
	Loaders	80	
	Scrapers	85	
	Motor Grader	85	
	Excavators	85	
	Water Trucks	84	
	Blade and Tractor	84	
Building Construction	Excavators	85	88
	Trenchers	82	
	Loaders	80	
	Backhoes	80	
	Water Trucks	84	
	Dump Trucks	84	
	Concrete Trucks	85	
	Laser Screed	85	

Table 4.6-7 Reference and Calculated Noise Levels from Project Construction Equipment

Construction Phase	Equipment	Reference Noise Levels at 50 Feet (L_{max})	Noise Levels from Two Noisiest Pieces at 50 Feet (dBA)
	Concrete Finishing Equipment	85	
	Crane	85	
	Scissor Lifts	85	
	Trenchers	82	
	Tractors	84	
	Loaders	80	
Additional site improvements (includes paving, utility connections, landscaping)	Excavators	85	88
	Trenchers	82	
	Graders	85	
	Blades	84	
	Laser Screed	85	
	Concrete Trucks	85	
Vapor Intrusion Mitigation System	Dozers	85	88
	Skip Loader	80	
	Backhoes	80	
	Aerial Lifts	85	

Notes: Hand tools, material handlers and reach forklift are not considered heavy construction equipment and therefore are not included in the table.
Source: Brendan Kotler, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, September 13. U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook.

to exceed 90 dBA at the adjacent residences to the northwest of the project site. However, as noted in the Dust Control Plan presented in Appendix J, of the RDIP Addendum, tent structures would be utilized primarily for dust control to cover some of the work areas closet to the neighboring residences during excavation activities, which would help reduce noise levels during excavation. In addition, an approximately 16-foot tall construction fence would be installed along the northern boundary of the project site which also would act as a noise barrier for adjoining residences.[18] It also should be noted that a typical building façade with windows closed provides a noise level reduction of approximately 25 dBA,[19] and therefore interior noise levels at these receptors would be substantially lower than exterior noise levels.

Construction of the proposed project and the San Leandro Street variant would be subject to Oakland's Standard Conditions of Approval (SCA). The impacts from construction noise would

[18] EKI Environment and Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California. Appendix J, August 26, revised October 4.

[19] Charles M. Salter Associates Inc., 1998. Op. cit.

Table 4.6-8 Calculated Project Construction Noise Levels at Nearest Receptors (dBA)

Construction Phase	Construction Noise at Receptors (Land Use) without SCAs/with SCAs[a]					
	Residences/A[b]	Residences/B[b]	Church/C[b]	Commercial/D[b]	Industrial/E[b]	Industrial/F[b]
Demolition	**111/76**	**85/**50	**82/**47	**111/76**	**101/**66	**79/**44
Remediation	**111/76**	**85/**50	**82/**47	**111/76**	**101/**66	**79/**44
Grading	**108/73**	**82/**47	**79/**44	**108/73**	**98/**63	**76/**41
Building Construction	**108/73**	**82/**47	**79/**44	**108/73**	**98/**63	**76/**41
Paving	**108/73**	**82/**47	**79/**44	**108/73**	**98/**63	**76/**41
VIMS	**86/**51	**77**/42	**70**/35	**86**/51	**77**/42	**72/**38
Construction Noise Thresholds (Table 4.6-6)	65	65	65	70	70	70

Notes: **Bold** text indicates exceedance of thresholds.
Distances from the nearest receptors to activities associated with vapor intrusion mitigation system (VIMS) are calculated from the proposed warehouse footprint, while distances from the nearest receptors to activities associated with other phases are calculated from the site perimeter.
[a] A 35 dB reduction can be provided by the combination of the temporary noise barrier (the practical limit for the insertion loss of 20 dB), exhaust mufflers on pneumatic tools (which can lower noise levels by up to 10 dBA), and external jackets (which can lower noise levels by up to 5 dBA).
[b] The location of sensitive receptors and surrounding land uses are shown on Figure 4.6-1. Distances from receptors A, B, C, D, E, and F to activities associated with VIMS are 60 feet,170 feet, 380 feet, 60 feet, 170 feet, and 270 feet, respectively. Distances from receptors A, B, C, D, E, and F to activities associated with other phases are 5 feet, 100 feet, 140 feet, 5 feet, 15 feet, and 190 feet, respectively.
Source: Baseline Environmental Consulting, 2019.

be reduced by implementation of SCA-NOI-1: Construction Days/Hours (#62), SCA-NOI-2: Construction Noise (#63), SCA-NOI-3: Extreme Construction Noise (#64), and SCA-NOI-4: Construction Noise Complaints (#66). Noise reductions associated with application of the City's SCAs are also shown on Table 4.6-8.

SCA-NOI-1: Construction Days/Hours (#62) includes limits on the days and hours of construction to avoid generating noise when it would be most objectionable to neighboring residences. These limitations, which specify that construction activities would be limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday (among other restrictions), would prevent the disturbance of sleep for a majority of residents located near the project site. This SCA also requires if the construction contractor wants to extend these work hours that the request must be approved in advance by the City and requires property owners and occupants within 300 feet of the project site to be notified of such an extension.

SCA-NOI-2: Construction Noise (#63) requires all construction projects to implement basic noise reduction measures during construction. Because the construction of the proposed project and the San Leandro Street variant could generate noise levels greater than 90 dBA at the nearest receptors, SCA-NOI-3: Extreme Construction Noise (#64) would be triggered and

require that the project applicant prepare and implement a Construction Noise Management Plan that contains site-specific noise attenuation measures to reduce construction impacts associated with extreme noise generating activities.

- Best Available Noise Control Techniques. Best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) will be used for project equipment and trucks during construction wherever feasible. For example, exhaust mufflers on pneumatic tools can lower noise levels by up to about 10 dBA and external jackets can lower noise levels by up to about 5 dBA.
- Equipment Positioning. Construction equipment will be positioned as far away from noise-sensitive receptors as possible. For every doubling of the distance between a given receptor and construction equipment for hard surfaces, noise will be reduced by approximately 6 dBA.
- Monitoring. Monitoring the effectiveness of noise attenuation measures by taking noise measurements will ensure that the best practices being implemented are effective at reducing noise levels to acceptable levels.

Notification and Communication. Notification and open lines of communication with potentially affected nearby receptors is an effective way to manage construction-period noise. When property owners and occupants feel informed about a project's daily schedule and duration they are typically better able to accept potential noise-related inconvenience. All receptors located within 300 feet of the construction activities will be notified and informed about the project prior to commencing extreme noise generating activities.

The combination of the temporary noise barrier (the practical limit for a loss of 20 dB), exhaust mufflers on pneumatic tools (which can lower noise levels by up to 10 dBA), and external jackets (which can lower noise levels by up to 5 dBA) could provide noise reductions of up to 35 dBA. As shown in Table 4.6-8, noise reductions provided by SCA-NOI-3: Extreme Construction Noise (#64) would reduce the exterior noise levels at residences (B on Figure 4.6-1), the church (C on Figure 4.6-1), industrial land uses (E and F on Figure 4.6-1) to below the applicable construction noise thresholds.

Exterior noise levels at the adjacent residences (A on Figure 4.6-1) and commercial land uses (D on Figure 4.6-1) could be as high as 76 dBA and would exceed the applicable construction noise thresholds. However, it should be noted that the use of heavy construction equipment would occur at different locations across the site. Although the nearest boundary of the project site is located within 5 feet of the adjacent residential and commercial buildings, the furthest boundary of the project site is located more than 550 feet from these receptors. For every doubling of the distance between a given receptor and construction equipment for hard surfaces, noise will be reduced by approximately 6 dBA. Therefore, at a distance of 10 feet, construction noise would be reduced to 70 dBA and would not exceed the 70-dBA construction

noise threshold at the commercial receptors (D on Figure 4.6-1); and at a distance of 20 feet, construction noise would be reduced to 64 dBA and would not exceed the 65-dBA construction noise threshold at the residential receptors (A on Figure 4.6-1). Due to the size of the project site, the duration and frequency that heavy construction equipment would operate within 10 feet of the adjacent commercial receptors (D on Figure 4.6-1) and within 20 feet of the adjacent residences (A on Figure 4.6-1) would be limited on a given day and would not be expected to last more than a few days at a time.[20] Also, it should be noted that a typical building façade with windows closed provides a noise level reduction of approximately 25 dBA.[21] Therefore, interior noise levels at nearby receptors would be substantially lower than exterior noise levels.

SCA-NOI-4: Construction Noise Complaints (#66) provides additional measures to respond to and track construction noise complaints during construction to allow sources of potentially disruptive construction noise to be quickly controlled or eliminated. The proximity of the project site to sensitive receptors, and the type of construction equipment that would be used as part of the proposed project and the San Leandro Street variant, are similar to other projects in Oakland and other urban areas. Because the project site and its vicinity are part of an established, urbanized area, periodic exposure to construction-related noise and vibration are existing conditions. Implementation of SCA-NOI-1: Construction Days/Hours (#62), SCA-NOI-2: Construction Noise (#63), SCA-NOI-3: Extreme Construction Noise (#64), and SCA-NOI-4: Construction Noise Complaints (#66) would lessen the impacts of noise generated by construction to receptors in the vicinity of the project site and would require the preparation of Construction Noise Management Plan with site-specific noise attenuation measures. With implementation of the required SCAs, the impact of construction-generated project and variant noise on nearby receptors would be reduced to a less-than-significant level.

Worker's personal vehicles would enter and exit the project site from International Boulevard. Because this is a major roadway, exposure to high traffic flow is an existing condition. Based on the additive properties of noise, traffic volumes would be required to nearly double in order to substantially increase ambient noise levels associated with International Boulevard. The additional vehicle trips from worker's personal vehicles during construction or the project and variant would not double traffic volumes and, therefore, would not generate a perceptible increase in existing noise levels.

To access the site, trucks used during construction would exit I-880 onto 42nd Street, turn right onto International Boulevard, and turn right to enter the project site. To exit the site, trucks

[20] Amanda Monchamp, Attorney and Brendan Kotler, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, July 19, 2019. Estimated lengths of time that heavy equipment would be operating within 10 feet of adjacent commercial receptors include: half day of demolition of asphalt, half day of utility demolition, half day of grading, and half day of paving. Estimated lengths of time that heavy equipment would be operating within 20 feet of adjacent residences include: one week of building demolition, 2 days of demolition of asphalt, 2 days of demolition of concrete, 2 days of utility demolition, three weeks of contaminated soil excavation, 2 days of grading, one week of utilities installation, and two days of paving.

[21] Charles M. Salter Associates Inc., 1998. Op. cit.

would turn right onto International Boulevard, then right onto 66th Avenue (or possibly Hegenberger Road), before entering I-880. Because these are major roadways and the project site is surrounded by industrial uses, exposure to high traffic flow and truck traffic is an existing condition. In addition, construction of the proposed project and the San Leandro Street variant could generate up to 795 truck trips for demolition and debris removal over the course of 17 weeks, up to 297 truck trips for soil and concrete removal over 8 weeks, and up to 2,220 truck trips for clean backfill for excavations and landscaping over 9 weeks. This analyses assumes that there would be no overlap in truck trips for each of the phases. The demolition period truck trips would generate noise levels of up to approximately 46.4 dBA L_{eq} at 50 feet, the remediation period truck trips would generate noise levels of up to approximately 46.4 dBA L_{eq} at 50 feet, and the grading period truck trips would generate noise levels of up to approximately 54.2 dBA L_{eq} at 50 feet.[22] As discussed above, the ambient noise level at 50 feet from the centerline of International Boulevard was measured at 70.3 dBA L_{eq}, which is more than 10 dBA higher than estimated truck trip noise. When the difference between two sources of noise is 10 dBA or more, the higher noise source dominates and the lower noise source makes no perceptible difference in what people can hear or measure. Therefore, increased truck trips along local roadways during construction would not be a significant source of construction-generated noise.

Operation Period Noise. The primary operation period noise source would occur as a result of the increased vehicular and truck traffic on area roads associated with the warehouse use for both the proposed project and the San Leandro Street variant.

A project is considered to generate a significant increase in ambient traffic noise if it results in a 5 dBA permanent increase in noise levels in the vicinity of a project site.

For the proposed project, the assessment of AM and PM peak hour traffic volumes at four intersections in the vicinity of the project site indicates that the increase in traffic volumes would range from approximately 0 to 4.5 percent. The highest traffic volume increase of 4.5 percent would occur along International Boulevard between 55th Avenue and 56th Avenue during the AM peak period. The predicted existing and existing plus project traffic noise levels for this roadway segment are summarized in Table 4.6-9 below. Traffic noise is expected to increase by about 0.2 dBA along this roadway segment. As this segment would have the greatest predicted increase in project-related traffic, noise increases along other roadway segments affected by the proposed project would be less than 0.2 dBA. This level of noise is below the 5 dBA significance threshold for project-generated traffic noise. Consequently, implementation of the proposed project would not result in a significant increase in traffic noise along local area roadways.

[22] It is assumed that truck trips would be distributed evenly over each construction phase and an 8-hour work day. It is also assumed that there would be no overlap in truck trips associated with each construction phase.

Table 4.6-9 Existing and Existing Plus Project Peak-Hour Traffic Noise Levels for the Roadway Segment with Highest Increase, dBA L_{eq} at 50 Feet

Roadway Segment	Existing Traffic Noise Levels	Existing Plus Project Traffic Noise Levels	Estimated Increase in Noise
International Boulevard between 55th Avenue and 56th Avenue (AM peak period)	68	68.2	0.2

Note: Traffic noise model outputs are included in Appendix G. FHWA TNM Version 2.5 model was used for these results.
Source: Fehr & Peers, 2019 and Baseline Environmental Consulting, 2019.

For the San Leandro Street variant, this analysis takes a conservative approach and assumes that all project-generated heavy truck traffic would access the site to and from San Leandro Street access and all project-generated auto traffic would access the site from International Boulevard.

The assessment of AM and PM peak hour traffic volumes for the San Leandro Street variant indicates that the project would generate 16 truck trips during AM peak hour and 21 truck trips during PM peak hour at the San Leandro Street access. As shown in Table 4.6-10 below, with the ambient noise levels of approximately 66.9 dBA L_{eq} (using the measurement value at ST-1), truck traffic noise is expected to increase the ambient noise at the San Leandro Street access by up to about 0.7 dBA during PM peak hour.

Table 4.6-10 Variant Analysis - Existing and Existing Plus Project Peak-Hour Traffic Noise Levels for the Roadway Segment with Highest Increase, dBA L_{eq} at 50 Feet

Roadway Segment and Variant	Existing Traffic Noise Levels	Existing Plus Variant Traffic Noise Levels	Estimated Increase in Noise
International Boulevard between 55th Avenue and 56th Avenue (AM peak period)	68	68.2	0.2
San Leandro Street Access Variant	66.9	67.6	0.7

Note: Traffic noise model outputs are included in Appendix G. FHWA TNM Version 2.5 model was used for these results.
Source: Fehr & Peers, 2019 and Baseline Environmental Consulting, 2019.

The assessment of AM and PM peak hour traffic volumes at four intersections in the vicinity of the project site indicates that the increase in traffic volumes would range from approximately 0 to 3.7 percent. The highest auto traffic volume increase of 3.7 percent would occur along International Boulevard between 55th Avenue and 56th Avenue during the AM peak period. Auto traffic noise is expected to increase by about 0.2 dBA along this roadway segment. As this segment would have the greatest predicted increase in project-related traffic, noise increases along other roadway segments affected by the San Leandro Street variant would be less than 0.2 dBA. The highest increases of level of noise from truck traffic and auto traffic (0.7 dBA and 0.2 dBA) are both below the 5 dBA significance threshold for project-generated traffic noise.

Consequently, implementation of the San Leandro Street variant would not result in a significant increase in traffic noise along local area roadways.

The secondary operation period noise sources would occur as a result of the operation of the vapor intrusion mitigation system (VIMS) and the operation of the groundwater extraction and treatment system (GETS). VIMS would involve installation of a blower system on the building roof. However, it would be installed in the southwestern corner of the building, which would maximize the distance between the blower system and the adjoining noise-sensitive receptors. The use of a GETS is an existing condition. The proposed project and the San Leandro Street variant would relocate the GETS slightly to the west of its existing location, which would not expose more noise-sensitive receptors to the operation of the system. In addition, the proposed project and the San Leandro Street variant would be subject to SCA-NOI-6: Operational Noise (#68) that requires all operational noise to comply with the performance standards of chapter 17.120 of the Oakland Planning Code and Section 8.18 of the Oakland Municipal Code. Therefore, with the implementation of SCA-NOI-7: Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities (#70), the proposed project and the San Leandro Street variant would not violate the City of Oakland operational noise standards.

b. Exposure of Persons to Significant Noise.

The following discussion addresses significance criteria e, f, and g for project construction and operation period noise.

Construction Phase. Construction workers could be exposed to excessive noise from the heavy equipment used during construction. However, noise exposure of construction workers is regulated by the California Division of Occupations Safety and Health (Cal/OSHA). Title 8, Subchapter 7, Group 15, Article 105 of the California Code of Regulations (Control of Noise Exposure) sets noise exposure limits for workers, and requires employers who have workers that may be exposed to noise levels above these limits to establish a hearing conservation program, make hearing-protector-devices available, and keep records of employee noise exposure measurements. The construction contractors for the proposed project and the San Leandro Street variant would be subject to these regulations, and compliance with these Cal/OSHA regulations would ensure that the potential of construction workers to be exposed to excessive noise is less than significant.

Operational Phase. Noise contours in the City of Oakland General Plan indicate ambient noise ranges from 63 to 73 dBA L_{dn} at the project site and in its vicinity. According to the City of Oakland General Plan and shown on Table 4.6-4, noise levels between 50 to 70 dBA L_{dn} are considered “normally acceptable” and noise levels between 70 to 80 dBA L_{dn} are considered “conditionally acceptable” for industrial land uses.

The City of Oakland General Plan indicates that development within a "conditionally acceptable" environment requires an analysis of noise-reduction requirements, and if necessary, noise-mitigation features in the design.

Since ambient noise levels at the project site range up to 73 dBA L_{dn}, the proposed project and the San Leandro Street variant would be subject to SCA-NOI-5: Exposure to Community Noise (#67) that requires noise reduction to be incorporated into building design based upon the recommendations of a qualified acoustical engineer. Noise reduction measures must reduce interior noise levels to 65 dBA L_{dn} for industrial activities. A typical building façade with windows closed provides a noise level reduction of approximately 25 dBA,[23] and therefore conventional construction of the warehouse building will likely suffice. Sound Transmission Class (STC) rated windows, exterior doors, and exterior walls are also commonly used to control interior noise from exterior sources. The noise control measures are required to be submitted to the City of Oakland for review and approval prior to the issuance of a construction-related permit. Compliance with SCA-NOI-5: Exposure to Community Noise (#67) would therefore reduce the potential for future occupants of the proposed project and the San Leandro Street variant to be exposed to excessive or incompatible noise levels to a less-than-significant level.

d. Groundborne Vibration.

The following discussion addresses significance criteria h for project construction and operation period noise. Project and variant construction could expose persons to or generate groundborne vibration that could cause disturbance to nearby residents and/or damage to off-site buildings.

Construction Period. Construction activities can result in varying degrees of groundborne vibration, depending on the equipment, activity, and relative proximity to sensitive receptors.

Table 4.6-11 summarizes the Federal Transit Federation (FTA) vibration criteria to prevent disturbance of residences and buildings where people normally sleep adjacent to the project site. In this analysis, the "occasional events" criterion is applied for construction equipment. Table 4.6-12 summarizes the FTA vibration criteria to prevent damage to structures. The vibration criterion for engineered-concrete and masonry (no plaster) is selected to represent the building types adjacent to and near the project site.

The reference vibration levels at 25 feet away from the construction equipment that could be used at the project site are summarized in Table 4.6-13. Although the table provides one vibration level for each piece of equipment, it should be noted that there is considerable variation in reported ground vibration levels from construction activities, primarily due to variation in soil characteristics. Table 4.6-13 also shows the buffer distance that would be required to reduce vibration levels to below the FTA thresholds for disturbance and building

[23] Charles M. Salter Associates Inc., 1998. Op. cit.

Table 4.6-11 Vibration Criteria to Prevent Disturbance – RMS (Vdb)

Land Use Category	Frequent Events[a]	Occasional Events[b]	Infrequent Events[c]
Residences and buildings where people normally sleep	72	75	80

[a] More than 70 vibration events of the same kind per day or vibration generated by a long freight train.
[b] Between 30 and 70 vibration events of the same kind per day.
[c] Fewer than 30 vibration events of the same kind per day.
Source: Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual. FTA Report No.0123, September.

Table 4.6-12 Vibration Criteria to Prevent Damage to Structures

Building Category	PPV (in/sec)	RMS (VdB)
Reinforced-concrete, steel or timber (no plaster)	0.5	102
Engineered concrete and masonry (no plaster)	0.3	98
Non-engineered timber and masonry buildings	0.2	94
Buildings extremely susceptible to vibration damage	0.12	90

Source: Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual. FTA Report No.0123, September.

damage. For instance, if a large bulldozer is approximately 63 feet or more away from a given receptor, the vibration levels generated by the bulldozer would not have the potential to disturb that receptor.

Vibration Disturbance. Residential buildings to the northwest of the project site (A on Figure 4.6-1) are located within 63 feet from the project site boundary. Therefore, according to Table 4.6-13, the construction equipment would have the potential to disturb the residential receptors located to the northwest of the project site.

However, construction vibration is exempt from the standard indicated in Chapter 17.120.060 of City of Oakland's Municipal Code, and therefore, the vibration generated by construction would not have the potential to exceed any regulatory standards. Furthermore, the vibration would be temporary since the locations of grading, soil compaction, and other construction activities that would require the use of construction equipment with the potential to exceed the disturbance threshold (75 VdB) would vary over time across the site, and therefore the impacts of these activities on any given residence would not be expected to last more than a few days at a time. In addition, SCA-NOI-1: Construction Days/Hours (#62) limits construction activities to the hours between 7:00 a.m. and 7:00 p.m. Monday through Friday, and limits construction with the potential to generate extreme noise (which is often correlated with the potential to generate high vibration) to the hours between 8:00 a.m. and 4:00 p.m. Therefore, severe vibration would be restricted to normal daytime hours, thereby reducing the likelihood of disturbing residents (i.e.,

through interfering with sleep). For these reasons, the potential for construction generated vibration to disturb occupants of adjacent residential buildings is less than significant.

Table 4.6-13 Reference Source Levels for Construction Equipment and the Associated Buffer Distances Required to Prevent Exceedance of FTA Thresholds

Equipment	At 25 Feet		Required Buffer Distance from Source	
	PPV (in/sec)	RMS (VdB)	Building Damage Threshold, 0.3 PPV (feet)	Human Annoyance Threshold, 75 VdB (feet)
Large bulldozer	0.089	87	11	63
Hoe ram (for concrete breaking)	0.089	87	11	63
Drill rig	0.089	87	11	63
Loaded truck	0.076	86	10	58
Small bulldozer	0.003	58	1	7

Note: Based on vibration levels at 25 feet, the following propagation adjustment was applied to estimate buffer distance required to reduce vibration levels at a receptor to 0.3 PPV:
$PPV2 = PPV1 \times (D1/D2)^{1.5}$
Where: PPV1 is the reference vibration level at a specified distance.
PPV2 is the calculated vibration level.
D1 is the reference distance (in this case 25 feet).
D2 is the distance from the equipment to the receiver.
Based on vibration levels at 25 feet, the following propagation adjustment (FTA, 2018) was applied to estimate buffer distance required to reduce RMS vibration levels at a receptor to 75 VdB.
$RMS2 = RMS1 - 30 \log_{10} (D2/D1)$
Where: RMS1is the reference vibration level at a specified distance.
RMS2 is the calculated vibration level.
D1 is the reference distance (in this case 25 feet).
D2 is the distance from the equipment to the receiver.
Source: PPV and RMS vibration levels at 25 feet, building damage threshold, and human annoyance threshold are from the FTA (2018) Transit Noise and Vibration Impact Assessment.

Vibration Damage. Residential and commercial buildings to the northwest of the project site (A and D on Figure 4.6-1) are located within 11 feet from the project site boundary and remediation and construction activities would occur at the project site boundary. Therefore, as shown on Table 4.6-13, vibration from a large bulldozer (a version larger than a D5 dozer) and a hoe ram (for concrete breaking) could have the potential to damage adjacent residential and commercial buildings if it is operated within 11 feet from the off-site buildings; a loaded heavy truck could cause damage if operated within 10 feet of the buildings; and a small bulldozer could cause damage if operated within 1 foot of the buildings. A drill rig would be used during well destruction and protection at the central part of the project site, and therefore would not be operated within 11 feet from the off-site buildings.

Construction of the proposed project and the San Leandro Street variant would be subject to SCA-NOI-7: Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities (#70). SCA-NOI-7 requires design means and methods of construction to be included in a Vibration

Analysis that shall be utilized in order to not exceed the thresholds. Potential means and methods could involve the following restrictions to reduce potential vibration impacts to the adjacent buildings (i.e., the nearest residential and commercial buildings to the northwest of the project site along 54th Avenue located between San Leandro Street and International Boulevard, locations A and D on Figure 4.6-1):

- Within 11 feet from the adjacent buildings, the size of all bulldozers used during any construction phase activities could be limited to D5 dozers or smaller (i.e., those with horsepower (hp) less than 105 hp and operating weight less than 24,000 pounds);
- No loaded trucks would be allowed to operate within 10 feet of the adjacent buildings;
- No bulldozers of any size would be allowed to operate within 1 foot from the adjacent buildings;
- No concrete breaking equipment would be allowed to operate within 11 feet from the adjacent buildings;
- Should site conditions require the use of a bulldozer within 1 foot of the adjacent buildings or concrete breaking equipment required within 11 feet from the adjacent buildings, the project applicant could notify the City, identify appropriate measures to reduce vibration impacts and comply with any additional City recommendations.

With implementation of SCA-NOI-7: Vibration Impacts on Adjacent Structures or Vibration-Sensitive Activities (#70), the impact of construction-generated vibration related to the project and variant on the adjacent buildings would be reduced to a less-than-significant level.

Operation Period. After construction, a warehouse would occupy the project site and is not expected to generate vibration that would disturb persons or damage buildings.

e. Aircraft Noise. The following discussion addresses significance criteria i and j. The project site is not located within the vicinity of a private airstrip.[24] Therefore, the proposed project and the San Leandro Street variant would have no impact related to the exposure of people to excess noise levels from private airstrips.

Oakland International Airport is the closest airport to the project site, and is located approximately 2.5 miles to the southwest. The project site is not located within a public airport land use plan or within 2 miles of any other public use airport.[25] Therefore, the proposed project and the San Leandro Street variant would have no impact related to the exposure of people to excess noise levels from public use airports.

[24] Federal Aviation Administration (FAA). 2019. Airport Data and Contact Information. Effective: March 28, 2019. Database searched for both public-use and private-use facilities in Alameda County. Website: http://www.faa.gov/airports/airport_safety/airportdata_5010/, accessed April 18, 2019.

[25] Alameda County Community Development Agency. 2010, Oakland International Airport, Airport Land Use Compatibility Plan. December.

3. Cumulative Impacts

For noise and vibration, the geographic scope for assessing cumulative impacts is the vicinity of the project site. Noise and vibration dissipate with increased distance from the source and therefore, cumulative noise and vibration impacts would not be expected unless new sources of noise are located in close proximity to each other. The impacts from construction noise and vibration for the proposed project and the San Leandro Street variant would be reduced to less-than-significant levels with implementation of City's SCAs for construction noise and vibration. In the event that multiple construction projects occur in the vicinity of the project site, all projects would be subject to the same construction noise and vibration SCAs, thereby reducing potential cumulative construction noise and vibration impacts to a less-than-significant level.

During operation, a project is considered to contribute to a significant cumulative impact if: (1) the cumulative increase results in a 5 dBA permanent increase in ambient noise levels in the vicinity of a project site; and (2) 3 dBA of the cumulative increase is attributable to the proposed project.

For the proposed project, under a cumulative scenario, which considers traffic generated by past, present, and probable future projects, including the proposed project, the assessment of AM and PM peak hour traffic volumes at four intersections in the vicinity of the project site indicates the most impacted location (the one with the highest traffic noise increase) would occur along 54th Avenue between International Boulevard and E.16th Street during the PM peak period (Table 4.6-14). Traffic noise is expected to increase by about 3.7 dBA along this roadway segment. As this roadway segment has the greatest predicted increase in traffic volumes, traffic noise increases along other roadway segments would be less than 3.7 dB, and would below the 5 dBA significance threshold for cumulative impacts. Therefore, impacts related to a cumulative noise increase would be less than significant.

Table 4.6-14 Proposed Project Existing and Cumulative Plus Project Peak-Hour Traffic Noise Levels for the Roadway Segment with Highest Increase, dBA L_{eq} at 50 Feet

Roadway Segment	Existing Traffic Noise Levels	Cumulative Plus Project Traffic Noise Levels	Estimated Increase in Noise
54th Avenue between International Boulevard and E.16th Street (PM peak period)	56.4	60.1	3.7

Note: Traffic noise model outputs are included in Appendix G. FHWA TNM Version 2.5 model was used for these results.
Source: Fehr & Peers, 2019, Baseline Environmental Consulting, 2019.

For the San Leandro Street variant, this analysis assumes that all project-generated truck traffic would access the site to and from San Leandro Street and all project-generated auto traffic would access the site from International Boulevard.

Traffic volumes along San Leandro Street would increase by about 35 percent between now (existing condition) and 2040 (representing cumulative condition). Due to the additive properties of noise, traffic volumes would have to nearly double for a perceptible increase (i.e. 3 dBA) in noise levels to occur. Therefore, traffic increase along San Leandro Street of 35 percent is well below the 100 percent increase required for a 3 dBA change in noise levels to occur, which is below the 5 dBA significance threshold for cumulative impacts.

The assessment of AM and PM peak hour traffic volumes at four intersections in the vicinity of the project site indicates the most impacted location (the one with the highest traffic noise increase) would occur along 54th Avenue between International Boulevard and E.16th Street during the PM peak period (Table 4.6-15). Traffic noise is expected to increase by about 3.7 dBA along this roadway segment. As this roadway segment has the greatest predicted increase in traffic volumes, traffic noise increases along other roadway segments would be less than 3.7 dB, and would be below the 5 dBA significance threshold for cumulative impacts.

Table 4.6-15 San Leandro Street Variant Existing and Cumulative Plus Project Peak-Hour Traffic Noise Levels for the Roadway Segment with Highest Increase, dBA L_{eq} at 50 Feet

Roadway Segment	Existing Traffic Noise Levels	Cumulative Plus Variant Traffic Noise Levels	Estimated Increase in Noise
54th Avenue between International Boulevard and E.16th Street (PM peak period)	56.4	60.1	3.7

Note: Traffic noise model outputs are included in Appendix G. FHWA TNM Version 2.5 model was used for these results.
Source: Fehr & Peers, 2019, Baseline Environmental Consulting, 2019.

Under the cumulative scenario (which considers traffic generated by past, present, and probable future projects), the highest increases of level of noise from truck traffic and auto traffic (<3 dBA and 3.7 dBA) are both below the 5 dBA significance threshold for cumulative traffic noise. Therefore, impacts related to a traffic-related cumulative noise increase would be less than significant for the San Leandro Street variant.

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4.7 GEOLOGY, SOILS AND SEISMICITY

This section describes the soil, geologic and seismic environment in the vicinity of the project site; discusses the State and local regulations pertinent to soils, geology and seismicity; assesses the potential impacts related to soils, geology and seismicity that could result from implementation of the project or the San Leandro Street access variant; and identifies the City's SCAs, where appropriate, which address those impacts.

The evaluation in this section is based on information obtained from a 2018 Geotechnical Investigation (Geotechnical Investigation)[1] and geologic reports and maps from the United States Geological Survey (USGS) and California Geological Survey (CGS), among others.

A. Setting

The existing soil, geologic and seismic conditions at the project site and vicinity are discussed below.

1. Geologic Conditions

a. Topography. The project site is located within an urbanized area of Oakland. The project site is relatively flat and gently slopes toward the southwest. The existing ground surface elevation ranges from approximately 11 feet at the southwest end of the project site to approximately 25 feet at the northeast end of the project site.[2]

b. Regional and Site-Specific Geology. The project site is located within the Coast Ranges geomorphic province, a relatively geologically young and seismically active region.[3,4] The Coast Ranges extend from near the Oregon border to southern California. The only major break in the Coast Range mountains is the depression containing San Francisco Bay; the project site is located within this region. Based on USGS regional mapping of the San Francisco Bay region, the project site is underlain by Holocene alluvium.[5,6] The Geotechnical Investigation found that the project site is generally blanketed with up to 5 to 6 feet of undocumented fill (also known as non-engineered fill) material, and deeper non-engineered fill was encountered to a depth of about 18 feet in one boring in the southern portion of the project site. The non-engineered fill generally consists of loose well graded gravels and poorly graded sands, and soft to hard sandy lean clays, sandy silts and fat clay with sand. Native soils beneath the fill generally consist of stiff to hard lean clays with variable amounts of sand. Groundwater was encountered at depths

[1] Cornerstone Earth Group, 2018. Geotechnical Investigation, 5441 International Boulevard, Oakland, California, October 25.

[2] Ibid.

[3] California Geological Survey (CGS), 2002. California Geomorphic Provinces, Note 36.

[4] Norris, Robert M. and Robert W. Webb, 1976. Geology of California, 2nd Edition. J. Wiley & Sons, Inc.

[5] Graymer et al., 2006. Geologic Map of the San Francisco Bay Region.

[6] U.S. Geological Survey (USGS), 2019a. Available at: http://geomaps.wr.usgs.gov/sfgeo/geologic/downloads.html, accessed February 20, 2019.

of 8 and 12.5 feet in two geotechnical borings at the project site. The Geotechnical Investigation estimates that the high groundwater levels range from a depth of 5 feet at the south/southwest end of the project site to 10 feet at the north/northeast end of the project site.[7]

2. Seismic Conditions

The entire San Francisco Bay Area (Bay Area) is located within the San Andreas Fault Zone, a complex of active faults (i.e., active faults show evidence of fault rupture within the past 11,000 years). Numerous historic earthquakes have been generated in northern California by the San Andreas Fault Zone. This level of active seismicity results in relatively high seismic risk in the Bay Area.

The Working Group on California Earthquake Probabilities and the USGS have predicted a 6.4 percent probability of a Moment Magnitude (M_w)[8] 6.7 or greater earthquake on the Northern San Andreas Fault between 2014 and 2044, a 14.3 percent chance on the Hayward Fault, and a total probability of 72 percent that an earthquake of M_w 6.7 or greater will occur on one of the regional Bay Area faults during that time.[9]

a. Seismic, Soils and Geologic Hazards. Seismic, soils and geologic hazards include surface rupture, ground shaking, liquefaction, lateral spreading, landslides, settlement and differential settlement, and expansive and corrosive soils. Each of these hazards is discussed below.

Surface 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 certain kinds of 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. The nearest Alquist-Priolo Earthquake Fault Zone is the Hayward Fault, which is located approximately 2 miles northeast of the project site.[10] The Geotechnical Investigation indicated that no known surface expressions of fault traces are thought to cross the project site.

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

[7] Cornerstone Earth Group, 2018. Op. cit.

[8] M_W, as opposed to Richter Magnitude, is now commonly used to characterize seismic events. M_W is determined from the physical size (area) of the rupture of the fault plane, the amount of horizontal and/or vertical displacement along the fault plane, and the resistance to rupture of the rock type along the fault.

[9] U.S. Geological Survey (USGS), 2015. UCERF3: A New Earthquake Forecast for California's Complex Fault System, USGS Fact Sheet 2015-3009, March.

[10] California Geological Survey (CGS), 2003. Earthquake Zones of Required Investigation, San Leandro Quadrangle, February 14.

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 perceptible effects of a seismic event at a given point. The Modified Mercalli Intensity (MMI) scale is the most commonly used scale to measure the subjective effects of earthquake intensity in values ranging from I to XII (see Table 4.7-1).[11]

Table 4.7-1 Modified Mercalli Scale

I	Not felt except by a very few under especially favorable circumstances.
II	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; unstable objects overturned. Pendulum clocks may stop.
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.

Source: USGS, 2019.

[11] U.S. Geological Survey (USGS), 2019b. The Modified Mercalli Intensity Scale. Available at: http://earthquake.usgs.gov/learn/topics/mercalli.php, accessed February 20, 2019.

The Association of Bay Area Governments (ABAG) maintains mapping of ground shaking intensity based on various earthquake fault and magnitude scenarios. As described above, the closest active fault to the proposed project is the Hayward Fault. The Hayward Fault (both north and south segment together) is considered capable of generating a M_w 7.0 earthquake, which would generate very strong (MMI VIII) ground shaking at the project site. The project site also has the potential to be subject to strong (MMI VII) ground shaking generated by an earthquake on the Calaveras Fault, Mount Diablo Fault, Greenville Fault, or San Gregorio Fault; and strong to very strong (MMI VII to MMI VIII) ground shaking generated by an earthquake on the San Andreas Fault.[12] A shaking intensity of MMI VII would be expected to cause negligible damage in buildings of good design and construction; slight to moderate damage in well-built ordinary structures; considerable damage in poorly built or badly designed structures. A shaking intensity of MMI VIII would be expected to cause slight damage in specially designed structures; considerable damage in ordinary substantial buildings, with partial collapse; and great damage in poorly built structures.[13]

Liquefaction and Lateral Spreading. Soil liquefaction is a phenomenon primarily associated with saturated soil layers located close to the ground surface. During ground shaking, these soils can 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 Seismic Hazard Zone for liquefaction as mapped by CGS.[14]

The Geotechnical Investigation included an evaluation of liquefaction potential at the project site and found that several subsurface layers could experience liquefaction that could result in settlement at the ground surface ranging up to ⅔-inch. Post liquefaction total settlement was estimated to be about 5 inches in the area where loose non-engineered fill was encountered to a depth of about 18 feet in the southern portion of the project site. Differential settlements are anticipated to be on the order of ½-inch between independent foundation elements, provided the non-engineered fills are addressed. The potential for liquefaction-induced ground rupture was also identified in the area where loose non-engineered fill was encountered to a depth of about 18 feet; however, the potential for liquefaction-induced ground rupture to occur at the project site would be low provided that non-engineered fill is addressed. The Geotechnical Investigation recommended that non-engineered fill be excavated and replaced with engineered fill.

[12] Association of Bay Area Governments (ABAG), 2019. Shaking Scenarios. Available at: http://resilience.abag.ca.gov/earthquakes/Alameda/, accessed February 20.

[13] U.S. Geological Survey (USGS), 2019b. Op. cit.

[14] California Geological Survey (CGS), 2003. Op. cit.

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 a free face (e.g., an open channel or embankment) by earthquake and gravitational forces. There are no free faces on or adjacent to the project site, and the Geotechnical Investigation found that the potential for lateral spreading to affect the project site is low.

Landslides. Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous movement (creep) on slopes of varying steepness. The project site and vicinity are relatively flat, and therefore not subject to landslides or other slope stability hazards. According to CGS, the project site is not located within a Seismic Hazard Zone for seismically-induced landslides.[15]

Settlement, Differential Settlement and Subsidence. Settlement is the lowering of the land surface elevation as a result of loading (i.e., placing heavy loads, typically fill or structures), which often occurs with the development of a site. Settlement or differential (e.g., unequal) settlement could occur if buildings or other improvements are built on low-strength foundation materials (including non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and/or new engineered fill). Although settlement from new loads generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant building damage over time. Poorly consolidated and unsaturated sandy soils can settle more rapidly during strong seismic shaking.

The Geotechnical Investigation estimated that the proposed placement of up to 5½ feet of new fill material at the project site would result in an estimated total settlement of about 1⅔ inches, and settlement from new building loads (assuming conventional shallow footings) would be about 1½ inches, with ¾-inch of differential settlement between independent foundation elements. The Geotechnical Investigation also indicated that unsaturated granular soil at the project site could experience about ⅓-inch of total settlement following strong seismic shaking.

Subsidence or collapse can result from the removal of subsurface water resulting in either catastrophic or gradual depression of the ground surface. Operation of a groundwater extraction and treatment system (GETS) has been performed at the project site since March 2015 to remediate contaminated groundwater and control the migration of contaminated groundwater from the project site (see Section 4.2, Hazards and Hazardous Materials, for further information regarding the GETS). Operation of the GETs involves pumping of groundwater from a series of extraction wells that are screened in the two uppermost groundwater-bearing zones. The groundwater levels in the vicinity of the extraction wells are only slightly lower (generally ranging from approximately 1 to 3 feet lower) than the groundwater levels in immediately surrounding

[15] Ibid.

areas.[16] Such localized and limited lowering of groundwater levels would not result in significant subsidence. Additionally, because the GETS has been in operation since March 2015, subsurface conditions have likely reached a steady state and any potential subsidence related to groundwater extraction has likely stabilized by this time.

Expansive Soils. 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 a consequence of such volume changes, structural damage to buildings and infrastructure can occur if potentially expansive soils are not considered in project design and during construction. The Geotechnical Investigation found highly expansive soils near the surface of the project site within the non-engineered fill materials.

3. Regulatory Setting

This subsection discusses the pertinent State and local regulations related to geology, soils and seismicity.

a. California Building Code. The 2016 California Building Code (CBC), which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations, is based on the 2015 International Building Code, and is the most current State building code. The 2016 CBC covers grading and other geotechnical issues, building specifications and non-building structures. The City of Oakland has adopted the 2016 CBC, as indicated in Chapter 15.04 of the City's code of ordinances. The City of Oakland's Building Services Division is responsible for reviewing plans, issuing building permits and conducting field inspections. The 2016 CBC provides for stringent construction requirements on projects in areas of high seismic risk. The proposed project would be required to conform with, or exceed, current best standards for earthquake resistant construction in accordance with the 2016 CBC and with the generally accepted standards of geotechnical practice for seismic design in Northern California. Adherence to the 2016 CBC would require a site-specific geotechnical investigation to be performed for the proposed project to evaluate soil stability, soil strength, position and adequacy of load-bearing soils, the effect of moisture variation on soil-bearing capacity, compressibility, liquefaction and expansiveness; and that a geotechnical report be prepared to provide recommendations on foundation type and design criteria.

The 2016 CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments of one or more buildings greater than 4,000 square feet, to evaluate for geologic and seismic hazards. The purpose of a site-specific geotechnical investigation is to identify seismic and geologic hazards, such as ground shaking,

[16] Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, GE Oakland Site, Oakland, California, June.

liquefaction, or soil instability, that require certain project design elements to address the hazards. Requirements for the geotechnical investigation are presented in Chapter 16 "Structural Design" and Chapter 18 "Soils and Foundation" of the 2016 CBC. The City of Oakland has amended the CBC requirements under Chapter 18 by adding Chapter 18B, which includes additional requirements related to grading permits and plans, erosion and sediment control and soils reports. In the City of Oakland, the geotechnical investigation report would be reviewed by the Building Services Division prior to issuance of building permits to confirm that the building design complies with the most current building codes.

b. Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was passed in December 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The main purpose of this legislation is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. As mentioned above, the project site is not located within an area mapped as subject to surface rupture under the Alquist-Priolo Earthquake Fault Zoning Act and no known active or potentially active faults cross the project site.

c. Seismic Hazards Mapping Act. In 1990, following the Loma Prieta earthquake, the California Legislature enacted the Seismic Hazards Mapping Act to protect the public from the effects of strong ground shaking, liquefaction, landslides and other seismic hazards. The Seismic Hazards Mapping Act established a statewide mapping program to identify areas subject to violent shaking and ground failure; the program is intended to assist cities and counties in protecting public health and safety. The Seismic Hazards Mapping Act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties and other local permitting agencies to regulate certain development projects within these zones. As a result, the CGS is mapping Seismic Hazards Mapping Act Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking and landslides (primarily the Bay Area and the Los Angeles basin). Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation must be conducted and appropriate measures incorporated into the project design. The project site is not within an earthquake-induced landslides hazard zone; however, the east portion of the site is within a liquefaction hazard zone as designated by CGS mapping.[17]

d. General Plan. The following policies and action items from the Open Space, Conservation and Recreation and Safety Elements of the City's General Plan specifically address soils, geology and/or seismic hazards and are applicable to the project.

Policies and Actions Related to Geologic Hazards

Policy GE-1 Develop and continue to enforce and carry out regulations and programs to reduce seismic hazards and hazards from seismically triggered phenomena.

[17] California Geological Survey (CGS), 2003. Op. cit.

Action GE-1.2	Enact regulations requiring the preparation of site-specific geologic or geotechnical reports for development proposals in areas subject to earthquake-induced liquefaction, settlement or severe ground shaking, and conditioning project approval on the incorporation of necessary mitigation measures.
Policy GE-2	Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.
Action GE-2.1	Continue to enforce provisions under the subdivision ordinance requiring that, under certain conditions, geotechnical reports be filed and soil hazards investigations be made to prevent grading from creating unstable slopes, and that any necessary corrective actions are taken.
Action GE-2.2	Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.
Policy GE-3	Continue, enhance or develop regulations and programs designed to minimize seismically related structural hazards from new and existing buildings.
Action GE-3.1	Adopt and amend as needed updated versions of the California building code so that optimal earthquake-protection standards are used in construction and renovation projects.
Action GE-3.2	Continue to enforce the unreinforced masonry ordinance to require that potentially hazardous unreinforced masonry buildings be retrofitted or be otherwise made to reduce the risk of death and injury from their collapse during an earthquake.
Action GE-3.3	Continue to enforce the earthquake-damaged structures ordinance to ensure that buildings damaged by earthquakes are repaired to the extent practicable.
Policy GE-4	Work to reduce potential damage from earthquakes to “lifeline” utility and transportation systems.
Action GE-4.4	Continue to designate underground utility districts for the purpose of replacing aboveground electric and phone wires and other structures with underground facilities, and use the planning-approval process to ensure that all new utility lines will be installed underground from the start.

Policies and Actions Related to Soils

Policy CO-1.1 Soil loss in new development. Regulate development in a manner which protects soil from degradation and misuse or other activities which significantly reduce its ability to support plant and animal life. Design all construction to ensure that soil is well secured so that unnecessary erosion, siltation of streams, and sedimentation of water bodies does not occur.

Action CO-1.1.1 Soil-related development controls—Maintain, enforce, and periodically review development controls affecting soil removal, including the Grading Ordinance and the Sedimentation and Erosion Control Ordinance.

Action CO-1.1.3 Consideration of soil constraints in development—Consider soil constraints such as shrink-swell and low soil strength in the design of buildings and roads. Suitable base materials and drainage provisions should be incorporated where necessary.

Policy CO-2.2 Unstable geologic features. Retain geologic features known to be unstable, including serpentine rock, areas of known landsliding, and fault lines, as open space. Where feasible, allow such lands to be used for low-intensity recreational activities.

Action CO-2.2.1 Geo-technical study requirements—Maintain Standard Operating Procedures in the Office of Planning and Building which require geo-technical studies for major developments in areas with moderate to high ground shaking or liquefaction potential, or other geologically unstable features.

Policy CO-2.3 Development on filled soils. Require development on filled soils to make special provisions to safeguard against subsidence and seismic hazards.

e. Standard Conditions of Approval. The proposed project would be required to comply with the City's SCAs related to geology and soils presented below.

SCA-GEO-1: Construction-Related Permit(s) (#37)
Requirement: The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40)
Requirement: The project applicant shall submit a site-specific geotechnical report, consistent with California Geological Survey Special Publication 117 (as amended), prepared by a registered

geotechnical engineer for City review and approval containing at a minimum a description of the geological and geotechnical conditions at the site, an evaluation of site-specific seismic hazards based on geological and geotechnical conditions, and recommended measures to reduce potential impacts related to liquefaction and/or slope stability hazards. The project applicant shall implement the recommendations contained in the approved report during project design and construction.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

B. Impacts and Mitigation Measure

This section describes and analyzes impacts related to geology, soils and seismicity that could result from implementation of the project or the San Leandro Street access variant. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies SCAs to address these impacts as needed.

1. Criteria of Significance

Implementation of the proposed project would result in a significant soils, geology and seismicity impact if it would:

a. Expose people or structures to substantial risk of loss, injury, or death involving:

b. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map or Seismic Hazards Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;[18]

c. Strong seismic ground shaking;

d. Seismic-related ground failure, including liquefaction, lateral spreading, subsidence, collapse; or

e. Landslides;

f. Result in substantial soil erosion or loss of topsoil, creating substantial risks to life, property, or creeks/waterways;

g. Be located on expansive soil, as defined in Section 1802.3.2 of the CBC,[19] creating substantial risks to life or property;

h. Be located above a well, pit, swamp, mound, tank vault, or unmarked sewer line, creating substantial risks to life or property;

[18] Refer to CGS 42 and 117 and Public Resources Code Section 2690 et. seq.
[19] 2007 CBC, as it may be revised.

i. Be located above landfills for which there is no approved closure and post-closure plan, or unknown fill soils, creating substantial risks to life or property; or

j. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

The significance criteria listed above are consistent with the significance criteria for geology and soils presented in Appendix G of the 2019 CEQA Guidelines, with the exception that the significance criterion regarding destruction of a unique paleontological resource or site or unique geologic feature is addressed under Section 4.1 Cultural Resources and Tribal Cultural Resources in this Draft EIR.

2. Project Impacts

Implementation of the project or access variant would result in the less-than-significant impacts described below. Because these impacts would not exceed the significance criteria described above, they do not require mitigation measures.

a. Fault Rupture. The project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone,[20] and no known surface expressions of fault traces are thought to cross the project site.[21] Therefore, the proposed project would have no impact related to fault rupture.

b. Ground Shaking. The proposed project would be required to comply with the City's SCAs related to geology and soils prior to approval of construction-related permits. This includes SCA-GEO-1: Construction-Related Permit(s) (#37) which requires that the project be designed and constructed in accordance with the 2016 CBC (Title 24, California Code of Regulations) as amended by the City of Oakland and the Oakland Grading Regulations. The project would also comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) which requires that the project be designed and constructed in accordance with seismic design recommendations presented in the Geotechnical Investigation. Compliance with these SCAs would ensure that the proposed project would be designed and constructed to account for and withstand seismic and geologic hazards which could have adverse effects on the project, thereby minimizing exposure of people and structures to substantial risk of loss, injury, or death during a large regional earthquake. 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 2016 CBC and Oakland Building Code and recommendations of the Geotechnical Investigation are intended to prevent catastrophic building failure in the most severe earthquakes currently anticipated. Therefore, potential impacts associated with strong seismic ground shaking would be less than significant.

[20] California Geological Survey (CGS), 2003. Op. cit.
[21] Cornerstone Earth Group, 2018. Op. cit.

c. Liquefaction and Lateral Spreading. There are no free faces on or adjacent to the project site and the Geotechnical Investigation found that the potential for lateral spreading to affect the project site is low. Therefore, potential impacts associated with lateral spreading would be less than significant.

The project site is located within a Seismic Hazard Zone for liquefaction as mapped by CGS,[22] and the Geotechnical Investigation found that several subsurface layers could experience liquefaction that could result in settlement at the ground surface. Potential liquefaction induced settlement of up to 5 inches and the potential for liquefaction induced ground rupture was identified in the southern portion of the project site where loose non-engineered fill was encountered to a depth of about 18 feet. The Geotechnical Investigation indicated that mitigation of the non-engineered fill at the project site would result in total liquefaction settlement on the order of ⅔-inch at the project site and differential settlements on the order of ½-inch between independent foundation elements and there would be low potential for liquefaction induced ground rupture. The Geotechnical Investigation recommended that (1) foundations be designed to tolerate the anticipated total and differential settlements, and (2) that non-engineered fill be mitigated through removal of non-engineered fill and replacement with compacted engineered fill. The Geotechnical Investigation also included recommendations for localized ground improvement (e.g., stone columns, rammed aggregate, grouted displacement columns, or similar densification techniques) that could be performed if removal of deeper non-engineered fill and replacement with engineered fill is determined not to be feasible, and recommended that additional geotechnical exploration be performed to further evaluate the lateral limits and depth of deeper fill areas and fill quality if ground improvement would be performed.

As discussed above, the project would be required to comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) which requires that the project be designed and constructed in accordance with the recommendations of the Geotechnical Investigation to account for and withstand potential liquefaction hazards. Compliance with this SCA would ensure that potential impacts associated with liquefaction would be less than significant.

d. Seismically-Induced Settlement. The Geotechnical Investigation indicated that unsaturated granular soil at the project site could experience about ⅓-inch of total settlement following strong seismic shaking. As discussed above, the project would be required to comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) which requires that the project be designed and constructed in accordance with the recommendations of the Geotechnical Investigation. Compliance with this SCA would ensure that potential impacts associated with seismically-induced settlement would be less than significant.

[22] California Geological Survey (CGS), 2003. Op. cit.

e. Subsidence or Collapse. Operation of the GETS to remediate contaminated groundwater and control the migration of contaminated groundwater from the project site would continue following project construction. In addition, temporary and localized dewatering of excavations may be required during construction activities including remedial excavation of contaminated soil, removal of non-engineered fills, and installation of subsurface utilities. The groundwater levels in the vicinity of the GETS extraction wells are only slightly lower (generally ranging from approximately 1 to 3 feet lower) than the groundwater levels in immediately surrounding areas.[23] Such localized and limited lowering of groundwater levels would not result in significant subsidence or soil collapse. Additionally, because the GETS has been in operation since March 2015, subsurface conditions have likely reached a steady state and any potential subsidence related to groundwater extraction has likely stabilized by this time. Similarly, the temporary and localized dewatering of excavations would not be expected to result in significant subsidence or soil collapse. Therefore potential impacts associated with subsidence or soil collapse would be less than significant.

f. Landslides. The project site and vicinity are relatively flat and therefore not subject to landslides or other slope stability hazards. According to CGS, the project site is not located within a Seismic Hazard Zone for seismically-induced landslides.[24] Therefore, the proposed project would have no impact related to landslides.

g. Erosion/Loss of Top Soil. Soil erosion, which is discussed in detail in Section 4.8, Hydrology and Water Quality, could occur during project grading and construction. As described in Section 4.8, compliance with the City's SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction and compliance with the Construction General Permit, including preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP), as required by SCA-HYD-2: State Construction General Permit would ensure that the proposed project would have a less than significant impact related to erosion or the loss of top soil.

h. Expansive Soils. The Geotechnical Investigation found highly expansive soils near the surface of the project site within the non-engineered fill materials. The Geotechnical Investigation included a recommendation to address expansive soils including reinforcement of slabs-on-grade, construction on a layer of non-expansive engineered fill, extending footings below the depths of seasonal moisture fluctuation, using positive drainage away from buildings, and limiting landscaping watering. As discussed above, the project would be required to comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) which requires that the project be designed and constructed in accordance with the recommendations of the Geotechnical Investigation. Compliance with this SCA would ensure that potential impacts associated with expansive soils would be less than significant.

[23] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.
[24] California Geological Survey (CGS), 2003. Op. cit.

i. Located Above a Well, Pit, Swamp, Mound, Tank Vault, or Unmarked Sewer Line.
The Geotechnical Investigation did not indicate that the site is located on a swamp or mound. The project site contains many monitoring wells and extraction wells that are associated with the investigation and remediation of contaminated groundwater at the project site. Some wells will require relocation or removal to accommodate the proposed project.[25] The removal or replacement of wells would be performed in accordance with Alameda County requirements (e.g., sealing the wells with cement grout), which would ensure that the wells would not create a hazard related to subsurface voids.

Underground structures encountered during soil disturbance for redevelopment would be removed and disposed of off-site or may be crushed and reused as fill, if made of concrete. Structures expected to be encountered during redevelopment of the project site include the following: [26]

Previously abandoned and to-be abandoned utilities. Existing utilities not in conflict with the redevelopment will be abandoned in place, including the existing stormwater collection system.

Utility vaults, sumps, and drains. Utility vaults, sumps, and drains that extend deeper than the expected depths of soil disturbance for redevelopment will be abandoned as appropriate for geotechnical purposes and to prevent conduits (e.g., backfilling or pressure grouting), including the French drain system associated with the former oil recovery system by Building #21.

Underground storage tanks (USTs). Records indicate that up to four USTs were abandoned in place at the project site. If an UST is encountered, it will be removed and disposed of off-site as required by the Oakland Fire Department, Fire Prevention Bureau.

The Geotechnical Investigation includes recommendations for the abandonment of existing utilities and indicates that all existing utilities within the planned building area must be either completely removed or backfilled with grout or sand-cement slurry, the ends of the utilities outside of the building area must be capped with concrete, and if existing utility trench fills are determined to be a risk to the proposed structure, the trench fill must be removed and replaced by engineered fill with the trench sidewalls cut to a slope of at least 1:1. As discussed above, the project would be required to comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/ Liquefaction) (#40) which requires that the project be designed and constructed in accordance with the recommendations of the Geotechnical Investigation. Compliance with this SCA and Alameda County requirements for well destruction would ensure that potential impacts related to subsurface structures such as wells, utilities, stormdrains, vaults, sumps, or tanks (USTs) would be less than significant.

[25] EKI Environment and Water, Inc., 2018. Evaluation of the Proposed Redevelopment with respect to the Requirements of the Approved Remedy, Bridge Point Oakland, 5441 International Boulevard, Oakland, California, September 6.
[26] Ibid.

j. Located Above a Landfill. No records of a historic landfill at the project site have been identified (for a detailed description of the site history related to hazardous materials, please refer to Section 4.2, Hazards and Hazardous Materials of this EIR). Therefore, this is a less-than-significant impact.

k. Located Above Unknown Fill Soils. The Geotechnical Investigation found that the project site is generally blanketed with up to 5 to 6 feet of non-engineered fill material, and deeper non-engineered fill was encountered to a depth of about 18 feet in one area in the southern portion of the project site. The Geotechnical Investigation indicated that the non-engineered fills are expected to vary in thickness, density, and consistency across the project site, and indicated that additional areas of deep non-engineered fill are anticipated to be present at the project site due to past development and environmental remediation of the project site. The Geotechnical Investigation recommended the removal of all non-engineered fill and replacement with engineered fill within and extending 5 feet beyond the building footprint, or to a lateral distance equal to the fill depth below the perimeter footing, whichever is greater. The Geotechnical Investigation also recommended that the final depth of over-excavation should be determined by the geotechnical representative during grading. The Geotechnical Investigation indicated that the removed existing fills may be reused as engineered fill provided that the fill meets the requirements for fill material, which is anticipated to be the case based on geotechnical samples collected. The Geotechnical Investigation recommended that materials such as debris, wood, and trash must be screened out of the fill prior to reuse.

The Geotechnical Investigation recommended that existing fills below planned pavement and flatwork areas may be left in place provided they are determined to be low risk for future differential settlement and that the upper 12 to 18 inches of fill below the pavement subgrade is re-worked and compacted as per the geotechnical recommendations.

As discussed above under Liquefaction and Lateral Spreading, the Geotechnical Investigation also included recommendations for localized ground improvement (e.g., stone columns, rammed aggregate, grouted displacement columns, or similar densification techniques) that could be performed if removal of deeper non-engineered fill and replacement with engineered fill is determined not to be feasible, and recommended that additional geotechnical exploration be performed to further evaluate the lateral limits and depth of deeper fill areas and fill quality if ground improvement would be performed.

As discussed above, the project would be required to comply with SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction) (#40) and which requires that the project be designed and constructed in accordance with the recommendations of the Geotechnical. Compliance with this SCA would ensure that potential impacts associated with non-engineered fill would be less than significant.

I. Septic Tanks or Alternative Wastewater Disposal Systems. The project does not propose the use of septic tanks or alternative wastewater disposal systems. Sanitary sewer service would be provided by the East Bay Municipal Utility District (EBMUD). Therefore, no impact related to use of on-site septic systems would occur.

3. Cumulative Impacts

For geology and soils, the cumulative impact area considered is the immediate vicinity of the project site. Impacts related to geologic hazards are generally site-specific rather than cumulative in nature, because each project area has unique geologic considerations that would be subject to uniform site development and construction standards. Therefore, the potential for cumulative impacts is limited to the project site and adjacent sites. Impacts associated with potential geologic hazards related to soil or other conditions occur at individual building sites. These effects are site-specific and impacts would not be compounded by additional development. Therefore, no significant cumulative impact relating to geology and soils is occurring or would be expected to occur in the vicinity of the project site.

4.8 HYDROLOGY AND WATER QUALITY

This section describes the existing hydrological setting for the project site, including runoff, drainage, and water quality characteristics, based on information obtained from: 1) a review of reports related to environmental investigations and remediation of the project site, and 2) a review of the information provided as part of the project application and other published materials. This section also identifies potentially significant impacts that could result from implementation of the proposed project or the San Leandro Street access variant and provides mitigation measures to reduce identified impacts to a less-than-significant level, where appropriate.

A. Setting

This subsection provides a brief description of the existing hydrological setting at and near the project site; the regulations affecting water resources at the federal, State, and regional level; and local policies and programs related to hydrology and water quality.

1. Climate

The climate of the project vicinity is characterized as Mediterranean, with cool wet winters and warm dry summers. The mean annual rainfall in the project vicinity for the period between 1948 and 2016 was approximately18 inches, and primarily occurred from October through April.[1] During the period of record, annual rainfall has varied from approximately 9 inches (1976) to approximately 29 inches (1973), with a highest one-day precipitation total of approximately 4.5 inches on October 1963.[2]

2. Runoff and Drainage

On a regional level, the project site is located in the San Francisco Bay Watershed. On a local level, the project site is located in the Peralta Creek Watershed, which drains an area of approximately 5.6 square miles including a portion of the Oakland hills and flatlands into engineered channels that discharges to San Leandro Bay. The San Leandro Bay Watershed is located adjacent to the southwest of the Peralta Creek Watershed, and runoff from the project site drains through the San Leandro Bay Watershed (through an engineered channel) prior to discharging to San Leandro Bay.[3]

The project site is located in a relatively flat and highly urbanized area. The project site is currently developed and is covered with impervious surfaces consisting of structures, asphalt pavement, and a 4-acre area (in the eastern portion of the site) that is covered by a 6-inch-thick

[1] Western Regional Climate Center, 2018a. General Climate Summary Tables-Precipitation, Oakland, California. Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6335, accessed December 28.

[2] Western Regional Climate Center, 2018b. General Climate Summary Tables-Temperature, Oakland, California. Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6335, accessed December 28.

[3] Alameda County Flood Control District, 2019. Interactive Map: Alameda County Watersheds. Available at: https://www.acfloodcontrol.org/resources/explore-watersheds/, accessed March 15.

layer of crushed rock underlain by a 4-inch-thick layer of low permeability bentonite-soil mixture (referred to as a bentonite-soil cap and shown on Figure 3-3).[4]

Stormwater runoff at the project site is either captured in roof drains/catch basins and conveyed through subsurface storm drains towards the southern corner of the project site, or flows over the ground surface towards the southern corner of the project site. Stormwater runoff from the project site ultimately collects at the furthest downgradient manhole in the southern corner of the project site (known as manhole MH-24) and discharges through a 24-inch diameter storm drain to the City's storm drain system located beneath San Leandro Street.[5] The storm drain beneath San Leandro Street connects to underground storm drains/culverts and engineered channels which discharge to San Leandro Bay approximately 3,000 feet southwest of the project site. [6] San Leandro Bay is hydraulically connected to San Francisco Bay approximately 2 miles southwest of the project site.

As part of the implementation of remedial actions at the project site between 2013 and 2015, the subsurface storm drain system at the project site was plugged at manhole MH-23 (the second furthest downgradient manhole which is located in the southern portion of the project site) and a new catch basin (known as catch basin CB-24) was installed upstream of manhole MH-24 and fitted with filter systems for surface flow filtration into the catch basin.[7] Stormwater runoff from the northeastern area of the project site collects in manhole MH-23, is pumped through bag filters, and discharged to the downgradient ground surface. The filtered stormwater then joins stormwater runoff from the asphalt cap covering the southwestern portion of the project site and flows into catch basin CB-24 before discharging into manhole MH-24. Manhole MH-24 also receives flow from the adjacent property located to the east of the project site. Reinforced concrete curbs were also installed around the perimeter of the project site to contain stormwater on the project site and prevent off-site stormwater from entering the project site.[8]

3. Flooding

The project site is not located within a Federal Emergency Management Agency (FEMA)-designated 100-year Flood Hazard Zone or area protected from flooding by levees. The project site is designated as "Area of Minimal Flood Hazard" Zone X on FEMA's National Flood Hazard Layer for Flood Insurance Rate Maps (FIRMs).[9] The Area of Minimal Flood Hazard Zone X designation indicates that the project site is outside the 0.2 percent annual chance floodplain

[4] Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, GE Oakland Site, Oakland, California, June.

[5] Geosyntec, 2013. Summary Report for Activities at the GE Oakland Facility, 5441 International Boulevard, Oakland, California, November 11.

[6] Sowers, Janet M. et al., 1993. Creek & Watershed Map of Oakland & Berkeley. Revised 1995 & 2000.

[7] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.

[8] Amec Foster Wheeler Environment & Infrastructure, Inc., 2017a. Sediment Sampling Work Plan, GE Oakland Site, 5441 International Boulevard, Oakland, CA 94601, April 3.

[9] Federal Emergency Management Agency (FEMA), 2018. National Flood Hazard Layer FIRMette, Map Number 06001C0089H, effective December 21.

(i.e., outside the 500-year floodplain). The project site is not located in a dam failure inundation area.[10]

4. Coastal Hazards

Based on the location of the project site (relatively far from any open water shoreline at approximately 3,000 feet from San Leandro Bay) and the elevation of the site (approximately 20 feet above the North American Vertical Datum of 1988 [NAVD88][11]) the site is not subject to coastal flooding hazards.

5. Surface Water and Groundwater Quality

The quality of surface water and groundwater in the vicinity of the project site is affected by past and current land uses at the project site and within the watershed and the composition of geologic materials in the vicinity. The State Water Resources Control Board (State Water Board) and nine regional water quality control boards regulate water quality of surface water and groundwater bodies throughout California. In the Bay Area, including the project vicinity, the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) is responsible for implementing the Water Quality Control Plan (Basin Plan).[12] The Basin Plan establishes beneficial water uses and water quality objectives for waterways and water bodies within the region and is a master policy document for managing water quality in the region.

San Leandro Bay and San Francisco Bay receive stormwater runoff from the project site and are listed in the Basin Plan as providing the beneficial uses of commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, wildlife habitat, water contract and noncontact recreation, and navigation. San Francisco Bay is also listed as providing the beneficial uses of industrial service water supply, shellfish harvesting, and fish spawning.[13]

As described in the Regulatory Framework Section below, under Section 303(d) of the Clean Water Act (CWA), states must present the U.S. Environmental Protection Agency (USEPA) with a list of “impaired water bodies,” defined as those water bodies that do not meet water quality standards, which in some cases results in the development of a total maximum daily load (TMDL). On a broad level, the TMDL process leads to a “pollution budget” designed to restore the health of a polluted body of water. The TMDL process provides a quantitative assessment of the sources of pollution contributing to a violation of the water quality standards and identifies the pollutant load reductions or control actions needed to restore and protect the beneficial uses of the impaired waterbody. The State Water Board has listed San Leandro Bay as an impaired water body due to impacts from pollutants including pesticides (chlordane, dichlorodiphenyl-

[10] City of Oakland, 2004. General Plan Safety Element-Flooding Hazards. Amended 2012.

[11] U.S. Geological Survey (USGS), 2018. Oakland East Quadrangle, California, 7.5-Minute Series.

[12] San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

[13] Ibid.

trichloroethane [DDT], and dieldrin), dioxins, furans, invasive species, mercury, and zinc in water; and lead, polycyclic aromatic hydrocarbons (PAHs), and pesticides in sediment. The State Water Board has listed San Francisco Bay as an impaired water body due to impacts from pollutants including pesticides (chlordane, DDT, and dieldrin), dioxins, furans, invasive species, mercury, PCBs, selenium, and trash in water. TMDLs have been established for mercury, PCBs, and selenium in San Francisco Bay.[14]

The project site is located in the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin. The East Bay Plain Subbasin is listed in the Basin Plan as providing the beneficial uses of municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply.[15] Groundwater beneath the project site is contaminated from past releases of hazardous materials. The groundwater contaminants of concern include polychlorinated biphenyls (PCBs) and volatile organic compounds (VOCs), primarily trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride. The groundwater contamination from VOCs has migrated off-site and impacted areas southwest of the project site. A groundwater extraction and treatment system (GETS) was installed at the project site to remove contaminants. Operation of the GETS mitigates the flow of the most contaminated groundwater in the two uppermost groundwater bearing zones (referred to the as A-zone [most shallow] and B-zone) away from the project site.[16]

6. Stormwater Quality

As described in the regulatory setting section below, stormwater quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program, established through the federal Clean Water Act (CWA). Stormwater runoff from the project site has been impacted by PCBs in the past. In 1981, GE constructed surface water control measures to address the transport and discharge of PCBs in stormwater. The surface water control measures consisted of two general corrective measures: 1) capping (also called surface sealing); and 2) installation of BMPs for stormwater runoff management and treatment. A soil berm was constructed along the northern, western, and southern site boundaries to control runoff, and three separate drainage systems were installed to handle roof runoff, paved area runoff, and bentonite-soil cap runoff. The drainage systems included the installation of curbs, gutters, catch basins, and drainage piping in the asphalt paved area and an open concrete channel along the southern side of the bentonite-soil cap area.[17] In August 2013, the USEPA indicated that elevated

[14] State Water Resources Control Board (State Water Board), 2017. Final 2014 and 2016 California Integrated Report (Clean Water Act Section 303(d) List/305(b) Report), Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml, accessed January 2, 2019.

[15] Regional Water Board, 2017. Op. cit.

[16] Amec Foster Wheeler Environment & Infrastructure, Inc., 2017b. Semiannual Groundwater Monitoring Report, April Through September 2017, 5441 International Boulevard Oakland, California, November 10.

[17] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.

concentrations of PCBs had been detected in sediment samples collected from a stormwater sampling point in manhole MH-24, and requested that GE perform the following:[18]

- Remove all sediment and other debris from the on-site stormwater drainage system before winter rains.
- Periodically remove accumulated sediment from the on-site manholes including MH-24.
- Take measures as necessary to minimize sediment entering the stormwater drainage systems.
- Analyze sediment samples for PCBs from the segment of the stormwater drainage system downstream of the project site before it connects with stormwater discharges from other sources, and after completing sampling, remove all sediment from the pipeline.

In response to the USEPA requests, a Summary Report[19] was prepared in November 2013 which indicated that GE conducts annual routine maintenance activities on the site to satisfy requirements of regulatory directives including cleaning of storm drain structures, dry vacuuming of manhole MH-24, replacement of all catch basin inserts and installation of any necessary best management practices, and sweeping and repairing asphalt surfaces. In addition, the Summary Report indicated that sampling of sediment from manhole MH-24 was performed in June 2013, and impacts from PCBs were detected in the sediment. After the 2013 sediment sampling, GE began dry-vacuuming manhole MH-24 on a monthly basis, however PCBs were still detected in sediments in manhole MH-24 in October 2013. In September 2013, GE conducted cleaning of the 24-inch diameter storm drain that runs 175 feet from manhole MH-24 to the off-site manhole directly west on San Leandro Street, and conducted cleaning of all storm drains and manholes on the project site in September and October 2013. A video survey of the storm drain downstream from manhole-24 was also conducted at this time; however, the video camera could not travel further than 20 feet downstream of manhole-24 due to the presence of a large sump in the storm drain.[20] GE indicated that the Summary Report was submitted to USEPA; however, documentation of a response from USEPA has not been provided by GE as of May 2019.[21]

A Sediment Sampling Workplan[22] was prepared for the project site in April 2017 to address the sampling of sediment from manhole MH-24 which was requested by USEPA in March 2017. The Sediment Sampling Workplan indicated that there was not a sufficient volume of sediment in manhole MH-24 to collect a sample and that the manhole would be inspected for sufficient

[18] U.S. Environmental Protection Agency (USEPA), 2013. Request for Supplemental TSCA Application for Risk Based PCB Cleanup at General Electric Company Facility at 5441 International Boulevard, Oakland, California, August 28.

[19] Geosyntec, 2013. Op. cit.

[20] Ibid.

[21] Deepa Ghandi, 2018. Email correspondence between Deepa Ghandi of EKI and Judith Malamut of Baseline, December 19.

[22] Amec Foster Wheeler Environment & Infrastructure, Inc., 2017a. Op. cit.

sediment volume every other week. In e-mails from May and June 2018,[23] USEPA corresponded with GE's environmental consultant regarding the status of sediment sampling in manhole MH-24 and GE's environmental consultant indicated that they monitor the sediment; however, there had not been enough sediment to sample because the bag filters and catch basin inserts, described above, have been operating as intended. USEPA indicated that it is important to perform PCB sampling of the sediment in order to confirm that the cap is working properly, and suggested potential sediment sampling approaches.[24] No further information was available regarding the status of sediment sampling from storm drains at the project site, as of May 2019.

7. Regulatory Setting

Federal, State, and regional regulations related to hydrology and water quality are described below.

a. Federal Framework.

Federal Clean Water Act of 1972. The federal CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. In general, the CWA prohibits discharges to surface waters unless specifically authorized by a permit. These permits are administered by federal and state agencies, including the U.S. Army Corps of Engineers, State Water Board and nine Regional Water Quality Control Boards (RWQCBs). There are several sections of the CWA that are relevant to the project:

State Water Quality Certification. Section 401 requires certification from the State Water Board that a proposed water resource project is in compliance with all state water quality standards.

Permits for Dredged or Fill Material. Under Section 404, the United States Army Corps of Engineers (USACE) has primary responsibility for administering regulations for disposal of dredged or fill material in US waters.

Section 303(d) of the CWA requires the State to compile a list of water bodies that do not meet, or are not expected to meet, water quality standards; these water bodies are identified as "impaired" water bodies.

Rivers and Harbors Act. The Rivers and Harbors Act (33 United States Code Section 403) governs specified activities in navigable waters. Section 10 of the Rivers and Harbors Act requires authorization from the USACE for the construction of structures or fill placed in or on navigable waters.

[23] Ron Leach, 2018a. Email correspondence between Ron Leach of USEPA and Susan Coleman of Wood Environmental & Infrastructure Solutions, May 4 through June 4.

[24] Ibid.

b. State and Regional Framework.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act of 1969 provides California legislative authority for the protection of water quality for the use and enjoyment of the people. The Act, which has been incorporated in Division 7 of the California Water Code, includes jurisdiction over streams, groundwater, isolated wetlands, and other bodies that are not under the federal jurisdiction of the CWA. The Act also authorizes the State Water Board and RWQCBs to issue and enforce waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permits, and other approvals.

NPDES Construction General Permit. Construction in California that disturbs one or more acres of land surface are required to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and 2012-006-DWQ) [25] (Construction General Permit). The Construction General Permit was issued by the State Water Board and is overseen by the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) in the proposed project area. To obtain coverage under the Construction General Permit, the discharger must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required in Attachment B of the Construction General Permit. The construction activities subject to this permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation, but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The permit also covers linear underground and overhead projects such as pipeline installations.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the established risk level of the (Risk Level 1, 2 or 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The discharger would determine the project risk level when filing the Notice of Intent.

A Qualified SWPPP Developer must prepare a SWPPP that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to (1) help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) describe and ensure the implementation of Best Management Practices (BMPs) to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Common BMPs on construction sites include the placement of vegetation, straw, fiber, stabilizing emulsion, protective blankets, or

[25] State Water Board, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

other materials on areas of disturbed soils to reduce erosion. A Qualified SWPPP Practitioner must oversee the operation of BMPs that meet the requirements outlined in the permit.

The SWPPP also requires a construction site monitoring program. Depending on a particular project's risk level, the monitoring program may include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment). The Construction General Permit requires that all dischargers develop a sampling and analysis strategy for monitoring non-visible pollutants in stormwater at any construction site where the discharge can cause or contribute to an exceedance of a water quality objective.

The Construction General Permit allows non-stormwater discharge of dewatering effluent if the water is not contaminated and is properly filtered or treated, using appropriate technologies such as clarifier tanks or sand filters. If the dewatering activity is deemed by the Regional Water Board not to be covered by the Construction General Permit, then the discharger would be required to prepare a Report of Waste Discharge, and if approved by the Regional Water Board, be issued site-specific waste discharge requirements (WDRs) under NPDES regulations. Site-specific WDRs contain rigorous monitoring requirements and performance standards that, when implemented, ensure that receiving water quality is not substantially degraded. The discharge of dewatering effluent is authorized under the Construction General Permit if the following conditions are met:

- The discharge does not cause or contribute to a violation of any water quality standard.
- The discharge does not violate any other provision of the Construction General Permit.
- The discharge is not prohibited by the applicable Basin Plan.
- The discharger has included and implemented specific BMPs required by the Construction General Permit to prevent or reduce the contact of the non-stormwater discharge with construction materials or equipment.
- The discharge does not contain toxic constituents in toxic amounts or (other) significant quantities of pollutants.
- The discharge is monitored and meets the applicable numeric action levels.
- The discharger reports the sampling information in the annual report.

If any of the above conditions are not satisfied, the discharge of dewatering effluent is not authorized by the Construction General Permit. The discharger must notify the local Regional Water Board of any anticipated non-stormwater discharges not already authorized by the Construction General Permit or another NPDES permit, to determine whether a separate NPDES permit is necessary.

NPDES Municipal Permit. Stormwater quality is regulated by the National Pollutant Discharge Elimination System (NPDES) Program, established through the federal Clean Water Act (CWA). The NPDES program objective is to control and reduce pollutant discharges to surface water bodies. Compliance with NPDES permits is mandated by state and federal statutes and regulations. Pursuant to Section 402 of the CWA and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in the City of Oakland are regulated under the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008, adopted October 14, 2009 (MRP). The MRP is overseen by the Regional Water Board.[26] The City is part of the Alameda Countywide Clean Water Program, which provides guidance and assistance to municipalities in Alameda County to help them comply with requirements of the MRP.

Stormwater discharges from the project site flow to the City's stormwater collection systems, which are regulated under the MRP. Provision C.3 of the MRP requires implementation of low impact design (LID) source control, site design, and stormwater treatment for regulated projects. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment (removal of pollutants from stormwater runoff) through use of rain gardens, bioretention units, bioswales, and planter/tree boxes.[27]

MRP Provision C.3.g pertains to hydromodification[28] management. This MRP provision requires that stormwater discharges shall not cause an increase in the erosion potential of the receiving stream over the existing condition. Increases in runoff flow and volume must be managed so that the post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. According to the Hydromodification Applicability Map, the project site is not located within an area designated as susceptible to hydromodification.[29]

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

[27] Regional Water Board, 2015. Op. cit.

[28] Hydromodification is defined as the modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.

[29] Regional Water Board, 2015. Op. cit.

Sustainable Groundwater Management Act. The 2014 Sustainable Groundwater Management Act requires local public agencies and groundwater sustainability agencies in high- and medium-priority basins to develop and implement Groundwater Sustainability Plans (GSPs) or Alternatives to GSPs.[30] GSPs are detailed road maps for how groundwater basins will reach long term sustainability. Existing Groundwater Management Plans (GMPs) will be in effect until GSPs are adopted in medium and high priority basins.[31] The project is located in the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin, which is designated as a medium priority basin and therefore is required to develop a GSP.[32] A GSP has not been developed yet for the Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin.[33] A GMP[34] has been developed by the East Bay Municipal Utility District (EBMUD) for the South East Bay Plain basin, which includes the project site, as described below.

South East Bay Plain Groundwater Management Plan. The South East Bay Plain GMP was prepared by EBMUD in 2013 with the overarching goal of preserving the local groundwater basin as a reliable and sustainable water supply for current and future beneficial uses. To achieve the goal, the GMP outlines the following four basin management objectives:

1) Preserve basin storage by maintaining groundwater elevations in the GMP area to ensure sustainable use of the basin;
2) Maintain or improve groundwater quality in the GMP area to ensure sustainable use of the basin;
3) Manage potential inelastic land surface subsidence from groundwater pumping; and
4) Manage the South East Bay Plain basin through coordination and collaboration.

The actions that are being implemented under GMP to meet the goals and objectives include:

- Stakeholder involvement (involving the public, coordinating with local, State and federal agencies, and pursuing partnership opportunities);
- Monitoring programs (groundwater elevation/quality and subsidence);
- Groundwater modeling;

[30] California Department of Water Resources, 2019a. Groundwater Sustainability Plans. Available at: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Groundwater-Sustainability-Plans, accessed March 14.

[31] California Department of Water Resources, 2019b. Non-SGMA Groundwater Management. Available at: https://water.ca.gov/Programs/Groundwater-Management/Non-SGMA-Groundwater-Management, accessed March 14.

[32] California Department of Water Resources, 2019c. 2018 SGMA Basin Prioritization Dashboard. Available at: https://gis.water.ca.gov/app/bp2018-dashboard/p1/#, accessed March 14.

[33] California Department of Water Resources, 2019d. Groundwater Information Center Interactive Map Application. Available at: https://gis.water.ca.gov/app/gicima/, accessed March 14.

[34] East Bay Municipal Utility District (EMBUD), 2013. South East Bay Plain Basin, Groundwater Management Plan, March.

- Groundwater resource protection (well standards, protection of recharge areas, reporting contamination, and salt and nutrient management); and,
- Groundwater sustainability management (coordinating management activities, water conservation and recycling, periodic assessment and reporting, and water budgeting).

The groundwater contamination plume at the project site is identified in the GMP as one of several major contaminant plumes in the South East Bay Plain basin.

c. Local Regulatory Considerations.

Oakland General Plan. The following objectives, policies, and actions from the Oakland General Plan Open Space, Conservation and Recreation and Safety Element related to hydrology and water quality pertain to the proposed project.

Open Space, Conservation and Recreation, Chapter 3 – Conservation, Water Resources

Policy CO 5.3: Control of Urban Runoff: Employ a broad range of strategies, compatible with the Alameda Countywide Clean Water Program, to: (a) reduce water pollution associated with stormwater runoff; (b) reduce water pollution associated with hazardous spills, runoff from hazardous material areas, improper disposal of household hazardous wastes, illicit dumping, and marina "live-aboards;" and (c) improve water quality in Lake Merritt to enhance the lake's aesthetic, recreational, and ecological function.

Safety Element, Chapter 3 – Geologic Hazards

Policy GE-2: Continue to enforce ordinances and implement programs that seek specifically to reduce the landslide and erosion hazards.

Action GE-2.2: Continue to enforce the grading, erosion and sedimentation ordinance by requiring, under certain conditions, grading permits and plans to control erosion and sedimentation.

Action GE-2.3: Continue to enforce provisions under the creek protection, stormwater management and discharge control ordinance designed to control erosion and sedimentation.

Action GE-2.5: Enact regulations requiring new development projects to employ site design and source-control techniques to manage peak stormwater runoff flows and impacts from increased runoff volumes.

Safety Element, Chapter 6 – Flooding Hazards

Policy FL-1: Enforce and update local ordinance, and comply with regional orders that would reduce the risk of storm-induced flooding.

Action FL-1.3: Comply with all applicable performance standards pursuant to the 2003 Alameda countywide National Pollutant Discharge Elimination System municipal stormwater permit that seek to manage increases in stormwater runoff flows from new-development and redevelopment construction projects.

Action FL-1.4: Continue to enforce the grading, erosion, and sedimentation ordinance by prohibiting the discharge of concentrated stormwater flows by other than approved methods.

Oakland Municipal Code, Grading Ordinance (Chapter 15.04.660). The Grading Ordinance requires a permit for grading activities on private or public property for projects that exceed certain criteria, such as amount of proposed excavation and degree of site slope. During project construction, the volume of the excavated fill material could exceed 50 cubic yards and could result in a 20 percent slope onsite, or the depth of excavation could exceed 5 feet at any location. Therefore, the project sponsor would be required to apply for the grading permit and prepare a grading plan, erosion and sedimentation control plan, and drainage plan.

Oakland Standard Conditions of Approval. The proposed project would be required to comply with the City's SCAs related to hydrology and water quality presented below.

SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction (#45)
a. Erosion and Sedimentation Control Plan Required
Requirement: The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: N/A

b. Erosion and Sedimentation Control During Construction

Requirement: The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.
When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-HYD-2: State Construction General Permit (#46)

Requirement: The project applicant shall comply with the requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required Permit Registration Documents to SWRCB. The project applicant shall submit evidence of compliance with Permit requirements to the City.
When Required: Prior to approval of construction-related permit
Initial Approval: State Water Resources Control Board; evidence of compliance submitted to Bureau of Building
Monitoring/Inspection: State Water Resources Control Board

SCA-HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects (#50)
a. Post-Construction Stormwater Management Plan Required

Requirement: The project applicant shall comply with the requirements of Provision C.3 of the Municipal Regional Stormwater Permit issued under the National Pollutant Discharge Elimination System (NPDES). The project applicant shall submit a Post-Construction Stormwater Management Plan to the City for review and approval with the project drawings submitted for site improvements, and shall implement the approved Plan during construction. The Post-Construction Stormwater Management Plan shall include and identify the following:

i. Location and size of new and replaced impervious surface;
ii. Directional surface flow of stormwater runoff;
iii. Location of proposed on-site storm drain lines;
iv. Site design measures to reduce the amount of impervious surface area;
v. Source control measures to limit stormwater pollution;
vi. Stormwater treatment measures to remove pollutants from stormwater runoff, including the method used to hydraulically size the treatment measures; and
vii. Hydromodification management measures, if required by Provision C.3, so that post-project stormwater runoff flow and duration match pre-project runoff.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning; Bureau of Building
Monitoring/Inspection: Bureau of Building

b. Maintenance Agreement Required

Requirement: The project applicant shall enter into a maintenance agreement with the City, based on the Standard City of Oakland Stormwater Treatment Measures Maintenance Agreement, in accordance with Provision C.3, which provides, in part, for the following:

i. The project applicant accepting responsibility for the adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures being incorporated into the project until the responsibility is legally transferred to another entity; and
ii. Legal access to the on-site stormwater treatment measures for representatives of the City, the local vector control district, and staff of the Regional Water Board, San Francisco Region, for the

purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary.

The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.

When Required: Prior to building permit final
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

B. Impacts and Mitigation Measures

This section describes analyzes impacts related to hydrology and water quality that could result from implementation of the project or access variant. This section begins with the criteria of significance that establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the project and identifies SCAs and/or mitigation measures to address these impacts as needed.

1. Criteria of Significance

Implementation of the project would result in a significant impact on hydrology and water quality if it would result in any of the following:

a. Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality;

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);

c. Result in substantial erosion or siltation on or off site that would affect the quality of receiving waters;

d. Result in substantial flooding on- or off-site;

e. Create or contribute substantial runoff which would exceed the capacity of existing or planned stormwater drainage systems;

f. Create or contribute substantial runoff which would be an additional source of polluted runoff;

g. Otherwise substantially degrade water quality;

h. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, that would impede or redirect flood flows;

i. Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

j. Expose people or structures to a significant risk of loss, injury, or death involving flooding;

k. Expose people or structures to a significant risk of loss, injury, or death involving seiche, tsunami, or mudflow;

l. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course, or increasing the rate or amount of flow, of a creek, river, or stream in a manner that would result in substantial erosion, siltation, or flooding, both on- or off-site; or

m. Fundamentally conflict with the City of Oakland Creek Protection Ordinance (OMC Chapter 13.16) intended to protect hydrologic resources. [Note: Although there are no specific, numeric/quantitative criteria to assess impacts, factors to be considered in determining significance include whether there is substantial degradation of water quality through (a) discharging a substantial amount of pollutants into a creek, (b) significantly modifying the natural flow of the water or capacity, (c) depositing substantial amounts of new material into a creek or causing substantial bank erosion or instability, or (d) substantially endangering public or private property or threatening public health or safety.]

The significance criteria listed above are from the City's CEQA Thresholds of Significance Guidelines and are generally consistent with the significance criteria for hydrology and water quality presented in Appendix G of the 2019 CEQA Guidelines. However, the criteria listed above includes issues that are not included in Appendix G, such as placement of housing in a flood zone and conflicts with the Creek Protection Ordinance. Additionally, issues that are not included in the criteria listed above that are included in Appendix G of the 2019 CEQA Guidelines include the potential for flood hazard, tsunami, or seiche inundation to release pollutants; and the potential for the project to conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Because the City's CEQA Thresholds of Significance Guidelines addresses the general content and intent of the significance criteria for water quality in Appendix G and these criteria are more specific to the City, this EIR evaluates water quality impacts according to the City's CEQA Thresholds of Significance Guidelines, as follows.

2. Project Impacts

Implementation of the project or access variant would result in the following impacts described below. SCAs and mitigation measures are identified, as necessary, to reduce or avoid significant impacts.

a. Water Quality.

Construction Period Impacts. Construction period impacts associated with dewatering effluent, migration of contaminated groundwater and stormwater runoff are discussed below.

Dewatering Effluent. Dewatering may be performed during construction of excavations and deep trenches. Dewatering effluent may have high turbidity and could contain contaminants.

Turbid/contaminated groundwater could cause degradation of the receiving water quality if discharged directly to storm drains without treatment. Any groundwater dewatering would be limited in duration and the discharge of dewatering effluent would be subject to permits from East Bay Municipal Utility District (EBMUD) or the Regional Water Board, depending if the discharge were to the sanitary or storm sewer system, respectively.

If the water is not suitable for discharge to the storm drain (receiving water), dewatering effluent may be discharged to EBMUD's sanitary sewer system if special discharge criteria are met. These include, but are not limited to, application of treatment technologies or BMPs which would result in achieving compliance with the wastewater discharge limits. Discharges to EBMUD's facilities must occur under a Special Discharge Permit. EBMUD operates its wastewater treatment facilities in accordance with Waste Discharge Requirements issued by the Regional Water Board, which require rigorous monitoring of effluent to ensure discharges do not adversely impact receiving water quality. According to the Remedial Design Implementation Plan Addendum (RDIP Addendum),[35] dewatering would be performed in accordance with the Technical Specifications from the 2012 RDIP, and groundwater generated from dewatering will be collected and stored onsite to be either treated by the groundwater extraction and treatment system (GETS) or appropriately disposed of off-site. Compliance with existing regulations and the recommendations included in the RDIP Addendum would ensure that potential impacts to water quality associated with dewatering effluent management would be less than significant.

Migration of Contaminated Groundwater. A groundwater extraction and treatment system was installed at the project site to remove contaminated groundwater and to control its migration away from the site. According to the RDIP Addendum, Appendix F, Groundwater Remedy Modifications and Off-site Vapor Intrusion Assessment,[36] the GETS would be shut down and removed during redevelopment of the project site and would be replaced and recommissioned as redevelopment activities allow. During the approximately one year that the GETS is shut down, the RDIP Addendum indicates that the contaminated groundwater plume could migrate outward and expand approximately 62 feet relative to its current location. Potential impacts related to this plume migration are described under Impact HAZ-2 in Section 4.2, Hazards and Hazardous Materials of this Draft EIR.

Stormwater Runoff. The proposed project or variant would involve construction activities that would disturb over 1 acre of land and therefore would be required to comply with the Construction General Permit issued by the State Water Board under Order 2009-0009-DWQ. On-site construction activities subject to the Construction General Permit include clearing, grading, excavation, and stockpiling. The Construction General Permit also requires the development of a SWPPP by a certified Qualified SWPPP Developer. A SWPPP identifies all

[35] EKI Environment and Water, Inc., 2019a. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California, October 4.

[36] Wood Environmental & Infrastructure Solutions, Inc., 2019. Appendix F, Groundwater Remedy Modifications, 5441 International Boulevard, Oakland, California, April.

potential pollutants and their sources, including erosion, sediments and constructions materials and includes a list of Best Management Practices (BMPs) to reduce discharges of construction-related stormwater pollutants. A SWPPP includes a detailed description of controls to reduce pollutants and outlines maintenance and inspection procedures and is kept onsite for ongoing monitoring requirements. The Preliminary Erosion Control Plan[37] for the project (included in Appendix D of the RDIP Addendum) indicates that erosion and sedimentation control measures would include a stabilized construction entrance, placement of straw wattles around the perimeter of the project site and adjacent to existing curb inlets, placement of sand bags and inlet filter fabric at existing curb inlets, and placement of rock filter bags around storm drain drop inlets that would be installed at the project site. A preliminary Construction SWPPP (included in Appendix M of the RDIP Addendum) has also been prepared. The SWPPP indicates that during demolition and remediation excavation activities, the existing sediment control measures (fiber rolls and filter fabric for upstream storm drain inlet protection, stormwater treatment via bag filters at manhole MH-23, and inlet filtration at manhole MH-24) would remain in place. The SWPPP indicates that additional BMPs to address sediment in stormwater runoff would include protection of off-site storm drain inlets with gravel bag berms or wattles filled with granular activated carbon and filter fabric, decontamination of truck tires as outlined in the Decontamination Plan (Appendix I of the RDIP Addendum), dust control measures including street sweeping as outlined in the Dust Control Plan (Appendix J of the RDIP Addendum), and additional BMPS such as silt fences, straw bales, sand dikes, and sediment traps, if necessary, based on inspection and evaluation of the project site's BMPs and stormwater monitoring. In the event a major storm is predicted, the contractor or a representative of the applicant would evaluate the need for removal of filter fabric from storm drain inlets or replacing the inlet with a filter BMP designed to handle higher flows in order to reduce the potential for localized flooding. Under existing programs, the project applicant must submit evidence of compliance with Construction General Permit requirements to the City, in accordance with SCA-HYD-2 (# 46).

The project site is impacted by PCBs in building materials and soil and PCB-impacted sediment has been identified in storm drains in and near the project site in the past. The San Francisco Bay water quality is impaired by PCBs and a TMDL has been established for PCBs in San Francisco Bay. Therefore, any additional discharge of PCBs in stormwater runoff could contribute to the impairment and would be considered a violation of water quality standards. The USEPA has indicated that stormwater and any collected sediments should be sampled and analyzed for PCBs at the final discharge point before the water leaves the project site, and that stormwater and sediment sampling should be included in the overall monitoring program for the project site. [38] The SWPPP included in Appendix M of the RDIP Addendum indicates that sampling of stormwater discharges would be performed during construction in accordance with

[37] Kier & Wright, Civil Engineers & Surveyors, Inc., 2019. Preliminary Site Improvement Plans of GE Site for Bridge Development, Oakland, California, April.

[38] Ron Leach, 2018b. Email correspondence between Ron Leach of USEPA and Deepa Gandhi of EKI, November 16.

the requirements of the Construction General Permit and USEPA while the storm drain leading off-site (downstream of manhole MH-24) is not plugged. Sampling for PCBs would be performed as part of the non-visible pollutant monitoring program required by the Construction General Permit, and would be conducted at manhole MH-24 during qualifying storm events. In addition, pH monitoring of stormwater runoff may also be conducted if there are sources of pH altering materials present at the project site (i.e., crushed concrete). Non-visible pollutant monitoring in stormwater would continue until the storm drain line is plugged and there is no off-site discharge. The concrete curb around the perimeter of the project site would be left in place after the cap is removed and the storm drain at manhole MH-24 is plugged to prevent stormwater from leaving the project site, and stormwater would infiltrate into the ground or be removed if needed. If stormwater would need to be removed, it would be stored in above ground tanks, tested, and treated, if needed, prior to on-site re-use for dust control or discharge to the sanitary sewer or storm drain. USEPA would be notified within 3 days if PCBs are detected in stormwater runoff or storm drain sediment samples.[39]

The SWPPP also indicates that the condition of the 24-inch diameter storm drain located immediately downstream of manhole MH-24 would be inspected and documented with video inspection equipment prior to the start of construction and immediately after the completion of cap installation at the project site to evaluate potential sediment accumulation.[40] If PCBs are detected during stormwater or sediment sampling, and if post redevelopment inspection of the 24-inch diameter storm drain shows that sediment is present, USEPA would require the applicant to perform cleaning of the 24-inch diameter storm drain.[41]

Compliance with USEPA requirements, existing State regulations, and City of Oakland SCAs would ensure that potential impacts to water quality during construction of the project or variant would be less than significant.

Operation Period Impacts. During the operational phase of the proposed project, pollutants associated with vehicles (e.g., fuel, oil/lubricants, brake dust, and fallout from exhaust) would be deposited on the surface of parking areas and driveways which would contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Debris and particulates that gather on impervious surfaces such roofs can also add heavy metals and sediment to the pollutant load in runoff. In addition, landscape maintenance activities may involve the use of chemicals such as pesticides/herbicides and fertilizers which could also impact the quality of stormwater runoff. Long-term degradation of runoff water quality from the project site could adversely affect water quality in the receiving waters if the stormwater runoff is not appropriately controlled and treated.

[39] EKI Environment and Water, Inc., 2019a. Op. cit.

[40] Ibid.

[41] Ron Leach, 2019. Email correspondence between Ron Leach of USEPA and Cem Atabek of Baseline, October 18.

Because the proposed project or variant would create over 10,000 square feet of new impervious surfaces, the proposed project would be required to comply with Provision C.3 of the MRP.[42] Additionally, because the proposed project would include alteration of over 50 percent of the impervious surface of the previously existing development that was not subject to Provision C.3 of the MRP, stormwater treatment systems at the project site must be designed and sized to treat stormwater runoff from the entire site. As described above, Provision C.3 of the MRP requires implementation of LID source control, site design, and stormwater treatment. LID employs principles such as preserving and recreating natural landscape features and minimizing impervious surfaces to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. Under the MRP, the preparation of a Stormwater Control Plan would be required for the proposed project which would present the design elements and implementation measures that would be used to meet MRP requirements. The proposed project is exempt from hydromodification requirements of Provision C.3 of the MRP because the project site is not located within an area designated as susceptible to hydromodification,[43] and stormwater runoff from the project site is conveyed through underground storm drains/culverts and tidally influenced engineered channels which discharge to San Leandro Bay.

The proposed project or variant would be required to comply with SCA-HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects, which requires compliance with provision C.3 of the MRP, and the preparation and implementation of a Post-Construction Stormwater Management Plan, which would include and identify stormwater control and treatment systems. Compliance with SCA-HYD-3 also requires the project applicant to enter into a maintenance agreement with the City, to ensure adequate installation/construction, operation, maintenance, inspection, and reporting of any on-site stormwater treatment measures.

After redevelopment, stormwater runoff on the project site would be collected using a new system consisting of a new retaining wall/curb around the perimeter of the project site and new drainage/catch basins for the entire project site that would convey runoff to a new storm drain system beneath the project site. The final discharge location before stormwater leaves the project site would be manhole MH-24R, the replacement manhole to be installed in the same location as existing MH-24. The new stormwater collection system and site grades would be designed to keep runoff on-site, restrict run-on from off-site, provide uniform drainage of the project site to prevent ponding except in a designated on-site aboveground detention area during high flow storm events (as required to meet the City's Storm Drainage Design

[42] Regional Water Board, 2015. Op. cit.
[43] Regional Water Board, 2015. Op. cit.

Standards). The new stormwater system would also provide treatment as required by local, regional, and State agencies.[44]

A Memorandum[45] regarding surface water management is included in Appendix D of the RDIP Addendum. The Memorandum indicates that stormwater from the project site should not be infiltrated into the ground due to the potential to mobilize contaminants in the soil; therefore, some traditional LID stormwater treatment methods may not be appropriate for the proposed project. The Memorandum proposes to treat stormwater runoff from the project site with non-LID treatment measures such as media treatment basin and/or the various on-site and off-site alternatives described in Appendix J of the MRP, and per City standard requirements. The exact measure or combination of various measures to be used for this project would be further evaluated with the City during the construction design phase and would incorporate USEPA requirements for stormwater and sediment sampling. A hydro-brake system would be installed to control the rate of discharge to the public storm drain system and help reduce the surface storage during a major storm, as approved by the City.[46] A Preliminary Grading and Drainage Plan[47] is included in Appendix D of the RDIP Addendum which indicates that drive aisles, parking areas, and landscaped areas in the southern and western portions of the project site would serve as potential surface ponding areas with ponding depths varying from 5 to 12 inches.

An operation-period industrial facility SWPPP would be developed for inclusion in the Operations, Maintenance, and Monitoring Plan Addendum to document the stormwater controls on the project site and their long-term maintenance. The SWPPP would also describe wet season stormwater and sediment sampling requirements for PCBs requested by USEPA, which would include sampling for PCBs twice in the first year after redevelopment, and then annually thereafter until the next five-year review, when the frequency for wet season stormwater and sediment sampling for PCBs would be reassessed.[48]

Extraction and treatment of contaminated groundwater using the GETS would continue during operation of the project. Some of the extraction and monitoring wells would require relocation or removal to accommodate the proposed project, but the modified well network would continue to provide for VOC source control and containment.[49] Details regarding the proposed removal and replacement of GETS components are discussed in Section 4.2, Hazards and Hazardous Materials. The extracted contaminated groundwater is currently treated via an air stripper and

[44] EKI Environment and Water, Inc., 2019a. Op. cit.
[45] Kier & Wright, Civil Engineers & Surveyors, Inc., undated. Memorandum.
[46] Ibid.
[47] Kier & Wright, Civil Engineers & Surveyors, Inc., 2019. Op. cit.
[48] EKI Environment and Water, Inc., 2019a. Op. cit.
[49] Ibid.

activated carbon filter and then discharged to the sanitary sewer in accordance with an EBMUD wastewater discharge permit.[50]

Compliance with SCA-HYD-3, the MRP, and USEPA requirements for monitoring of PCBs in stormwater runoff would ensure that the proposed project or variant would result in less-than-significant impacts to water quality during operation of the project.

b. Groundwater Supplies. The majority of the project site (approximately 20 acres) is, under existing conditions, covered with impervious surfaces consisting of structures and asphalt pavement. There is an approximately 4-acre pervious area in the eastern portion of the project site, where the ground surface is covered by a 6-inch thick layer of crushed rock underlain by a 4-inch thick layer of low permeability bentonite-soil mixture (known as the bentonite-soil cap).[51] Because the entire site is currently capped either with impervious surfaces or the low permeability bentonite-soil cap, infiltration and groundwater recharge at the project site is limited under current conditions. A Geotechnical Investigation[52] prepared for the project site indicates that the near surface soils at the project site are clayey and are expected to have infiltration rates of less than 0.2 inches per hour, which significantly limits infiltration of stormwater.

The proposed project would eliminate all pervious area on the project site, as areas of proposed landscaping would be constructed in raised planters above the concrete cap. While the increase in impervious surfaces could reduce infiltration and recharge of groundwater beneath the site, the decrease in infiltration and recharge of groundwater would not be substantial due to the limited infiltration under current conditions and the limited infiltration capacity of soil underlying the project site. In addition, because shallow groundwater beneath the project site is contaminated, infiltration of water to the subsurface must be limited as part of the remedial objective of mitigating migration of contaminated groundwater away from the project site. Therefore the proposed project would have a less-than-significant impact related to groundwater recharge and would not conflict with the protection of groundwater recharge as stipulated in the South East Bay Plain GMP.[53]

The proposed project includes measures to improve groundwater quality by performing remedial excavation and off-site disposal of soil impacted with PCBs and VOCs, which could otherwise continue to be sources of groundwater contamination. Additionally, operation of the GETS would continue during project operation which would continue to remediate contaminated groundwater and mitigate the migration of contaminated groundwater away from the project site. Therefore the project would not conflict with the South East Bay Plain GMP's objective of improving groundwater quality.

[50] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.

[51] Ibid.

[52] Cornerstone Earth Group, 2018. Geotechnical Investigation, 5441 International Boulevard, Oakland, California, October 25.

[53] East Bay Municipal Utility District (EMBUD), 2013. Op. cit.

Construction-related dewatering would be temporary and limited to areas of excavation on the project site and would not substantially contribute to depletion of groundwater supplies. Groundwater extraction would continue to occur during operation of the project through operation of the GETS. The current operation and maintenance of the GETS includes periodic monitoring of groundwater levels to evaluate the capture zones of the extraction wells and adjustment of pumping rates to optimize the efficiency of the GETS (i.e., minimize the amount of groundwater extraction and treatment required to ensure adequate capture zones and removal of contaminants).[54] Operation and maintenance of the GETS during operation of the project would be similar to current conditions. Additionally, because the groundwater beneath the project site is contaminated, it would not be suitable for beneficial uses; therefore, the extraction of the groundwater would not be depleting a useable groundwater resource. Based on the information above, the project would not conflict with the South East Bay Plain GMP's objective of preserving basin storage to ensure sustainable use of the basin.

The proposed project or variant would have a less-than-significant impact related to groundwater recharge and would not conflict with the protection of groundwater recharge as stipulated in the South East Bay Plain GMP.[55]

c. Erosion and Siltation.

Construction Period Impacts. As discussed above, the proposed project would be required to comply with the Construction General Permit, which requires preparation and implementation of a SWPPP including erosion and sediment control BMPs, and SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction, which requires construction activities to be performed under an Erosion and Sedimentation Control Plan. Compliance with these State and local regulations would ensure that the proposed project or variant would result in less-than-significant impacts related to erosion and siltation during construction.

Operation Period Impacts. During operation of the project, the entire project site would be developed with pavement surfaces, a building, and landscaped areas (imported clean topsoil would be used in the landscaped areas), therefore no exposed soil would be present that could be subject to erosion and result in siltation. As discussed above, stormwater runoff from the project site is conveyed through underground storm drains/culverts until reaching tidally-influenced engineered channels that discharge into San Leandro Bay. Therefore runoff from the project site would not result in erosion or siltation related to discharging runoff into creeks or soil-lined engineered channels. As discussed previously, the proposed project would be required to comply with Provision C.3 of the MRP, which would ensure that stormwater runoff form the project site would be controlled and treated such that potential silt in stormwater runoff would be removed prior to discharge to off-site stormwater drainage systems. The project or

[54] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.
[55] East Bay Municipal Utility District (EMBUD), 2013. Op. cit.

variant would therefore have a less-than-significant impact related to erosion or siltation during operation.

d. Result in Flooding. The project site is not located within a FEMA-designated 500-year or 100-year flood hazard zone or area protected from flooding by levees.[56] The proposed project or variant would convey stormwater runoff to the same off-site stormwater drainage systems which currently serve the project site.

The proposed project or variant would be required to comply with SCA-HYD-3: NPDES C.3 Stormwater Requirements for Regulated Projects, which requires preparation and implementation of a Post-Construction Stormwater Management Plan that must include and identify the location and size of new and replaced impervious surface; directional surface flow of stormwater runoff; location of proposed on-site storm drain lines; site design measures to reduce the amount of impervious surface area; and the method used to hydraulically size stormwater runoff treatment measures. As discussed above, a Preliminary Grading and Drainage Plan[57] is included in Appendix D of the RDIP Addendum which indicates that drive aisles, parking areas, and landscaped areas in the southern and western portions of the project site would serve as potential surface ponding areas with ponding depths varying from 5 to 12 inches. Because the site would be designed to accommodate and contain this surface ponding, it would not be considered substantial flooding. A hydro-brake system would be installed to control the rate of stormwater discharge to the public storm drain system and help reduce the surface storage during a major storm, as approved by the City.[58] Compliance with SCA-HYD-3 and the City's review of the Post-Construction Stormwater Management Plan would ensure that appropriate stormwater controls are incorporated into the project design to ensure that changes in drainage patterns and stormwater runoff from the proposed project or variant would have less-than-significant impacts related to flooding on- or off-site.

e. Exceed Storm Drain System Capacity. As discussed above, the project would be constructed to accommodate surface storage of runoff during a major storm and a hydro-brake system would be installed to control the rate of stormwater discharge to the public storm drain system. Compliance with SCA-HYD-3 and the City's review of the Post-Construction Stormwater Management Plan would ensure that appropriate stormwater controls are incorporated into the project design to ensure that changes in drainage patterns and stormwater runoff from the proposed project or variant would have less-than-significant impacts related to exceeding the capacity of existing storm drain systems.

f. Contribute Polluted Runoff. As discussed above, compliance with the requirements of SCA-HAZ-1, SCA-HAZ-2, SCA-HYD-1, SCA-HYD-2, SCA-HYD-3, the Construction General Permit, the MRP, and USEPA requirements for monitoring of PCBs in stormwater runoff, would

[56] Federal Emergency Management Agency (FEMA), 2018. Op. cit.
[57] Kier & Wright, Civil Engineers & Surveyors, Inc., 2019. Op. cit.
[58] Ibid.

ensure that the proposed project or variant would result in less-than-significant impacts related to polluted runoff.

g. Otherwise Degrade Water Quality No other potential impacts to water quality were identified beyond those discussed above.

h. Place Housing in a 100-Year Flood Hazard Area. The proposed project does not include housing. Therefore no impacts related placing housing within a FEMA-designated 100-year flood hazard zone would occur.

i. Place Structures in a 100-Year Flood Hazard Area. As discussed above the project site is not located within a FEMA-designated 100-year flood hazard zone. Therefore, no impacts related to placing within a FEMA-designated 100-year flood hazard zone would occur.

j. Expose People or Structures to Flooding. As discussed above, the project site is not located within a FEMA-designated 500-year or 100-year flood hazard zone or area protected from flooding by levees, and compliance with SCA-HYD-3 and the City's review of the Post-Construction Stormwater Management Plan would ensure that the proposed project would have less-than-significant impacts related to flooding on- or off-site. The project site is not located in a dam failure inundation area.[59] Therefore the project would not expose people or structures to significant risk of loss, injury, or death involving flooding.

k. Seiche, Tsunami, or Mudflow. Seiches are not considered a hazard in the San Francisco Bay based on the natural oscillations and geometry of San Francisco Bay.[60] The only threat of large-scale damage from seiches in Oakland appears to come from downstream flooding that would be caused by large volumes of water overtopping a dam or reservoir.[61] Since the project site is not located in a dam failure inundation area as indicated above, the likelihood of flooding at the project site resulting from seiches is negligible. The project site is not located in a tsunami inundation area. [62]

A mudflow is defined by FEMA as "a river of liquid and flowing mud on the surfaces of normally dry land areas, as when earth is carried by a current of water. Other earth movements, such as landslide, slope failure or a saturated soil mass moving by liquidity down a slope, are not mudflows".[63] The area surrounding the project site does not contain steep terrain, and there are

[59] City of Oakland, 2004. Op. cit.

[60] Borrero, J., Dengler, L., Uslu, B., Synolakis, C., 2006. Numerical Modeling of Tsunami Effects at Marine Oil Terminals in San Francisco Bay, June 8. Report prepared for: Marine Facilities Division of the California State Lands Commission.

[61] City of Oakland, 2004. Op. cit.

[62] California Emergency Management Agency, 2009. Tsunami Inundation Map for Emergency Planning, Oakland East Quadrangle, July 31.

[63] Federal Emergency Management Agency (FEMA), 2019. Definitions web page. Available at: https://www.fema.gov/national-flood-insurance-program/definitions, accessed March 28.

no river or stream channels that could support and convey a mudflow in the vicinity of the project site. In addition, the proposed project would not exacerbate the likelihood of a mud-flow occurring. Therefore, the project would not result in impacts related to mudflows.

l. Result in Erosions, Siltation or Flooding from Altering Drainage Patterns, Including Altering a Creek, River, or Stream. The proposed project would not alter a creek, river, or stream. As discussed previously, the proposed project would alter drainage patterns and compliance with State and local regulations including the Construction General Permit, the MRP, SCA-HYD-1, SCA-HYD-2, and SCA-HYD-3 would ensure that the proposed project or variant would result in less-than-significant impacts related to erosion/siltation and flooding.

m. Fundamentally Conflict with the City of Oakland Creek Protection Ordinance. The proposed project would not alter a creek and stormwater runoff from the project site does not discharge into a creek, therefore the proposed project or variant would not conflict with the City's Creek Protection Ordinance.

2. Cumulative Impacts

The geographic area of concern for cumulative hydrology and water quality impacts to stormwater and surface water is the watersheds that receive runoff form the project site (the San Francisco Bay Watershed on a Regional level, and the Peralta Creek Watershed and San Leandro Bay Watershed on a local level)[64] and includes the off-site stormwater drainage systems (underground storm drains and engineered channels) and water bodies (engineered channels, San Leandro Bay, and San Francisco Bay) that receive runoff from the project site. The geographic area of concern for cumulative hydrology and water quality impacts to groundwater is the South East Bay Plain basin as defined in the South East Bay Plain GMP.[65]

a. Groundwater. The proposed project or variant includes excavation and off-site disposal of soil impacted with PCBs and VOCs, which could otherwise continue to be sources of groundwater contamination. Additionally, operation of the GETS would continue during project operation which would continue to remediate contaminated groundwater and mitigate the migration of contaminated groundwater away from the project site. Therefore, the project or variant would contribute towards improving groundwater quality.

The project would have essentially no effect on recharge of groundwater beneath the site because negligible recharge occurs under existing conditions and negligible recharge should occur (by design) under the completed project. Therefore, the project or variant would not have a cumulatively considerable impact related to impeding groundwater recharge.

The localized and limited lowering of groundwater levels through construction related dewatering or operation of the GETS would not be expected to result in significant subsidence;

[64] Alameda County Flood Control District, 2019. Op. cit.
[65] East Bay Municipal Utility District (EMBUD), 2013. Op. cit.

and because the GETS has been in operation since March 2015, subsurface conditions have likely reached a steady state and any potential subsidence related to groundwater extraction has likely stabilized by this time.

Based on the information above, the project or variant would not have a cumulatively considerable impact related to conflicting with the South East Bay Plain GMP's objectives of maintaining or improving groundwater quality, protecting groundwater recharge, preserving basin storage, or managing potential land surface subsidence to ensure sustainable use of the basin.

b. Stormwater and Surface Water. Stormwater discharges are affected by urban pollutants that contribute to the degradation of water quality in surface waters near the project site, including engineered channels, San Leandro Bay, and San Francisco Bay. Common urban pollutants in stormwater include petroleum hydrocarbons, sediments, metals, pesticides, and trash. Past, current, and reasonably foreseeable projects in the vicinity of the project site could result in cumulative impacts associated with stormwater discharges, similar to the potential impacts from construction and operation of the proposed project. In order to adequately address cumulative water quality impacts, stormwater regulations have become progressively more stringent since the passage of the federal CWA, and current NPDES permits now require new development and redevelopment projects to manage and treat all significant sources of stormwater pollutants and reduce runoff. Under existing conditions, filtration of stormwater runoff from the project site occurs to remove potential PCBs impacted sediment. Compliance with the requirements of SCA-HAZ-1, SCA-HAZ-2, SCA-HYD-1, SCA-HYD-2, and the Construction General Permit would ensure that the proposed project or variant would result in less-than-significant impacts to water quality during construction. Compliance with SCA-HYD-3, the MRP, and USEPA requirements for monitoring of PCBs in stormwater runoff would ensure that the proposed project or variant would result in less-than-significant impacts to water quality during operation of the project. Therefore, any contribution of the project or variant to the cumulative water quality impact would not be cumulatively considerable.

Because the proposed project or variant would increase the amount of impervious area, the amount of stormwater runoff leaving the project site would increase compared to the existing condition. The flow rate and volume of stormwater being discharged to the City's storm drain system would be controlled through a hydro-brake system and allowing for surface ponding on the project site. Compliance with SCA-HYD-3 and the City's review of the Post-Construction Stormwater Management Plan would ensure that appropriate stormwater controls are incorporated into the project design to ensure that changes in drainage patterns and stormwater runoff from the proposed project or variant would have less-than-significant impacts related to exceeding the capacity of existing storm drain systems or resulting in flooding on- or off-site. Therefore, the proposed project or variant would not have a cumulatively considerable impact on flooding or exceeding storm drainage capacity.

5.0 ALTERNATIVES

CEQA and the CEQA Guidelines require the analysis of a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice, even if those alternatives "impede to some degree the attainment of the project objectives, or would be more costly." An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The following discussion is intended to inform the public and decision-makers of the relative environmental impacts of the potentially feasible alternatives that would substantially lessen the significant impacts of the proposed project (demolition of the buildings on the site with the exception of the bulkhead portion of Building #1, remediation of the site and construction of a new warehouse building with site access provided via International Boulevard) and San Leandro Street access variant (demolition, remediation and construction same as the proposed project with site access for passenger vehicles provided via International Boulevard and for trucks via a new access point to San Leandro Street). This chapter is divided into four sections. The first section briefly restates the objectives and impacts of the proposed project. The second section provides a brief discussion of alternatives that were considered but rejected from further analysis. The third section describes the principal characteristics of the alternatives considered in this section and briefly compares these alternatives to the proposed project. The last section discusses the environmentally-superior alternative.

5.1 PROJECT OBJECTIVES AND IMPACTS

The proposed project, the San Leandro Street access variant and the project objectives are described in detail in Chapter 3.0, Project Description. The potential environmental effects of implementing the proposed project are analyzed in the individual topic sections in Chapter 4.0, Setting, Impacts, and Mitigation Measures, with an emphasis on the significant unavoidable impacts identified in Section 4.1, Cultural Resources and Tribal Cultural Resources, and Section 4.5, Greenhouse Gas Emissions and Energy.

A. Project Objectives

The objectives for the project are to:

- Remediate and redevelop the site to return it to productive use as an employment center while protecting human health and the environment.

- Protect human health and the environment by installing a new protective cap on the site, abating PCBs, continuing groundwater remediation after redevelopment, and mitigating vapor intrusion to allow redevelopment that preserves and retains the front of Building #1.
- Comply with regulatory agency oversight and requirements, including but not limited to those of the U.S. Environmental Protection Agency (USEPA) and California Department of Toxic Substances Control (DTSC).
- Remove and dispose of contaminated materials during remediation activities from defined site areas in licensed and regulated off-site locations per direction from USEPA and DTSC.
- Eliminate blight and comply with the City's 2010 Declaration of Public Nuisance and the 1993 DTSC Covenant of Deed Restriction and remove the reported unsafe and hazardous conditions on the site.
- Redevelop the site with a use that complies with City General Plan, Zoning Code and building codes.

B. Project Impacts

It has been determined that the following potential effects of the proposed project and variant would be less-than-significant with standard conditions of approval (SCAs) and mitigation measures or have no impact for the following topics: aesthetics, shadow and wind; agricultural and forestry resources; air quality; biological resources; geology and soils; hazards and hazardous materials; hydrology and water quality; land use and planning; mineral resources; noise; population and housing; public services; recreation; transportation and circulation, and utilities and service systems. Each of these topics is addressed by topic in Chapter 4.0 of this EIR or discussed in Chapter 6.0, Other CEQA Considerations, see subsection 6.4.

For the proposed project, the following impacts were determined to be significant and unavoidable, and cannot be reduced to a less-than-significant level with implementation of mitigation measures:

- Demolition of Buildings #1 and #2 would result in significant and unavoidable impacts to historical buildings and an Area of Primary Importance (API) that qualify as historical resources under CEQA, and
- Demolition of Buildings #1 and #2 on the project site would contribute to a significant cumulative impact to historical resources in Oakland.
- Project construction and operation would generate GHG emissions that would exceed the City's target threshold and result in a significant and unavoidable impact.
- Project operations could conflict with applicable GHG plans, policies, or regulations resulting in a significant and unavoidable impact.
- Project construction and operation would generate GHG emissions and would contribute to a significant and unavoidable cumulative impact.

This evaluation of alternatives to the project focuses on those alternatives that can avoid or reduce the significant unavoidable impacts identified above.

5.2 ALTERNATIVES CONSIDERED BUT REJECTED FROM FURTHER STUDY

The following alternatives to the project were considered by the City as Lead Agency but were rejected from further study for the reasons described below.

Relocating one or more of the historic buildings to another site (a Building Relocation alternative) was considered during the environmental review process but rejected from further study. The City discourages demolition of historical resources and, pursuant to Policy 3.7 of the Historic Preservation Element (HPE), encourages "reasonable" efforts to relocate such resources. However, the relocation of Buildings #1 and/or #2 is deemed to be infeasible due to the extensive PCB contamination in the building materials, concrete and soil, the other hazardous materials present in the building materials, as discussed below.

As described in Section 4.2, Hazards and Hazardous Materials, the interior walls and surfaces (bricks, steel beams, wood) in Buildings #1 and #2 are coated with PCB- and lead-based paint. In addition, PCBs are present in the concrete floors from historic manufacturing and equipment maintenance that took place in these buildings. The shingles on the roof of Building #1 and the caulking in the windows of Building #2 contain asbestos. If the buildings were to be relocated, a site would need to be found, and prior to moving either or both structures, the contaminated surfaces and materials would first need to be rehabilitated, as moving the contaminated buildings to a new location would cause a blighting influence and a new significant impact at the new site. Due to the level of contamination in the building materials (see discussion in Section 4.2, Hazards and Hazardous Materials) and the size of the buildings, it is unknown whether the buildings could be adequately remediated to allow reuse, or if they would survive being moved. Therefore, due to the extensive costs to remediate the buildings and shore them up for moving (if possible) and the lack of an appropriate site to move the building(s) to, this alternative was deemed to be infeasible and not further considered.

5.3 PROJECT ALTERNATIVES

The four alternatives to the proposed project discussed in this chapter are the following:

- The **No Project alternative**, which assumes the continuation of existing conditions within the project site. None of the buildings would be removed from the site under this alternative, and only ongoing remediation and monitoring activities required by DTSC and USEPA would continue.
- The **Approved Remedy alternative**, would be consistent with the DTSC and USEPA approved 2011 remedial action plan ("RAP")[1] risk-based clean up and would involve

[1] Geosyntec Consultants, 2011. Remedial Action Plan, General Electric Site, 5441 International Boulevard,

demolition of all the buildings on the site, and installation of an asphalt overlay around the building locations and over slabs that would remain on the site. After capping the site, it would be vacant. While groundwater monitoring would continue, no additional remediation or reuse of the site would occur under this alternative.

- The **No Reuse alternative**, with two variants. Under Variant A, all of Building #1 and Building #2 would be protected in place, but not further used. Under Variant B, only Building #1 would be protected in place and Building #2 would be demolished and the pad capped with asphalt. Under either variant, neither building would be remediated or restored for use. Repairs would be made so that further building deterioration would not occur, and neither building would be occupied. This alternative further assumes the demolition of all other buildings on the site, capping of the site with an asphalt pad, and no remediation or new construction for future industrial use. Only remediation and monitoring activities currently required by DTSC and EPA would continue.
- The **Preservation and Reuse alternative** includes the remediation of the site for future industrial use, as described for the proposed project, and assumes that both Building #1 and Building #2 could be remediated and rehabilitated for industrial use in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, requirements of the City of Oakland, and USEPA and DTSC requirements, assumed to be similar to the requirements in the RDIP Addendum.[2] All other structures on the site would be demolished. After remediation, the remainder of the site would be developed with buildings or a building to support industrial uses.

Table 5-1 provides a brief comparison of the primary characteristics of each alternative to the proposed project and variant and to each other.

In the next section for each alternative, a brief discussion of its principal characteristics is followed by an analysis of anticipated environmental impacts. The emphasis of the analysis is on the alternative's relative adverse effects compared to the proposed project and a determination of whether or not the alternative would reduce, eliminate, or create new significant impacts. The analysis also considers each alternative's potential achievement of project objectives. The environmental impacts in the topical areas not discussed below (e.g., land use, geology, etc.) would be less than significant and similar to those associated with the proposed project.

Oakland CA, June.

[2] EKI, 2019. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California. August 26, revised October 4.

Table 5-1 Summary of Principal Characteristics of Alternatives

Proposed Project and Alternatives		Buildings to be Retained	Buildings Preserved Per Secretary of the Interior's Standards	Buildings Remediated/ Rehabilitated for Use?
Proposed Project/Access Variant		Building #1 bulkhead only	Yes	Yes, Industrial[a]
No Project Alternative		All	No	No
Approved Remedy Alternative		None	No	No
No Reuse Alternative	Variant A	#1, #2	No	No
	Variant B	#1	No	No
Preservation and Reuse Alternative		#1,#2	Yes	Yes, Industrial

[a] Based on additional sampling and approvals by USEPA and DTSC, the retained portion of Building #1 would either be rehabilitated for use or encapsulated. See Appendix L, Site Specific Health and Safety Plan of the RDIP Addendum.
Source: Baseline Environmental consulting, 2019.

A. No Project Alternative

1. Principal Characteristics

The No Project alternative assumes that the buildings on the site would remain in their current condition and would not be subject to demolition. Per CEQA Guidelines Section 15126(e), the No Project alternative is considered in order to compare the impacts of approving the proposed project to not approving the project. Under this alternative, Buildings #1 and #2 would not be demolished, and they would not be remediated, restored or brought up to current building codes. Buildings #1 and #2 would remain vacant and would continue to deteriorate. The remaining non-historic buildings on the site also would not be remediated, restored or brought up to current building codes. The site would continue to be surrounded by a fence. No productive uses of Buildings #1 and #2 or the non-historic buildings would occur on the site. The No Project alternative would comply with all the requirements of the Cleanup and Abatement Order (CAO No. 80-011) for the project site that requires the abatement of PCB discharges, as overseen by DTSC and USEPA. See Section 4.2, Hazards and Hazardous Materials, for additional discussion.

2. Analysis of the No Project Alternative

The No Project alternative would not achieve any of the project's objectives as it would not remove hazardous materials at the site or in the buildings and return the site to productive use, comply with the City's building codes and Declaration of Public Nuisance, or comply with the regulatory agencies (i.e., DTSC), USEPA, Bay Area Air Quality Management District (BAAQMD)) requirements and conditions. The No Project alternative is evaluated for the environmental topics analyzed in detail in this EIR.

a. Cultural Resources and Tribal Cultural Resources. Implementation of the No Project alternative would avoid demolition of the eight buildings on the site, including Buildings #1 and #2, which are cultural resources defined by CEQA and contributors to the 57th Avenue Industrial District API. Therefore, this alternative would not result in any of the direct significant and unavoidable impacts to historic resources identified in Section 4.1, Cultural Resources and Tribal Cultural Resources.

b. Hazards and Hazardous Materials. Demolition of the buildings would not occur, and the type and amount of remediation activities, as described for the project, would not take place under the No Project alternative. Therefore, hazardous materials would be left on the site and in the buildings, and significant impacts could result due to the accidental release of hazardous materials. These impacts could be more severe than for the proposed project.

c. Transportation and Circulation. As the site would remain vacant under the No Project alternative, there would be no new trips associated with the site and the existing conditions for traffic circulation would remain the same.

d. Air Quality. Under the No Project alternative, required remediation activities would be undertaken to a lesser degree than for the proposed project with fewer dust emission and management controls than would be required for the project that could result in new air quality impacts. However, no vehicle trips and consequent emissions would occur under this alternative.

e. Greenhouse Gas Emissions and Energy. Under the No Project alternative, the buildings would not be reused for warehouse uses, and there would no vehicle trips and consequent emissions. There would be no significant greenhouse gas emissions or impacts associated with implementation of this alternative, and the significant and unavoidable impacts associated with the proposed project would be avoided.

f. Noise and Groundborne Vibration. Under the No Project alternative, required remediation activities would be undertaken to a lesser degree than for the proposed project and no demolition and construction would occur resulting in less noise and vibration. Additionally, the buildings would remain vacant resulting in no operational noise or vehicle trips. Therefore, the potential for noise impacts would be less under this alternative.

g. Geology, Soils and Seismicity. Implementation of the No Project alternative would avoid demolition of the buildings on the site, and they would remain vacant. There would be no geological, soils or seismic impacts related to this alternative.

h. Hydrology and Water Quality. The type and amount of remediation activities, as described for the project, would not take place under the No Project alternative. Therefore, hazardous materials would remain in the soil and groundwater and significant impacts to water

quality could result due to the accidental release of hazardous materials. These impacts could be more severe than for the proposed project.

B. Approved Remedy Alternative

1. Principal Characteristics

The Approved Remedy alternative would be consistent with the DTSC and USEPA approved 2011 RAP risk-based clean up, the DTSC approved 2013 RDIP for the project site and the USEPA conditionally approved Toxic Substances Control Act (TSCA) Application for Risk Based PCB Cleanup.[3] The Approved Remedy alternative also would comply with all the requirements of the Cleanup and Abatement Order (CAO No. 80-011) for the project site that requires the abatement of PCB discharges, as overseen by DTSC and USEPA. City-required SCAs would also apply to this alternative. See Section 4.2, Hazards and Hazardous Materials, for additional discussion.

The alternative includes the removal of the above-grade building structures and the placement of additional capping materials over existing asphalt areas and some former building footprints, if they remain in place, and abandoning the subsurface stormwater system.[4] Additionally, the portions of the remedy developed in the RAP and RDIP for the project site that are ongoing and still required by DTSC and USEPA would be implemented. These activities could include: (1) additional targeted soil excavations for VOCs and PCBs; (2) operation of the groundwater extraction and treatment system (GETS); (3) stormwater management to mitigate potential migration of impacted sediments off-site; (4) monitoring natural attenuation of off-site groundwater; and (5) monitoring and maintenance of the remedial measures implemented thus far. After capping the site, it would be vacant and no reuse of the site would occur under this alternative.

2. Analysis of the Approved Remedy Alternative

While the Approved Remedy alternative would meet some project objectives and would include remediation activities to protect human health and the environment, these activities would not take place to the same extent as proposed for the project and described in Chapter 3.0, Project Description. Additionally, this alternative would not meet the basic objective of returning the site to productive use as an employment center. The alternative would generally meet the objectives of complying with regulatory agency oversight and requirements; installing a new protective cap on the site; removing and disposing of contaminated materials; abating PCBs, and continuing groundwater remediation. As the site would remain a fenced-off, vacant, asphalt lot on International Boulevard, this alternative would not meet the objective of eliminating blight to the same degree as the proposed project.

[3] Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, GE Oakland Site, Oakland, California, June.

[4] EKI, 2018. Evaluation of the Proposed Redevelopment with respect to the Requirements of the Approved Remedy, Bridge Point Oakland, 5441 International Boulevard, Oakland, California, September 6.

The Approved Remedy alternative is evaluated for the environmental topics analyzed in detail in this EIR.

a. Cultural Resources and Tribal Cultural Resources. Implementation of the Approved Remedy alternative would not avoid or reduce the project's significant unavoidable impacts to historical resources and an API, as Buildings #1 and #2 would be demolished along with all the other buildings under this alternative. This alternative would result in the same significant and unavoidable impacts to historic resources as the project.

b. Hazards and Hazardous Materials. Under the Approved Remedy alternative, all buildings would be removed and remediation and monitoring of the site would occur as required under agency oversight per the 2011 RAP and 2013 RDIP and with implementation of SCAs to reduce risks associated with hazardous materials. Impacts related to health risks associated with hazardous materials during demolition, remediation and monitoring would be similar to those associated with the proposed project.

c. Transportation and Circulation. As the site would remain vacant under the Approved Remedy alternative, there would be no new trips associated with the site and the circulation of traffic would remain the same as under existing conditions.

d. Air Quality. Under the Approved Remedy alternative, required remediation activities would be undertaken to a lesser degree than for the proposed project with potentially fewer dust emission and management controls than would be required for the project per the RDIP Addendum. Similar to the proposed project, with application of SCAs, air quality impacts are expected to be less than significant. No vehicle trips and consequent emissions would occur under this alternative, resulting in fewer health risks to sensitive receptors.

e. Greenhouse Gas Emissions and Energy. Under the Approved Remedy alternative, the site would remain vacant, and there would no vehicle trips and consequent emissions. There would be no significant greenhouse gas emissions or impacts associated with implementation of this alternative, and the significant and unavoidable impacts associated with the proposed project would be avoided.

f. Noise and Groundborne Vibration. Under the Approved Remedy alternative, required remediation activities, demolition of the buildings and construction of a new cap would occur resulting in temporary noisy conditions for a shorter period than under the proposed project. Additionally, the site would remain vacant after construction resulting in no operational noise or vehicle trips. Therefore, the potential for noise and vibration impacts would be less under this alternative.

g. Geology, Soils and Seismicity. Implementation of the Approved Remedy alternative would result in a vacant and capped site, and there would be no geological, soils or seismic impacts related to this alternative.

h. Hydrology and Water Quality. Under the Approved Remedy alternative, remediation of contaminated materials, operation of the GETS and monitoring of the groundwater would occur as required under agency oversight and with implementation of SCAs. Therefore, it is possible that impacts related to hydrology and water quality would be similar to or less than those associated with the proposed project.

C. No Reuse Alternative

1. Principal Characteristics

The No Reuse alternative was developed to avoid or reduce the project-related historic resource significant and unavoidable impacts and has two variants. Under Variant A, all of Building #1 and Building #2 would be repaired to the degree that they would not further deteriorate, protected in place, and would remain vacant as hazardous materials would still remain in the buildings themselves. Under Variant B, only Building #1 would be protected in place and Building #2 would be demolished and the pad capped with asphalt. Under either variant, neither building would be remediated, restored, or structurally renovated to allow occupancy; however, repairs would be made so that further building deterioration would not occur. Neither building would be occupied.

This alternative further assumes the demolition of all other buildings on the site, capping of the site with an asphalt pad, and no remediation or new construction for future industrial use. Only remediation and monitoring activities currently required by DTSC and EPA would continue.

The No Reuse alternative would be consistent with the DTSC and USEPA approved 2011 RAP risk-based clean up, the DTSC approved 2013 RDIP for the project site and the USEPA conditionally approved TSCA Application for Risk Based PCB Cleanup.[5] The No Reuse alternative also would comply with all the requirements of the Cleanup and Abatement Order (CAO No. 80-011) for the project site that requires the abatement of PCB discharges, as overseen by DTSC and USEPA. Additional plans and protective measures may be required to protect worker health and safety during building repair. City-required SCAs would also apply to this alternative. See Section 4.2, Hazards and Hazardous Materials, for additional discussion.

For implementation of Variant A, protection of Buildings #1 and #2, the following partial list of efforts would be needed:

- Demolition of buildings #4 (includes the asbestos roof), #8 (includes the asbestos roof), #17, #18, #20, #21, and ancillary structures (water tank, fire suppression system, etc.);
- Demolition contractor needed for mobilization and demobilization and performance bond;
- Dust control;
- Stormwater management;

[5] Wood Environmental & Infrastructure Solutions, Inc., 2018. Op. cit.

- Permitting, design and consultation with City and regulatory agencies;
- Transport and disposal of non-hazardous and hazardous materials: Resource Conservation and Recovery Act (RCRA) wastes; TSCA wastes; and
- Protection in place of Buildings #1 and #2 with exterior rehabilitation and repairs.

For implementation of Variant B, protection in place of only Building #1, following is a partial list of efforts that would be necessary:

- All of the items listed above with the inclusion of demolition of Building #2;
- Protection in place of Building #1 with exterior rehabilitation and repairs.

2. Analysis of the No Reuse Alternative

The No Reuse alternative would meet some but not all of the project objectives. While it would include some remediation activities to protect human health and the environment and remove some blighting influences, these activities would not take place to the same extent as proposed for the project. Additionally, the site would not be returned to productive use as an employment center under this alternative. The alternative would meet the objectives of complying with regulatory agency oversight and requirements; installing a protective cap on the site; removing and disposing of contaminated materials; abating PCBs, and continuing groundwater remediation.

The No Reuse alternative is evaluated for the environmental topics analyzed in detail in this EIR.

a. Cultural Resources and Tribal Cultural Resources. Implementation of the No Reuse alternative Variant A would protect in place the two buildings that are considered to be cultural resources. As described in Section 4.1, Cultural Resources and Tribal Cultural Resources, two buildings on the project site are listed in the City's Directory of Properties. Building #1, the GE Oakland Works Building, was assigned a Status Code of "2S2" in March 2006, indicating that it is an individual property determined eligible for the National Register of Historic Places by consensus through the Section 106 process and is listed in the California Register of Historical Resources. Building #2, the GE Insulation Department Building, was assigned a Status Code of "3D" in September 1995, indicating that it appears eligible "as a contributor to a National Register eligible district through survey evaluation." The 57th Avenue Industrial District API was assigned a Status Code of "7R" in February 1997, indicating that the District has been "identified in a reconnaissance level survey: not evaluated." Buildings #1 and #2 were recorded and evaluated by OCHS during its city-wide unreinforced masonry building survey conducted from 1990 to 1995 and are contributing elements to the 57th Avenue Industrial District API. Oakland Cultural Heritage Survey has assigned Building #1 a rating of "A1+" indicating that it is a property of "highest importance" and contributor to an API. Building #2 has a rating of "Dc1+" indicating it is a property of "minor importance" which could be a "property of secondary

importance" through repair, and a contributor to an API. Both of these buildings are listed in the Oakland Register.

Implementation of Variant A (protection in place of both Buildings #1 and #2) would avoid the direct significant and unavoidable impacts to historic resources identified in Section 4.1, Cultural Resources and Tribal Cultural Resources.

Implementation of the No Reuse alternative Variant B would protect in place Building #1 which is more visible within the 57th Avenue Industrial District API as it fronts on International Boulevard and has a higher rating. The other seven buildings on the project site would be demolished. Because Building #2 would be demolished with implementation of Variant B, this alternative would result in a direct significant and unavoidable impact to a historic resource and the API.

b. Hazards and Hazardous Materials. Implementation of the No Reuse alternative Variant A would include minor repairs to Buildings #1 and #2 to secure and weatherproof the buildings so that they would not continue to decline. This alternative does not include lead and PCB remediation in Buildings #1 and #2, or structural retrofits, or mechanical and electrical upgrades. Hazardous materials such as PCBs, lead, and asbestos would remain in Buildings #1 and #2. Soil and groundwater remediation as required under the 2011 RAP and 2013 RDIP for the project site would also occur and would reduce risks associated with hazardous materials. It is unknown what additional approvals and activities the agencies would require to protect worker health and safety during repair of Buildings #1 and #2 that are known to have contaminated materials on and in them; however it may be similar to what is required to remediate the bulkhead portion of Building #1 as described in the RDIP Addendum.

Implementation of the No Reuse alternative Variant B would include protection in place of only Building #1; however, hazardous materials such as PCBs, lead, and asbestos would remain in Building #1 under this alternative, and risks associated with hazardous materials could be similar to those of the proposed project.

c. Transportation and Circulation. As the buildings would remain vacant under the No Reuse alternative, there would be no new trips associated with the site and the circulation of traffic would remain the same as under existing conditions.

d. Air Quality. Under the No Reuse alternative, required remediation activities would be undertaken to a lesser degree than for the proposed project with fewer dust emission and management controls than would be required for the project that could result in more significant air quality impacts than for the proposed project. No vehicle trips and consequent emissions would occur under this alternative, resulting in fewer health risks to sensitive receptors after building repair.

e. Greenhouse Gas Emissions and Energy. Under the No Reuse alternative, the buildings would not be reused for warehouse uses, and there would no vehicle trips and consequent emissions. Therefore, there would be no significant greenhouse gas emissions associated with implementation of this alternative and the project's significant and unavoidable impacts would be avoided.

f. Noise and Groundborne Vibration. Under the No Reuse alternative, required remediation activities and building demolition would be undertaken to a lesser degree than for the proposed project resulting in less noise and vibration. Under either variant, Building #1, that is closest to sensitive receptors, would not be demolished resulting in less noise. Additionally, the remaining buildings would remain vacant resulting in no operational noise or vehicle trips. Therefore, the potential for noise impacts would be less under this alternative.

g. Geology, Soils and Seismicity. Under the No Reuse alternative two buildings would not be demolished but would remain vacant. There would be no geological, soils or seismic impacts related to this alternative.

h. Hydrology and Water Quality. The type and amount of remediation activities, as described for the project, would not take place under the No Reuse alternative. Therefore, more hazardous materials could remain in the soil and groundwater, and significant impacts to water quality could result due to the accidental release of hazardous materials. These impacts could be more severe than for the proposed project.

D. Preservation and Reuse Alternative

1. Principal Characteristics

The Preservation and Reuse alternative was developed to avoid or reduce the project-related historic resource significant and unavoidable impacts, allow for reuse of the historic buildings, and redevelopment of the remainder of the site. Under this alternative, the site would be remediated for future industrial use, and it assumes that both Building #1 (75,200 square feet) and Building #2 (45,200 square feet) could be remediated and rehabilitated for industrial use in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties, requirements of the City of Oakland, and USEPA and DTSC requirements. All other structures on the site would be demolished. After remediation, the remainder of the site would be developed with buildings or a building to support industrial uses.

As described above, due to the high levels of PCB and lead contamination in the building materials and the size of the buildings, it is unknown whether the buildings could be adequately remediated and shored up structurally to allow reuse. Additionally, use of a building that has PCB materials that are unauthorized for use is a violation of the TSCA. To allow remediation and reuse of Buildings #1 and #2 to occur, there would need to be an adequate investigation of PCB contamination and determination of TSCA compliance options approved by DTSC and USEPA. At a minimum, development under this alternative assumes that measures similar to

those identified in the RDIP Addendum, and described in Chapter 3.0, Project Description, would also be identified and applied to this alternative.

Portions of Buildings #1 and #2 are located above areas where solvents are present in groundwater. Similar to the proposed project, a vapor intrusion assessment and vapor intrusion mitigation would be required by DTSC if the buildings are rehabilitated for reuse, per this alternative.

Significant efforts would be required to reinforce structural elements (such as walls, roof, and supports) in Buildings #1 and #2 to meet safety requirements for future industrial use. Interior preservation activities would vary depending on final design and remediation requirements for paint and concrete (encapsulation, treatment, and/or removal as discussed above). The majority of activities would be associated with extensive characterization and verification sampling that would be required for the PCB remediation under USEPA's TSCA requirements.

2. Analysis of the Preservation and Reuse Alternative

The Preservation and Reuse alternative would meet most of the project objectives. While it would include remediation activities to protect human health and the environment and remove blighting influences, these activities, potentially, would not take place to the same extent as proposed for the project. If remediation of the buildings is feasible, the site may be returned to productive use under this alternative, and the creation of local jobs would be promoted. The alternative would meet the objectives of complying with regulatory agency oversight and requirements; installing a protective cap on the site; removing and disposing of contaminated materials; abating PCBs, and continuing groundwater remediation.

The Preservation and Reuse alternative is evaluated for the environmental topics analyzed in detail in this EIR.

a. Cultural Resources and Tribal Cultural Resources. Implementation of the Preservation and Reuse alternative would rehabilitate Buildings #1 and #2 in conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties for industrial use. These buildings would not be demolished, and impacts to these buildings, as well as the 57th Avenue Industrial District API to which they are contributors, and the cumulative impact identified for the proposed project would be less than significant.

b. Hazards and Hazardous Materials. Implementation of the Preservation and Reuse alternative would include extensive removal or sealing of hazardous materials in Buildings #1 and #2 for their reuse for light manufacturing, and demolition of the other six buildings on the site. Similar to the proposed project, this alternative could create hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials, or create significant hazards to the public or to the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials, including contaminated dust

and vapor, into the environment. It is unknown if the cleanup efforts could achieve the required standards to permit reuse, and/or if cleanup efforts could result in significant damage to the buildings rendering them unusable. Even with implementation of SCAs, this alternative could result in greater significant impacts related to public health and safety.

c. Transportation and Circulation. This alternative assumes Buildings #1 and #2 could be reused for industrial and manufacturing uses, and new buildings on other portions of the site could be constructed. Because multiple buildings would be maintained or constructed on the site, there would be fewer square feet of industrial use than in the one large warehouse building as proposed. As there would be fewer square feet of new uses and employees, it is expected that there would be fewer vehicle trips and that traffic and circulation impacts would also be less than significant, similar to the proposed project.

d. Air Quality. To allow remediation and reuse of Buildings #1 and #2 to occur under the Preservation and Reuse alternative, an adequate investigation of PCB contamination and determination of TSCA compliance options approved by DTSC and USEPA would be required. Additionally, it is assumed that the site remediation activities to allow for redevelopment and reduce health risks would require measures similar to those identified in the RDIP Addendum. As described above, there would be fewer vehicle trips associated with this alternative than with the proposed project. With application of City SCAs and implementation of required measures for dust and vapor emissions and management controls, air quality impacts are expected to be similar to the proposed project.

e. Greenhouse Gas Emissions and Energy. Under the Preservation and Reuse alternative, Buildings #1 and #2 would be reused for industrial uses and new buildings would be constructed, but not to the same size and extent as the proposed project. While the exact emissions are unknown because the extent of reuse is unknown, fewer emissions and new vehicle trips could be associated with buildings than for the proposed project, but air quality impacts are expected to be similar to the proposed project and significant and unavoidable. Noise and Groundborne Vibration. Under the Preservation and Reuse alternative, required remediation activities, building demolition, rehabilitation and construction would be undertaken resulting in noise and vibration similar to the proposed project. During operation, there is the potential for noise from new industrial uses and vehicle trips. However, with implementation of SCAs, noise and vibration impacts are expected to be similar to the proposed project and less than significant.

f. Geology, Soils and Seismicity. As they would be renovated for industrial uses, structural upgrades for Buildings #1 and #2 would not occur under this alternative. Therefore, even with application of SCAs, there could be new significant hazards to public health and safety related to seismic hazards under the Preservation and Reuse alternative.

g. Hydrology and Water Quality. Construction and operation period impacts associated with dewatering effluent, migration of contaminated groundwater and stormwater runoff similar to the proposed project are expected to occur with implementation of the Preservation and Reuse alternative. With implementation of the required effluent, groundwater and stormwater management and monitoring requirements and SCAs, this alternative could result in similar less-than-significant impacts to water quality.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires that an EIR identify the environmentally superior alternative in the strict sense that environmental impacts associated with its implementation would be the least of all scenarios examined (including the proposed project). Although CEQA requires the identification of the environmentally superior alternative, the decision-making process further considers the reasonableness and feasibility of all proposed alternatives, and CEQA does not require that the environmentally superior alternative be adopted.

This EIR concludes that Variant A of the No Reuse alternative is the environmentally superior alternative. Under this alternative, repairs would be made so that Buildings #1 and #2 would not continue to deteriorate, would be protected in place, and would remain vacant. The buildings would not be restored or remediated for contamination to allow for reuse. This alternative assumes demolition and capping of pads for all other buildings on the site. Variant A would reduce the blighting influence on the surrounding neighborhood, retain the historic resources, reduce risks associated with hazardous materials and avoid impacts associated with greenhouse gas emissions as the buildings and site would remain vacant.

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6.0 OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the growth-inducing impacts and significant irreversible changes that could result from implementation of the proposed project or the San Leandro Street access variant. The significant environmental effects and mitigation measures to minimize those effects of the project and the variant were identified in the individual topic sections of this EIR (Sections 4.1 through 4.8). This chapter includes the identification of significant unavoidable environmental effects should the proposed project be implemented and a discussion of the effects of the proposed project found not to be significant.

6.1 GROWTH-INDUCING IMPACTS

This section summarizes the project and variant's growth-inducing impacts on the surrounding community. According to CEQA, a project is typically considered growth-inducing if it would foster substantial economic or population growth. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or business parks (e.g., tech campuses) in areas that are currently only sparsely developed or are undeveloped. The project site is located in an urban area and was previously used by GE for manufacturing; maintenance and repair services; and storage. Demolition of the existing industrial buildings and construction of a new warehouse building would not result in direct or indirect population growth because the proposed project does not include the development of new housing units. Additionally, the project would have beneficial impacts in regards to economic growth as the site and existing buildings have been vacant since approximately 2005. Redevelopment of the site with a warehouse use would increase local employment opportunities in the surrounding community.

6.2 SIGNIFICANT IRREVERSIBLE CHANGES

An EIR must identify any significant irreversible environmental changes that could result from implementation of a proposed project. These may include current or future uses of non-renewable resources and secondary or growth-inducing impacts that commit future generations to similar uses. CEQA dictates that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. The CEQA Guidelines describe three distinct categories of significant irreversible changes: 1) changes in land use that would commit future generations; 2) irreversible changes from environmental accidents; and 3) consumption of non-renewable resources.

A. Changes in Land Use Which Commit Future Generation

The proposed project and variant to the project is the demolition of eight structures, remediation of contaminated areas to allow future use, and development of a warehouse. The proposed project would not commit future generations to development. Future development is restricted to

industrial uses and commercial uses on the portion of the site along Industrial Boulevard. The proposed use of the site is required to meet the California Department of Toxic Substances Control's (DTSC's) Covenant to Restrict Use of Property, as described in Chapter 3.0, Project Description.

B. Irreversible Damage from Environmental Accidents

No significant irreversible environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to the proposed remediation of existing hazardous materials and construction and use of the proposed warehouse. Compliance with federal, State, and local regulations, and implementation of City Conditions of Approval, would reduce to a less-than-significant level the possibility that hazardous substances within the project site and used within the warehouse building during operation would cause significant environmental damage. The proposed project has no design or operational features that would lead to irreversible damage associated with environmental accidents.

C. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes conversion of agricultural lands, loss of access to mining reserves, and non-renewable energy use. The project site is located within an urbanized area in the City of Oakland. No agricultural lands exist on the project site; therefore none would be converted to non-agricultural uses. The project site has no known existing mineral resources.

Implementation of the proposed project would require the use of energy, including energy produced from nonrenewable resources. However, the energy required to demolish the existing structures would be limited, and the energy needed for the warehouse use, which would be constructed to LEED gold standards, would also be limited and less than that used on the site when all the buildings were used and at capacity due to currently required energy saving building requirements, fixtures and features.

6.3 SIGNIFICANT UNAVOIDABLE ENVIRONMENTAL EFFECTS

The following significant unavoidable significant impacts have been identified for the project:

- Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA.
- Demolition of buildings on the project site would adversely affect two historical buildings and an Area of Primary Importance that qualify as historical resources under CEQA and would contribute to a significant cumulative impact to historical resources in Oakland.
- Project construction and operation would generate GHG emissions that would exceed the City's target threshold and result in a significant and unavoidable impact.

- Project operations could conflict with applicable GHG plans, policies, or regulations resulting in a significant and unavoidable impact.
- Project construction and operation would generate GHG emissions and would contribute to a significant and unavoidable cumulative impact.

6.4 EFFECTS FOUND NOT TO BE SIGNIFICANT

Based on a review of the proposed project and access variant and the City of Oakland's CEQA Thresholds of Significance Guidelines, the proposed project or variant would not result in significant impacts related to the following environmental topics, which are not further evaluated in the EIR. Some topics identified below would require implementation of the City's Standard Conditions of Approval (SCAs) prior to or during the demolition, remediation, and construction period to reduce impacts to a less-than-significant level. The SCAs are summarized below, as appropriate. Table 2-1 in Chapter 2, Summary, of this EIR also contains a summary of the environmental impacts and applicable SCAs.

A. Aesthetics, Shadow, Wind

The proposed project involves removing the structures on the site and redeveloping a site that the City determined was dangerous and unsafe, per the Declaration of Public Nuisance issued on May 21, 2010 (located in Appendix B).[1] The proposed project includes removal of all the industrial, warehouse and storage buildings on the site with the exception of the "bulkhead" portion of Building #1 (i.e., the front façade facing International Boulevard and a portion of the side of the building). This portion of Building #1 is an example of early-20th century utilitarian Classical Revival-inspired industrial architecture (see Figure 3- 7, which provides a conceptual view of this portion of the project). The building is also listed in the California Register of Historic Resources and is a contributing element to the 57th Avenue Industrial District API.

Because the proposed warehouse building would be approximately the same height as the remaining portion of Building #1 and within approximately 10 feet in height of the warehouse/ manufacturing portion of Building #1, construction of the new warehouse building would not have a substantial adverse effect on a scenic vista, nor would it damage scenic resources. While International Boulevard is State Route 185, it is not a designated scenic highway, and therefore the demolition of the warehouse portion of Building #1 (behind the restored front façade) would not create a significant aesthetic impact related to damage to a historic building. The buildings on the project site are vacant and dilapidated, and the site is located in an urban area that contains industrial and commercial uses and parking lots. Remediation and redevelopment of the site with a warehouse building would not degrade the existing visual character of this site or public views of the site. After rehabilitation and incorporation of the Building #1 historic façade into the new building and the addition of landscaping, the project

[1] City of Oakland, 2010. Declaration of Public Nuisance – Substandard (Declaration) on May 21, 2010 (Complaint #1001777), May 21.

would provide a beneficial effect on the visual character of the surrounding area. Safety lighting is currently in use at the site, and as all lighting for the proposed warehouse use would be designed to be adequately shielded and not spillover onto adjacent properties, the project would not be a substantial source of light or glare.

Except for the bulkhead portion of Building #1, the warehouse portion to be demolished is between 20 and 30 feet in height while Building #4 in a one-story building located in the northwest portion of the site near the rear yards of single-family homes fronting 54th Avenue. Although the proposed warehouse building is 38 feet in height, due to a 60-foot setback of the building from the rear yards of residential properties, the proposed building would not cast shadows that would substantially impair the function of an adjacent building using passive or active solar collecters. As there are no public or quasi-public parks in the vicinity of the project, there would be no effect on these resources from shadows cast by the project. As the historic façade of Building #1 would be incorporated into the proposed building that would be constructed at the same height as the facade, the project would not cast new shadows on this portion of Building #1.

As the proposed building is under 100 feet in height (i.e., 38 feet in height), a wind analysis is not required, and the project would not create winds that exceed 36 miles per hour for more than one hour during daylight hours during the year. Inclusion of Oakland's SCA-AES-1: Landscape Plan and SCA-AES-2: Lighting, listed below, would assist in reducing any potential aesthetic impacts to a less-than-significant level.

SCA-AES-1: Landscape Plan (#18)
a. Landscape Plan Required
Requirement: The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved Landscape Plan. The Landscape Plan shall be included with the set of drawings submitted for the construction-related permit and shall comply with the landscape requirements of chapter 17.124 of the Planning Code. Proposed plants shall be predominantly drought-tolerant.

Specification of any street trees shall comply with the Master Street Tree List and Tree Planting Guidelines (which can be viewed at http://www2.oaklandnet.com/oakca1/groups/pwa/documents/report/oak042662.pdf and http://www2.oaklandnet.com/oakca1/groups/pwa/documents/form/oak025595.pdf, respectively), and with any applicable streetscape plan.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: N/A

b. Landscape Installation
Requirement: The project applicant shall implement the approved Landscape Plan unless a bond, cash deposit, letter of credit, or other equivalent instrument acceptable to the Director of City Planning, is provided. The financial instrument shall equal the greater of $2,500 or the estimated cost of implementing the Landscape Plan based on a licensed contractor's bid.
When Required: Prior to building permit final
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

c. Landscape Maintenance
Requirement: All required planting shall be permanently maintained in good growing condition and, whenever necessary, replaced with new plant materials to ensure continued compliance with applicable landscaping requirements. The property owner shall be responsible for maintaining planting in adjacent public rights-of-way. All required fences, walls, and irrigation systems shall be permanently maintained in good condition and, whenever necessary, repaired or replaced.
When Required: Ongoing
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-AES-2: Lighting (#19)
Requirement: Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.
When Required: Prior to building permit final
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

B. Agricultural and Forestry Resources

The site is located in a General Industrial Zone, with a portion of the northeast end being zoned in a Neighborhood Commercial Zone as designated in Oakland's General Plan and Zoning Ordinance. The proposed project is not located in or near an agricultural area or forest land. Therefore, the proposed project would not convert farmland or conflict with an agricultural use or convert forest land to non-forest use.

C. Biological Resources

The proposed project was developed for industrial uses in the 1920s and is surrounded by manufacturing, residential, and commercial uses. There are no wetlands, creeks, or riparian zones located on the site or in the area nearby. Suitable habitat to support candidate, sensitive, or special-status species does not exist on the project site or surrounding area. Any vegetation on the property would not be disturbed or removed as part of the demolition. Therefore, no impacts to biological resources would occur.

D. Land Use and Planning

The proposed project consists of demolishing surface buildings (except for the bulkhead portion of Building #1) previously used for manufacturing, storage and research; remediating the site for hazardous materials per requirements of the U.S. Environmental Protection Agency (EPA) and DTSC, and redeveloping the site with an general industrial/warehouse use similar to previous uses on the site. The proposed project site is surrounded by a mix of commercial, residential and industrial uses. The majority of the site has a General Plan designation of General Industrial, which allows manufacturing and distribution uses, and a zoning designation of IG/S-19 General Industrial/Health and Safety Protection Overlay. A small portion of the site that has frontage along International Boulevard is within the Neighborhood Center Mixed Use General Plan designation and lies within the CN-3, Neighborhood Commercial Zone. The rehabilitated portion of Building #1 and the main office entry to the proposed building would be located within the CN-3 zoned area. The access variant would include the same remediation and warehouse

design and development as the project. However, as shown on Figure 3-12, the project site would be expanded to include leased Union Pacific right-of-way along the southwestern site boundary sufficient to allow project-related truck traffic to access the site to and from San Leandro Street via 54th Avenue. Implementation of the access variant would also require use of a small (0.07 acre) industrial site fronting on 54th Avenue zoned CIX-2. The proposed use of the railroad right-of-way and the small site for site access are allowed under current zoning. The proposed project or variant would not physically divide an established community; result in a fundamental conflict with adjacent land uses as there would be no change in use on the site; or conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

E. Mineral Resources

The project site is located in a developed urban area that has no known existing mineral resources. Therefore, there would be no impacts to mineral resources.

F. Population and Housing

The proposed project would not directly or indirectly induce population growth in the project vicinity. Due to the existing abatement orders and deed restriction, no residential development has occurred or can occur on the site, therefore, the proposed project would not create any new housing units. Demolition, remediation, and construction would allow for the creation of some temporary jobs, and the proposed warehouse building is expected to have an average of 200 employees on the site at any one time, and could provide employment opportunities to people already living in the region. The proposed project or variant would therefore not displace any existing housing units or people from the project site, and no impacts to population and housing are projected to occur with implementation of the project.

G. Public Services and Recreation

The Oakland Police Department and Oakland Fire Department currently provide police and fire protection services to the project site, respectively. The buildings on the project site are currently vacant, and the Oakland Police Department have been called in the past for vandalism (e.g., trash dumping, graffiti, broken windows…) at the site. A security fence and 24-hour private surveillance were installed at the site by GE. After the proposed remediation, the site would be redeveloped with a warehouse building that would provide active uses on the site and would remove blight. Implementation of the proposed project would increase employees and visitors on the site. However, this increase would be minor and would not result in the need for new or physically altered government facilities that could in turn result in adverse physical impacts.

Because the proposed project does not include housing, the proposed project would not result in an adverse effect on school facilities. Construction workers and employees at the site may cause an incremental increase in the use of area parks; however, this increase is not expected to result in substantial physical deterioration of local parks and recreational facilities. Therefore,

the proposed project would not result in an adverse effect on school or recreational services and would not require the construction of new facilities that could in turn result in adverse physical impacts.

H. Utilities and Service Systems

The proposed project site and existing buildings are currently served with utilities, and the proposed warehouse building would also be served with water, wastewater, and storm drainage. The demand for and use of water, wastewater and storm drainage utilities after development of the proposed warehouse building is not expected to be substantially different from demand for and use of these services when all existing buildings on the project site were in use. Due to the hazardous materials on the site, the ongoing water monitoring system and need for remediation activities prior to redevelopment; relocation, construction and connections to utility services, as described in Chapter 3.0, Project Description, would be overseen by various entities included but not limited to: EPA, DTSC, Regional Water Quality Control Board (RWQCB), City of Oakland, and East Bay Municipal Utility District (EBMUD).

As described in Chapter 3.0, Project Description and shown on Table 3-1, the demolition and remediation portion of the project would result in a large amount of hazardous and other material to be removed and disposed of at appropriately licensed facilities. Some demolition materials that are deemed to be non-hazardous materials, such as crushed asphalt and/or concrete, may be reused on the site per the requirements and methods identified in the RDIP Addendum.[2] The licensed landfills identified in Table 3-1 have sufficient capacity to receive the projected amounts of materials to be disposed of. With implementation of SCA-UTL-1 and SCA-UTL-3, listed below, the project would not violate applicable federal, state, and local statues and regulations related to solid waste.

With implementation of SCA-UTL-2 through SCA-UTL-5, listed below, the proposed project or variant would not exceed wastewater treatment requirements; result in new or expanded storm water facilities; or exceed water supplies or wastewater treatment capacity.

SCA-UTL-1: Construction and Demolition Waste Reduction and Recycling (#84)
Requirement: The project applicant shall comply with the City of Oakland Construction and Demolition Waste Reduction and Recycling Ordinance (chapter 15.34 of the Oakland Municipal Code) by submitting a Construction and Demolition Waste Reduction and Recycling Plan (WRRP) for City review and approval, and shall implement the approved WRRP. Projects subject to these requirements include all new construction, renovations/alterations/modifications with construction values of $50,000 or more (except R-3 type construction), and all demolition (including soft demolition) except demolition of type R-3 construction. The WRRP must specify the methods by which the project will divert construction and demolition debris waste from landfill disposal in accordance with current City requirements. The WRRP may be submitted electronically at www.greenhalosystems.com or manually at the City's Green Building Resource Center. Current

[2] EKI Environment and Water, Inc., 2019. Draft Final Remedial Design and Implementation Plan (RDIP) Addendum, October.

standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.
When Required: Prior to approval of construction-related permit
Initial Approval: Public Works Department, Environmental Services Division
Monitoring/Inspection: Public Works Department, Environmental Services Division

SCA-UTL-2: Underground Utilities (#85)
Requirement: The project applicant shall place underground all new utilities serving the project and under the control of the project applicant and the City, including all new gas, electric, cable, and telephone facilities, fire alarm conduits, street light wiring, and other wiring, conduits, and similar facilities. The new facilities shall be placed underground along the project's street frontage and from the project structures to the point of service. Utilities under the control of other agencies, such as PG&E, shall be placed underground if feasible. All utilities shall be installed in accordance with standard specifications of the serving utilities.
When Required: During construction Initial
Approval: N/A
Monitoring/Inspection: Bureau of Building

SCA-UTL-3: Recycling Collection and Storage Space (#86)
Requirement: The project applicant shall comply with the City of Oakland Recycling Space Allocation Ordinance (chapter 17.118 of the Oakland Planning Code). The project drawings submitted for construction-related permits shall contain recycling collection and storage areas in compliance with the Ordinance. For residential projects, at least two (2) cubic feet of storage and collection space per residential unit is required, with a minimum of ten (10) cubic feet. For nonresidential projects, at least two (2) cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten (10) cubic feet.
When Required: Prior to approval of construction-related permit Initial
Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-GHG-1: Green Building Requirements (#87)
a. Compliance with Green Building Requirements During Plan-Check
Requirement: The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code).

i. The following information shall be submitted to the City for review and approval with the application for a building permit:
   - Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.
   - Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit.
   - Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.
   - Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.
   - Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.
   - Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit.
   - Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

ii. The set of plans in subsection (i) shall demonstrate compliance with the following:
   - CALGreen mandatory measures.

[INSERT: Green building point level/certification requirement: (See Green Building Summary Table; for New Construction of Residential or Non- residential projects that remove a Historic Resource (as defined by the Green Building Ordinance) the point level certification requirement is 53 points for residential and LEED Gold for non-residential)] per the appropriate checklist approved during the Planning entitlement process.

- All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted.
- The required green building point minimums in the appropriate credit categories.

When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: N/A

b. Compliance with Green Building Requirements During Construction

Requirement: The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project.
The following information shall be submitted to the City for review and approval:

i. Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit.
ii. Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance.
iii. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.

When Required: During construction
Initial Approval: N/A
Monitoring/Inspection: Bureau of Building

c. Compliance with Green Building Requirements After Construction

Requirement: Prior to the finaling the Building Permit, the Green Building Certifier shall submit the appropriate documentation to City staff and attain the minimum required point level.
When Required: Prior to Final Approval
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

SCA-UTL-3: Sanitary Sewer System (# 89)

Requirement: The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.
When Required: Prior to approval of construction-related permit
Initial Approval: Public Works Department, Department of Engineering and Construction
Monitoring/Inspection: N/A

SCA-UTL-4: Storm Drain System (#90)

Requirement: The project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Building
Monitoring/Inspection: Bureau of Building

SCA-UTL-5: Water Efficient Landscape Ordinance (WELO) (#92)
Requirement: The project applicant shall comply with California's Water Efficient Landscape Ordinance (WELO) in order to reduce landscape water usage. For any landscape project with an aggregate (total noncontiguous) landscape area equal to 2,500 sq. ft. or less. The project applicant may implement either the Prescriptive Measures or the Performance Measures, of, and in accordance with the California's Model Water Efficient Landscape Ordinance. For any landscape project with an aggregate (total noncontiguous) landscape area over 2,500 sq. ft., the project applicant shall implement the Performance Measures in accordance with the WELO.
Prescriptive Measures: Prior to construction, the project applicant shall submit documentation showing compliance with Appendix D of California's Model Water Efficient Landscape Ordinance (see website below starting on page 23): http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf.

Performance Measures: Prior to construction, the project applicant shall prepare and submit a Landscape Documentation Package for review and approval, which includes the following:

a. Project Information:
    i. Date,
    ii. Applicant and property owner name,
    iii. Project address,
    iv. Total landscape area,
    v. Project type (new, rehabilitated, cemetery, or home owner installed),
    vi. Water supply type and water purveyor,
    vii. Checklist of documents in the package, and
    viii. Applicant signature and date with the statement: "I agree to comply with the requirements of the water efficient landscape ordinance and submit a complete Landscape Documentation Package."
b. Water Efficient Landscape Worksheet:
    i. Hydrozone Information Table
    ii. Water Budget Calculations with Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use
c. Soil Management Report
d. Landscape Design Plan
e. Irrigation Design Plan, and
f. Grading Plan

Upon installation of the landscaping and irrigation systems, the Project applicant shall submit a Certificate of Completion and landscape and irrigation maintenance schedule for review and approval by the City. The Certificate of Compliance shall also be submitted to the local water purveyor and property owner or his or her designee.

For the specific requirements within the Water Efficient Landscape Worksheet, Soil Management Report, Landscape Design Plan, Irrigation Design Plan and Grading Plan, see the link below.
dhttp://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/Title%2023%20extract%20-%20Official%20CCR%20pages.pdf
When Required: Prior to approval of construction-related permit
Initial Approval: Bureau of Planning
Monitoring/Inspection: Bureau of Building

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7.2 REFERENCES

AC Transit, 2019. Available at: www.actransit.org/about-us/facts-and-figures/ridership, accessed November 2019.

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

Alameda County Flood Control District, 2019. Interactive Map: Alameda County Watersheds. Available at: https://www.acfloodcontrol.org/resources/explore-watersheds/, accessed March 15, 2019.

Alameda County Transportation Commission, 2011. Congestion Management Program. December.

Alameda County Transportation Commission, 2014. Countywide Travel Demand Model. Planning Area 1; 2020 Daily Model Vehicle Volumes, July.

Amec Foster Wheeler Environment & Infrastructure, Inc, 2017. Sediment Sampling Work Plan, GE Oakland Site, 5441 International Boulevard, Oakland, CA 94601, April 3.

Arcadis, 2009. General Electric Company, Phase I Building Assessment Report, East 14th Street Facility, Oakland, California, January.

Association of Bay Area Governments, 2019. Shaking Scenarios. Available at: http://resilience.abag.ca.gov/earthquakes/Alameda/, accessed February 20, 2019.

Bagwell, Beth, 1982. Oakland, the Story of a City. Oakland Heritage Alliance, p. 175.

Bay Area Air Quality Management District, 2000. BAAQMD Meteorological Data; Oakland STP, Station No. 1804.

Bay Area Air Quality Management District, 2009. Revised Draft Options and Justification Report; California Environmental Quality Act Thresholds of Significance, October.

Bay Area Air Quality Management District, 2012. Recommended Methods for Screening and Modeling Local Risks and Hazards, May.

Bay Area Air Quality Management District, 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases, Base Year 2011, January.

Bay Area Air Quality Management District, 2015. Roadway Screening Analysis Calculator, April 16.

Bay Area Air Quality Management District, 2016. Planning Healthy Places; A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning, May.

Bay Area Air Quality Management District, 2017, 2017 Clean Air Plan: Spare the Air, Cool the Climate, April 19.

Bay Area Air Quality Management District, 2017. California Environmental Quality Act Air Quality Guidelines, May.

Bay Area Air Quality Management District, 2019, 2014 stationary source emissions data provided to Baseline Environmental Consulting, May 6.

Bay Area Air Quality Management District, 2019a. CSV file for 2017 permitted stationary sources provided by Areana Flores, BAAQMD, to Patrick Sutton, Baseline Environmental Consulting, March 25.

Bay Area Air Quality Management District, 2019b. Raster files with health risks values modeled for all highways/freeways and roadways with over 30,000 AADT provided to Baseline Environmental Consulting, May 6.

Bloomberg Associates, 2018. Pathways to Deep GHG Reductions in Oakland: Final Report, March.

California Air Resources Board, 1998. Initial Statement of Reasons for Rulemaking; Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, June.

California Air Resources Board, 2016. Overview: Diesel Exhaust and Health. Available at: https://www.arb.ca.gov/research/diesel/diesel-health.htm, accessed January 13, 2017. Last updated April 12, 2016.

California Air Resources Board, 2018. California Greenhouse Gas Emissions for 2000 to 2016 – Trends of Emissions and Other Indicators, July 11.

California Air Resources Board, 2019. Advanced Clean Cars Program: About. Available at https://ww2.arb.ca.gov/index.php/our-work/programs/advanced-clean-cars-program/about. Accessed April 15, 2019.

California Department of Education, 2019. California Schools Directory. Available at: https://www.cde.ca.gov/schooldirectory/, accessed March 19, 2019.

California Department of Forestry and Fire Protection, 2008. Very High Fire Hazard Severity Zones in LRA, Alameda County, September 3.

California Department of Transportation, 1998. Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol.

California Department of Water Resources, 2019, 2018 SGMA Basin Prioritization Dashboard. Available at: https://gis.water.ca.gov/app/bp2018-dashboard/p1/#, accessed March 14, 2019.

California Department of Water Resources, 2019. Groundwater Information Center Interactive Map Application. Available at: https://gis.water.ca.gov/app/gicima/, accessed March 14, 2019.

California Department of Water Resources, 2019. Groundwater Sustainability Plans. Available at: https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Groundwater-Sustainability-Plans, accessed March 14, 2019.

California Department of Water Resources, 2019. Non-SGMA Groundwater Management. Available at: https://water.ca.gov/Programs/Groundwater-Management/Non-SGMA-Groundwater-Management, accessed March 14, 2019.

California Geological Survey, 2002. California Geomorphic Provinces, Note 36.

California Geological Survey, 2003. Earthquake Zones of Required Investigation, San Leandro Quadrangle, February 14.

California Natural Resources Agency, 2019. CEQA: The California Environmental Quality Act. Available at: http://resources.ca.gov/ceqa/, accessed June 25, 2019.

California Office of Planning and Research, 2017. State of California General Plan Guidelines.

California Register and National Register: A Comparison for purposes of determining eligibility for the California Register, California Office of Historic Preservation, Technical Assistance Series #6, N.D. Available at: ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf, accessed by LSA 2019.

CalRecyle, 2019. Jurisdiction Diversion/Disposal Rate Summary (2007 - Current); Per Capita Disposal Rates Trends; City of Oakland. Data generated April 18.

Caltrans' Traffic Volumes on the State Highway System, 2017. Available at: www.dot.ca.gov/trafficops/census/volumes2017/, accessed in April 2019.

Charles M. Salter Associates Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.

City Council Resolution No. 79312 C.M.S. Adopted June 2005.

City of Oakland Department of Planning and Building Bureau of Planning. Standard Conditions of Approval. Adopted by City Council on November 3, 2008 (Ordinance No. 12899 C.M.S.). Revised May 1, 2018.

City of Oakland Public Works Agency, 2006. Zero Waste Strategic Plan, November 28.

City of Oakland, 1994. Historic Preservation Element.

City of Oakland. Planning Code, Section 17.116.090. Udated June 5, 2019.

City of Oakland, 2004. General Plan, Safety Element-Flooding Hazards. Amended 2012.

City of Oakland, 2004. General Plan, Safety Element, Amended 2012. Available at: http://www2.oaklandnet.com/government/o/PBN/OurServices/GeneralPlan/DOWD009020, accessed October 12, 2016.

City of Oakland, 2005. City of Oakland General Plan, Noise Element, March.

City of Oakland, 2010. Declaration of Public Nuisance – Substandard (Declaration) on May 21, 2010 (Complaint #1001777).

City of Oakland, 2012. Energy and Climate Action Plan, December 4. Updated March 2018.

City of Oakland, 2018. 2015 Greenhouse Gas Emissions Inventory Report, March.

City of Oakland, 2019. Available at: resources/view-an-interactive-map-the-city-of-oakland-major-development-projects, accessed in May 2019.

City of Oakland, 2019. Let's Bike Oakland, 2019 Oakland Bike Plan, May.

Cornerstone Earth Group, 2018. Geotechnical Investigation, 5441 International Boulevard, Oakland, California, October 25.

Department of Toxic Substances Control, 1989. Docket # HSA 88/89-035, Consent Order, May 18.

Department of Toxic Substances Control, 1993. Covenant of Deed Restriction, GE-Oakland Site, Oakland, California, April 19.

Department of Toxic Substances Control, 1997. Docket # HSA 96/97-061, Consent Order, June 25.

Department of Toxic Substances Control, 2011. Vapor Intrusion Mitigation Advisory, Final Revision 1, October.

Department of Toxic Substances Control, 2019. Hazardous Waste and Substances site "Cortese" list. Available: https://calepa.ca.gov/sitecleanup/corteselist/section-65962-5a/, accessed March 18, 2019.

East Bay Municipal Utility District, 2013. South East Bay Plain Basin, Groundwater Management Plan, March.

EKI Environment and Water, Inc., 2018. Evaluation of the Proposed Redevelopment with respect to the Requirements of the Approved Remedy, Bridge Point Oakland, 5441 International Boulevard, Oakland, California, September 6.

EKI Environment and Water, Inc., 2019b. Building Materials Sampling Memorandum, July 11.

EKI Environment and Water, Inc., 2019a. Draft Final Remedial Design and Implementation Plan ("RDIP") Addendum, 5441 International Boulevard, Oakland, California, August 26, revised October 4.

Elsasser, Albert B., 1978. Development of Regional Prehistoric Cultures. In Handbook of North American Indians Volume 8: California, edited by R.F. Heizer.

Federal Aviation Administration, 2019. Airport Data and Contact Information. Effective: March 28, 2019. Database searched for both public-use and private-use facilities in Alameda County. Available at: http://www.faa.gov/airports/airport_safety/airportdata_5010/, accessed April 18, 2019.

Federal Emergency Management Agency, 2018. National Flood Hazard Layer FIRMette, Map Number 06001C0089H, effective December 21.

Federal Emergency Management Agency, 2019. Definitions web page. Available at: https://www.fema.gov/national-flood-insurance-program/definitions, accessed March 28, 2019.

Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual. FTA Report No.0123, September.

Geosyntec Consultants, 2011. Remedial Action Plan, General Electric Site, 5441 International Boulevard, Oakland CA, June.

Geosyntec Consultants, 2012. Final Remedial Design and Implementation Plan, April 26.

Geosyntec, 2009, 2006-2008 Field Investigations Report, General Electric Site, 5441 International Boulevard, Oakland, California, Geosyntec Consultants, Inc., March 13, 2009.

Geosyntec, 2009. Feasibility Study Report, General Electric Site, 5441 International Boulevard, Oakland, California, Geosyntec Consultants, Inc., August 6 and 7, 2009.

Geosyntec Consultants, 2010. Phase II Building Materials Chracterization Report, July.

Geosyntec, 2010. Underground Storage Tank Closure Report, GE Facility at 5441 International Boulevard, Oakland, California, Geosyntec Consultants, Inc. 2 February 2010.

Geosyntec, 2013. Summary Report for Activities at the GE Oakland Facility, 5441 International Boulevard, Oakland, California, November 11.

Graymer et al, 2006. Geologic Map of the San Francisco Bay Region.

Innovative Construction Solutions, 2019. Tenting Plan for PCB Soil Excavation, 5441 International Boulevard, Oakland, California 94601, August 21.

Intergovernmental Panel on Climate Change, 2013. Climate Change 2013; the Physical Science Basis; Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

Kier & Wright, Civil Engineers & Surveyors, Inc. Undated. Memorandum.

Kroeber, Alfred L., 1955. Nature of the Land-Holding Group. Ethnohistory 2:303-314.

Levy, Richard, 1978. Costanoan. In Handbook of North American Indians Volume 8: California, edited by R.F. Heizer.

LSA Associates, Inc., 2019. Cultural Resources Study General Electric Remediation and Reuse Project, Oakland, Alameda County, California, April.

Marvin, Betty, 1994. Department of Parks and Recreation. 523 Record for the General Electric Company Oakland Works, Building #1.

Marvin, Betty, 1995. Historic Context: Unreinforced Masonry Buildings in Oakland, 1850-1948. Oakland Cultural Heritage Survey, p. 36.

Massachusetts, et al. v. U.S. Environmental Protection Agency, et al. (2007) 549 U.S. 497.

Metropolitan Transportation Commissio and Association of Bay Area Governments, 2017. Plan Bay Area 2040. Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040. Adopted July 26.

Metropolitan Transportation Commission, 2018. Open Date Catalog; Transportation Analysis Zones. Available at: http://opendata.mtc.ca.gov/datasets/transportation-analysis-zones. Last updated September 24.

Metropolitan Transportation Commission, 2019. Available at: https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=98463b4f73ca43c5944a5c30648fd689, accessed in April 2019.

Meyer, Jack and Jeffrey Rosenthal, 2007. Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4. Far Western Anthropological Research Group, Inc., Davis, California.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Thomas M. Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier and David A. Fredrickson, 2007. Punctuated Culture Change in the San Francisco Bay Area. InCalifornia Prehistory: Colonization, Culture, and Complexity, edited by T.L. Jones and K.A. Klar.

Milliken, Randall, 1995. A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area, 1769-1810. Ballena Press Anthropological Papers. Ballena Press Menlo Park, California.

Milliken, Randall, 2006. The Central California Ethnographic Community Distribution Model, Version 2.0, with Special Attention to the San Francisco Bay Area. Far Western Anthropological Research Group, Inc., Davis, California.

National Aeronautics and Space Administration, 2019. 2018 Fourth Warmest Year in Continued Warming Trend, According to NASA, NOAA. Available at: https://www.giss.nasa.gov/research/news/20190206/, posted February 6.

Norris, Robert M. and Robert W. Webb, 1976. Geology of California, 2nd Edition. J. Wiley & Sons, Inc.

Oakland Cultural Heritage Survey, 1996. Department of Parks and Recreation 523 series Forms (DPR 523) for the 57th Avenue Industrial District. On file, Oakland Cultural Heritage Survey, Oakland, California, September 30.

Office of Environmental Health Hazard Assessment, 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February.

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.

San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2017. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). Incorporating all amendments as of May 4.

San Francisco Bay Regional Water Quality Control Board, 2019. Environmental Screening Levels, January 24. Available at: https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html, accessed March 4, 2019.

SCA Environmental, Inc., 2010. Summary Report: Phase 2 Hazardous Materials Survey.

Schneider, John, 2012. General Electric's Trio of Pioneer Radio Stations. Monitoring Times 31(7):8-11.

Society of Vertebrate Paleontology, 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.

Sowers, Janet M. et al., 1993. Creek & Watershed Map of Oakland & Berkeley. Revised 1995 & 2000.

State of California Environmental Protection Agency Department of Toxic Substances Control, 1997. Consent Order (HSA 96/97-061), June 25.

State Water Resources Control Board, 2009. Construction General Permit Fact Sheet. 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ.

State Water Resources Control Board, 2017. Final 2014 and 2016 California Integrated Report (Clean Water Act Section 303(d) List/305(b) Report), Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml, accessed January 2, 2019.

Steinberg, 2013. Available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743, accessed on March 10, 2017.

U.S. Environmental Protection Agency, 2010. Regulatory Announcement: EPA and NHTSA Finalize Historic National Program to Reduce Greenhouse Gases and Improve Fuel Economy for Cars and Trucks.

U.S. Environmental Protection Agency, 2012. Regulatory Announcement: EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks, August.

U.S. Environmental Protection Agency, 2013. Request for Supplemental TSCA Application for Risk Based PCB Cleanup at General Electric Company Facility at 5441 International Boulevard, Oakland, California, August 28.

U.S. Environmental Protection Agency, 2019. Regional Screening Levels – Generic Tables, May.

U.S. Geological Survey, 2015. UCERF3: A New Earthquake Forecast for California's Complex Fault System, USGS Fact Sheet 2015-3009, March.

U.S. Geological Survey, 2018. Oakland East Quadrangle, California, 7.5-Minute Series.

U.S. Geological Survey, 2019. Available at: http://geomaps.wr.usgs.gov/sfgeo/geologic/downloads.html, accessed February 20, 2019.

U.S. Geological Survey, 2019. The Modified Mercalli Intensity Scale. Available at: http://earthquake.usgs.gov/learn/topics/mercalli.php, accessed February 20, 2019.

University of California Museum of Paleontology.2019. Collections Database, Locality Search. Available at:https://ucmpdb.berkeley.edu/loc.html, accessed on March 18, 2019.

Western Regional Climate Center, 2019. General Climate Summary Tables-Precipitation,

Oakland, California. Website: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6335, accessed May 3, 2019.

Wood Environmental & Infrastructure Solutions, Inc., 2018. Five-Year Status Report for the Period August 2013 through December 2017, GE Oakland Site, Oakland, California, June.

Wood Environment and Infrastructure Solutions, Inc., 2018. Semiannual Monitoring Report, October 2017 through March 2018 and Annual Report, July.

Wood Environmental & Infrastructure Solutions, Inc., 2019. Appendix F, Groundwater Remedy Modifications, 5441 International Boulevard, Oakland, California, April.

Wood Environmental & Infrastructure Solutions, Inc., 2019. Appendix F, Groundwater Remedy Modifications and Off-Site Vapor Intrusion Assessment, 5441 International Boulevard, Oakland, California, October.

7.3 COMMUNICATION

Cox, Jim, 2012. Senior Construction Manager, Geosyntec Consultants, Inc. Personal communication with LSA Associates, Inc., December 17.

Deepa Ghandi, 2018. Email correspondence between Deepa Ghandi of EKI and Judith Malamut of Baseline, December 19.

EKI Environment and Water, Inc., 2018. Email dated October 1, 2018 from Deepa Gandhi (EKI) to Ronald Leach (EPA) and Yongsheng Sun (DTSC) re: 5441 International Blvd, Oakland, CA - Materials for October 3, 2018 Meeting including September 2018 Soil Sampling Results Transmittal, October 1, 2018.

Geosyntec Consultants, 2013. Letter to Peterson Vollmann, Subject: Response to Request for Additional Information, March 25.

Kotler, Brendan, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, March 22.

Leach, Ron, 2018. Email correspondence between Ron Leach of USEPA and Deepa Gandhi of EKI, November 16.

Leach, Ron, 2018. Email correspondence between Ron Leach of USEPA and Susan Coleman of Wood Environmental & Infrastructure Solutions, May 4 through June 4.

Leach, Ron, 2019. Email correspondence between Ron Leach of USEPA and Cem Atabek of Baseline, October 18. Amanda Monchamp, Attorney and Brendan Kotler, Bridge Development Partners, 2019. Personal communication via email to Baseline Environmental Consulting, July 19, 2019.