1940 Webster Street Mixed Use Project

CEQA Analysis

Prepared for:
City of Oakland
Bureau of Planning
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

Prepared by:

Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94606

November, 2017

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General Project Information

1. Project Title:
1940 Webster Street Mixed Use Project
Planning Case Number PLN17-227

2. Lead Agency Name and Address:
City of Oakland
Bureau of Planning
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612

3. Contact Person and Phone Number:
Peterson Vollmann, Planner IV
(510) 238-6167
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
pvollmann@oaklandnet.com

4. Project Location:
1940 Webster Street, Oakland, CA
Assessor's Parcel Nos. 008-0636-018-01 and 008-0636-019-00

5. Project Sponsor's Name and Address:
MCRT Investments, LLC
Attn: Matt Udouj
411 Borel Avenue Suite 405
San Mateo, CA 94402

6. Existing General Plan Designations:
Central Business District (CBD)

7. Existing Zoning:
Central Business District Commercial (CBD-C),
Height Limit 6 (no limit)

8. Requested Permits:
Design Review (Planning Code §17.136.040)
Building, Grading, Encroachment and other related onsite and offsite work permits

Project Description

This section describes the proposed 1940 Webster Street Project (Project) evaluated in this CEQA Analysis and includes a description of the Project site, existing site conditions, the proposed development, and required Project approvals.

Project Setting

The Project would combine two parcels of land (APNs 008-0636-018-01 and 008-0636-019-00) into a single rectangular parcel of 150 ft. by 170 ft., covering approximately 0.59 acre (25,567 square feet). The Project site is located approximately 800 feet west of the western "arm" of Lake Merritt (Figures 1 & 2).

The Project site (or site) is located in a fully developed area of Oakland generally dominated by commercial properties in the immediate vicinity and surrounding area. The site is on the eastern side of Webster Street between 19th and 20th Streets. The site is bounded by Webster Street on the west, a one-story building on the south, a parking garage on the east, and a four-story building on the north. The site is occupied by a two-story bank building at the southern portion and by an asphalt-paved parking area at the northern portion. The bank building is at grade.

Regional access is provided by Interstates 580, 880 and 980 (I-580, I-880, I-980). The site is two blocks east of the 19th St BART station and is within 0.25 mile of stops served by Alameda-Contra Costa Transit (AC Transit) bus routes 33 and the Transbay NL. Webster Street is a one-way street with traffic heading south.

Existing Conditions and Surrounding Land Uses

The site is currently developed with one 2-story commercial building, which includes a ground floor bank and 2nd floor chiropractic services, and an asphalt surface parking lot.

Across the adjoining streets, the property is bound by commercial development on all sides. More specific development and uses immediately adjacent and within the same block as the Project site are described as follows:

- 1956 Webster (adjacent building north)—a 4-story professional services building that is part of Lake Merritt Plaza.
- 1922 Webster (adjacent building south)—single story boxing gym, and physical therapy clinic

There are several multi-story office buildings located within one block east of the site fronting Harrison Street, including Lake Merritt Plaza, a 27-story office building located one block north and east of the Project site at 1999 Harrison, and Wells Fargo Bank Center, at 1901 Harrison. A Kaiser Permanente office building is located across from the Project site on Webster Street.

The site is not a historic site, landmark, or designated historic property. It is not located within any Area of Primary or Secondary Importance identified in the Oakland Cultural Heritage Resources Survey.

General Plan and Zoning Designations

The Project site's General Plan designation is Central Business District (CBD) (Figure 3). The intent of the CBD classification is to encourage, support, and enhance the Downtown area as a high density, mixed-use urban center of regional importance. The CBD classification includes a mix of large-scale offices, commercial, retail, urban high-rise residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and visitor uses. The Zoning Designation is CBD-C (Figure 4). The intent of the CBD-C zone is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities. The site is in Height Area 6 (no total height limit).

Project

The Project proposes an approximately 149,970-sf building, with recreation spaces on the ground floor and roof level, and a planted roof terrace for shared tenant use. The Project includes 173 new housing units on seven residential floors above the ground floor, which features commercial space of 1,786 sf, fronting Webster. A partially below-ground parking level will provide 131 parking spaces using 3-level mechanical parking stackers. The proposed building height is 84'-11" to the roof.

The Project proposes private balconies for most units, ranging from 44 sf to 105 sf. The units are predominantly studio and one-bedroom units, with the typical floor consisting of 15 one-bedroom units, seven studio apartments and four two-bedroom units, which are proposed for the corners of each residential floor (Figures 6 through 13).

The building exterior features off-white cement plaster walls with composite wood paneling for soffits and accent walls. Glass window walls are used for glazing, with glass guardrails at the corner balconies and roof deck. The roof deck is overhung by a trellis with directional downlight fixtures (Figure 14).

Approximately 10,532 cubic yards of soil will be excavated and disposed at an offsite permitted landfill to facilitate the construction of the foundations and below grade portions of the building. Base rock will be imported to the site; no soil will be imported.

Table 1. 1940 Webster St Project--Development Summary

Development Parameter	Amount
Total site area	25,567 sf (0.59 acres)
Total gross floor area	149,970 sf
Gross residential area, including services	~ 148,184 sf
Gross commercial/retail area	1,786 sf

Table 1. 1940 Webster St Project--Development Summary

Development Parameter	Amount
Gross open space	13,021 sf
Residential Units	173
Parking spaces provided	131
Bicycle spaces	63 long term; 12 short term
Number of building levels	7
Building height	84'-11" to roof

Access

Entry to the parking garage will be created via a new curb cut along the northern portion of the site fronting Webster Street. The main entry to the building for residents and guests will be on Webster Street, at roughly the midpoint of the building frontage. The entrance to the commercial space will be at the southern frontage on Webster Street.

Utilities

The Project will create or replace 24,110 sf of impervious surface, which represents over 94% of the lot area. The Project proposes to treat stormwater runoff using mechanical treatment, a 6' concrete vault located at the southeast corner of the rooftop, sized per requirements identified in Provision C.3 of the County's Regional Stormwater Permit. The entire roof represents the single drainage area for the building. The vault system would drain into a storm drain line connecting to the existing storm sewer system. All applicable source control and site design measures will be implemented to minimize stormwater runoff pollution (Figure 15).

Utility services will use existing public services in the right-of-way. The Project will require new laterals for service connections.

Landscaping

There are no existing trees that would require removal. Landscaping at street level will consist of five new street trees along Webster (proposed to be Saratoga laurel) and a planter near the main entry. There are landscaped terraces on the north and south sides of Level 2 that use steel planters, as well as the rooftop terrace (Figures 16a and 16b).

Project Construction

The proposed building will include five levels of Type III wood construction over two levels of Type I concrete (plus the partially subterranean garage), pursuant to Chapter 6 of the California Building Code.

The Project would be constructed over approximately 24 months and construction is anticipated to start in 2018. Construction activities would consist of demolition of the existing building and surface parking lot, limited excavation and grading, foundation construction, and construction of the building and finishing interiors. Soil management during construction would include precautions taken to limit risks to human health and the environment from existing concentrations of lead that exceeded Environmental Screening Levels, as indicated at five soil borings sampled at the site as part of an Environmental Site Characterization conducted for the Project. The site will be under the regulatory supervision of the Alameda County Department of Environmental Health (ACDEH), which would be expected to require implementation of recommendations included in a Soil Management Plan (SMP) and Health and Safety Plan (HASP) prepared for the Project.

Demolition and grading are anticipated to occur over the course of one month. Grading would include surface preparation, utility connections and excavations for the foundation, footings and utility services. The site would be excavated to a maximum of approximately 11 ft. below grade. Approximately 10,532 cubic yards of soil will be excavated and disposed of at an offsite permitted landfill to facilitate the construction of the foundations and below-grade portions of the building.

Base rock will be imported to the site, but no soil will be imported. Groundwater has been encountered at approximately 13' below ground. Based on analytical results of groundwater samples taken at the site, approval of groundwater discharge related to construction dewatering will need to be granted by East Bay Municipal Utility District (EBMUD). A permit must be obtained from the Regional Water Quality Control Board prior to any groundwater discharge to the city's sanitary sewer system.

The Project would have a shallow foundation system and conventional spread footings with slab-on-grade or mat foundation. No pile driving would be required.

Typical equipment used during construction would include an excavator, skid-steer loader, backhoe, trencher, crane, rough terrain forklift, paver, and paving equipment. Staging would primarily occur within the Project site, except in certain instances, such as deliveries or removal of large quantities of material, when parking lanes on one or more of the street frontages may be temporarily closed.

Depending on the construction phase, the number of on-site construction workers could range from approximately 25 to 120 workers per day, depending on phase of work. The maximum number of workers would be present during framing, rough-in, and interior finish, as well as the exterior work during the building construction phase. The minimum number of workers would be present during grading, excavation, and site preparation.

Project Approvals

The Project requires the following discretionary actions/approvals, including without limitation:

Actions by the City of Oakland

- Regular Design Review
- Building permit

- Other City Permits – Grading permit, encroachment permit and other related onsite and offsite work permits.

Actions by Other Agencies

- Regional Water Quality Control Board (RWQCB) –Waste Discharge Requirements or NPDES permit; dewatering permit, if required
- East Bay Municipal Utility District (EBMUD) – Approval of new service requests and water meter installation.

Summary of Findings

An evaluation of the Project is provided in the CEQA Analysis below. This evaluation concludes that the Project qualifies for an exemption from additional environmental review and that the Project is consistent with the development density and land use characteristics established by existing zoning and General Plan policies for which an EIR was certified [i.e., the City of Oakland General Plan LUTE and LUTE Environmental Impact Report (EIR) (1998) and the Central District Urban Renewal Plan (Redevelopment Plan) and Amendments that were evaluated in a EIR certified in 2011, designated as a "Program EIR" under CEQA Guidelines Section 15180]. As such, subsequent activities within the Redevelopment Area are subject to the provisions of CEQA Guidelines Section 15168, and these two EIRs are collectively referred to herein as the Program EIRs. As such, the Project would be required to comply with the applicable mitigation measures identified in the Program EIRs, as well as any applicable City of Oakland SCAs (see Attachment A for a full list of SCAs referred to and required by the City). With implementation of the applicable mitigation measures and SCAs, the Project would not result in a substantial increase in the severity of significant impacts that were previously identified in the LUTE or Redevelopment Plan EIR or any new significant impacts that were not previously identified in the prior EIRs.

In accordance with Public Resources Code Sections 21083.3, 21094.5, and 21166 and State CEQA Guidelines Sections 15183, 15183.3, and 15332, and as set forth in the CEQA Analysis below, the Project qualifies for an exemption because the following findings can be made:

- **Class 32 Exemption:** The following analysis demonstrates that the Project is consistent with Criterion 15332 (a), (b), (c), (d), and (e), and that no exceptions per CEQA Guidelines Section 15300.2 apply to the Project that have not been previously identified and mitigated under the City of Oakland General plan and its supporting EIRs.
- **Community Plan Exemption:** The following analysis demonstrates that the Project is consistent with the development density established by existing zoning and General Plan policies for which an EIR was certified (i.e., the Program EIRs). As such, the analysis presents substantial evidence that, other than Project-specific effects which may be peculiar to the Project or its site, the Project's potential contribution to overall cumulatively significant effects has already been addressed as such in the Program EIRs, or will be substantially mitigated by the imposition of SCAs, as further described in Attachment A.

- **Qualified Infill Streamlining:** The following analysis demonstrates that the Project is located in an urban area on a site that has been previously developed; satisfies the performance standards provided in CEQA Guidelines Appendix M; and is consistent with the General Plan land use designation, density, building intensity and applicable policies. As such, this environmental review is limited to an assessment of whether the Project may cause any project-specific effects, and relies on uniformly applicable development policies or standards to substantially mitigate cumulative effects.
- **Program EIRs and Redevelopment Projects**: The analysis in the 2011 Redevelopment Plan EIR and in this CEQA Analysis demonstrates that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR, per CEQA Guidelines Section 15162, because the level of development proposed for the site is within the broader development assumptions analyzed in the previous EIRs. The effects of the Project have been addressed in those EIRs and no further environmental documents are required in accordance with CEQA Guidelines Sections CEQA Guidelines Sections 15168 and 15180.

Each of the above findings provides a separate and independent basis for CEQA compliance.

for

Darin Ranelletti
Environmental Review Officer

11/16/17
Date

Figure 1—General Location

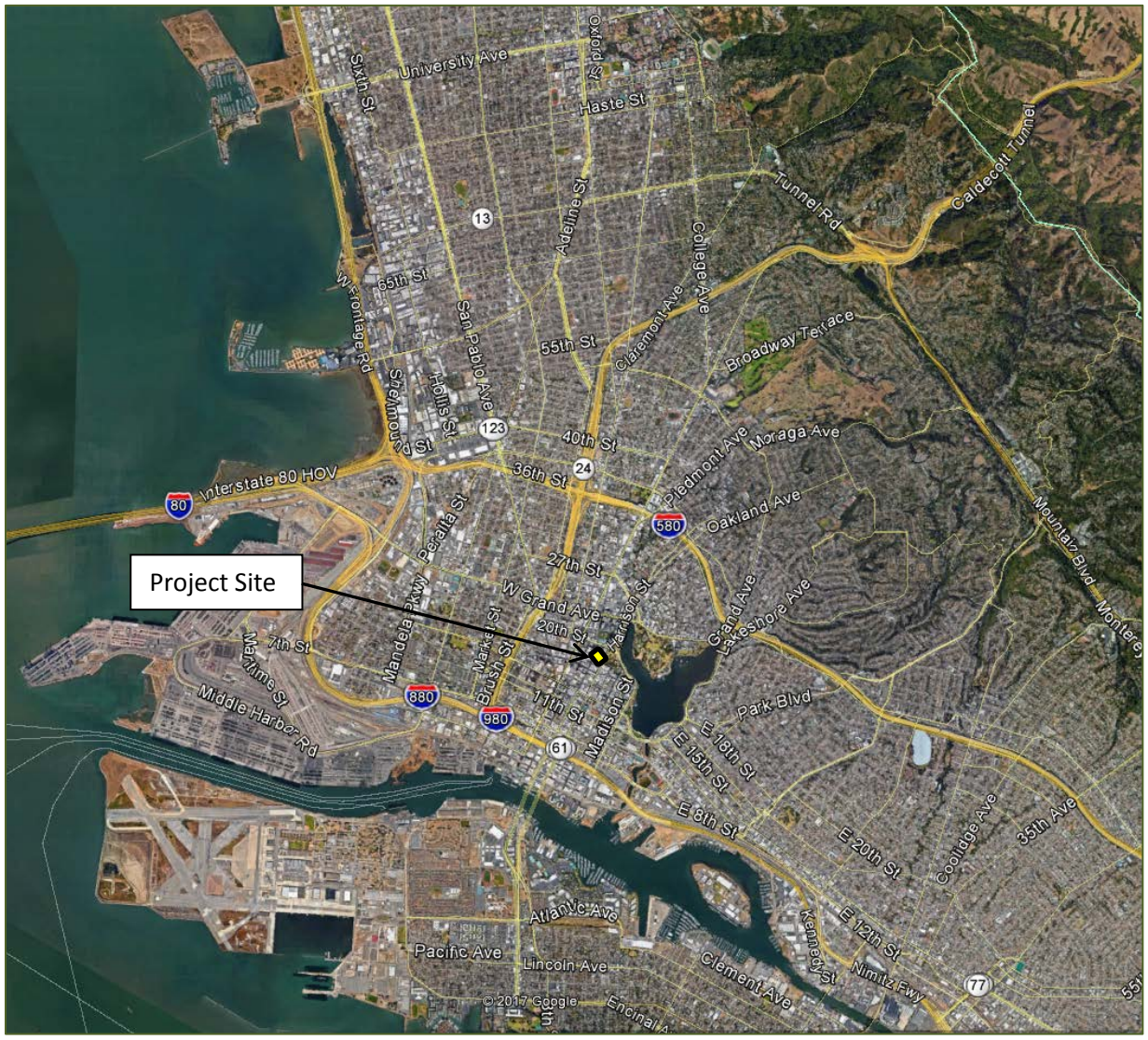


Figure 2—Site Vicinity

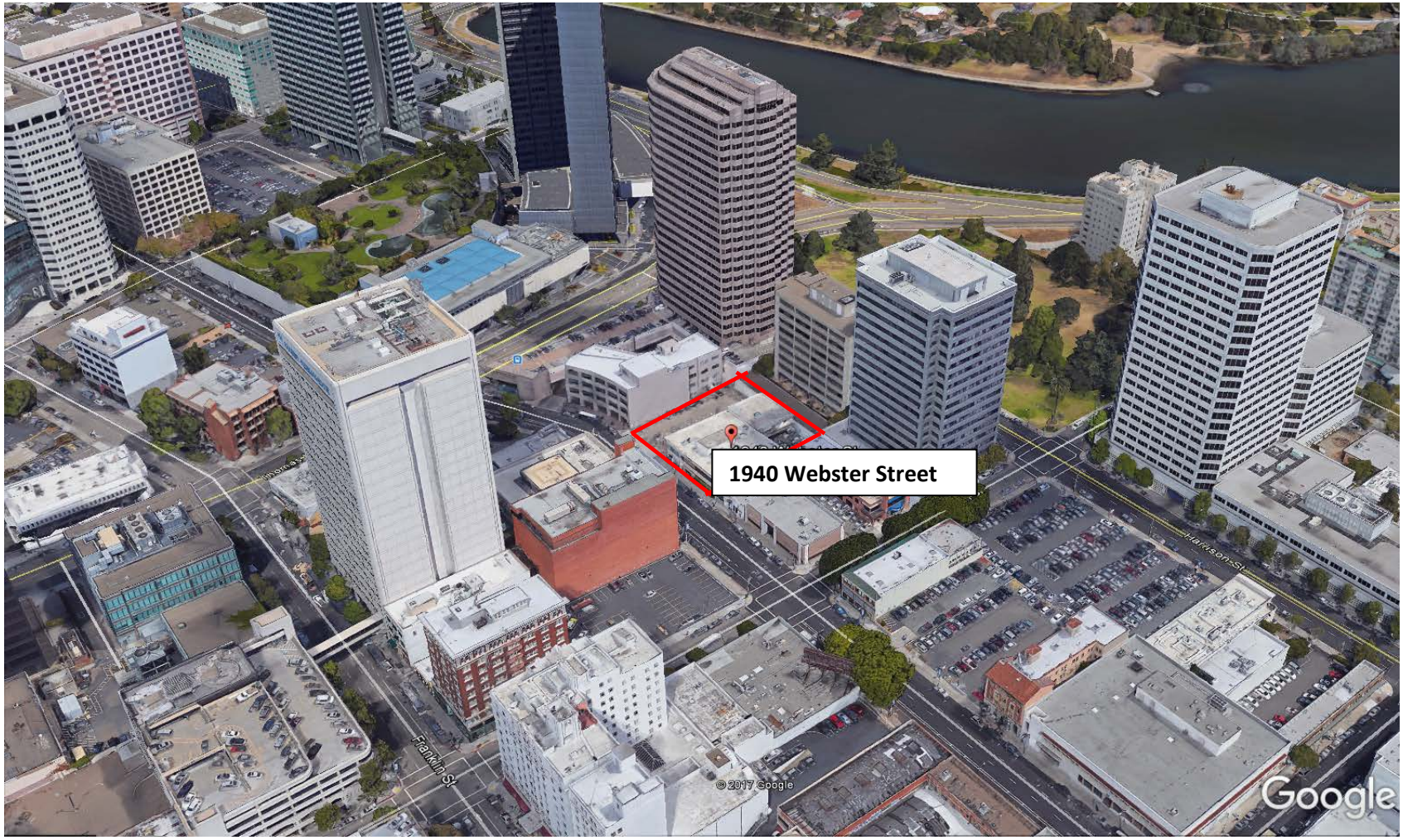


Figure 3—General Plan Land Use

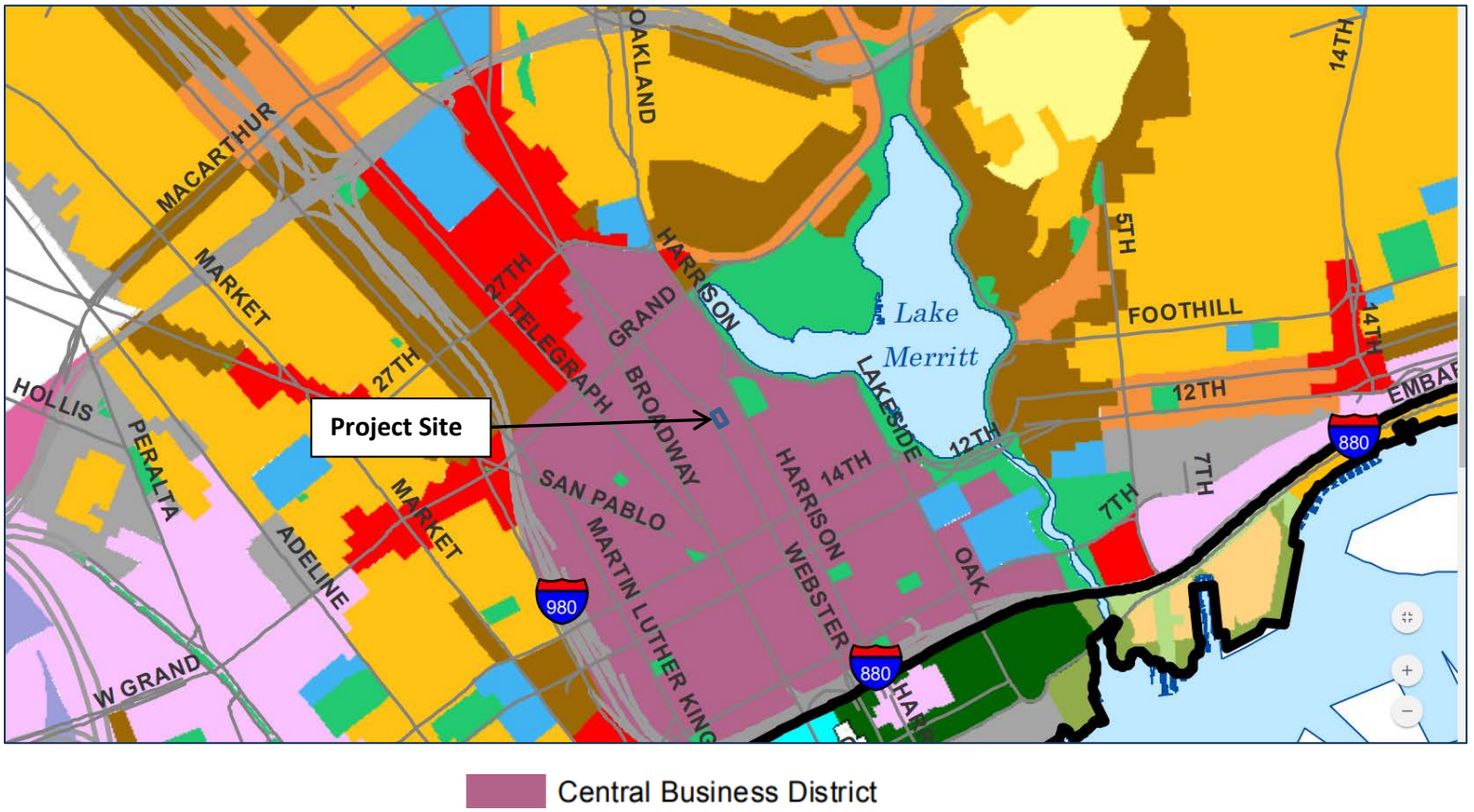
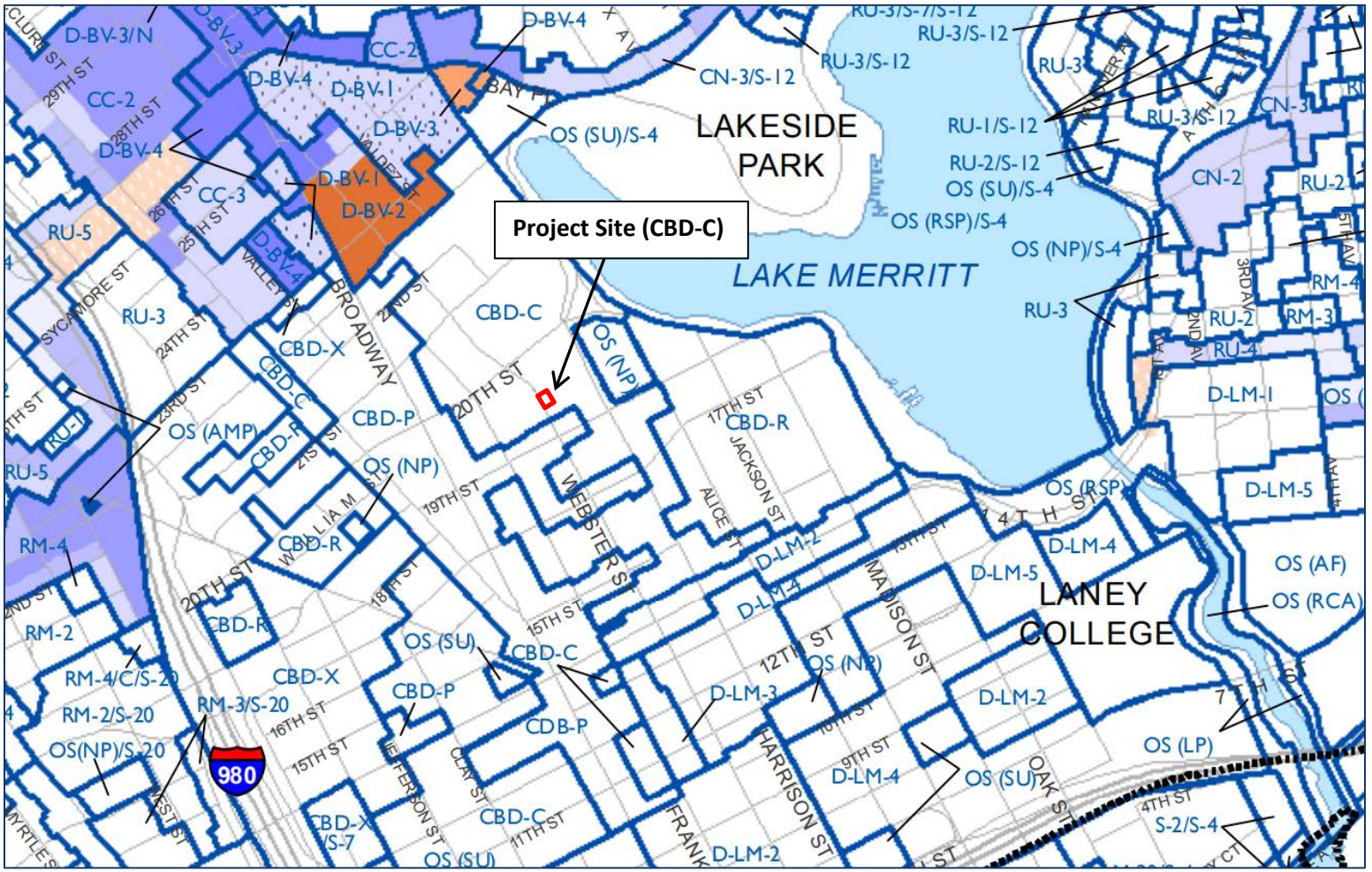
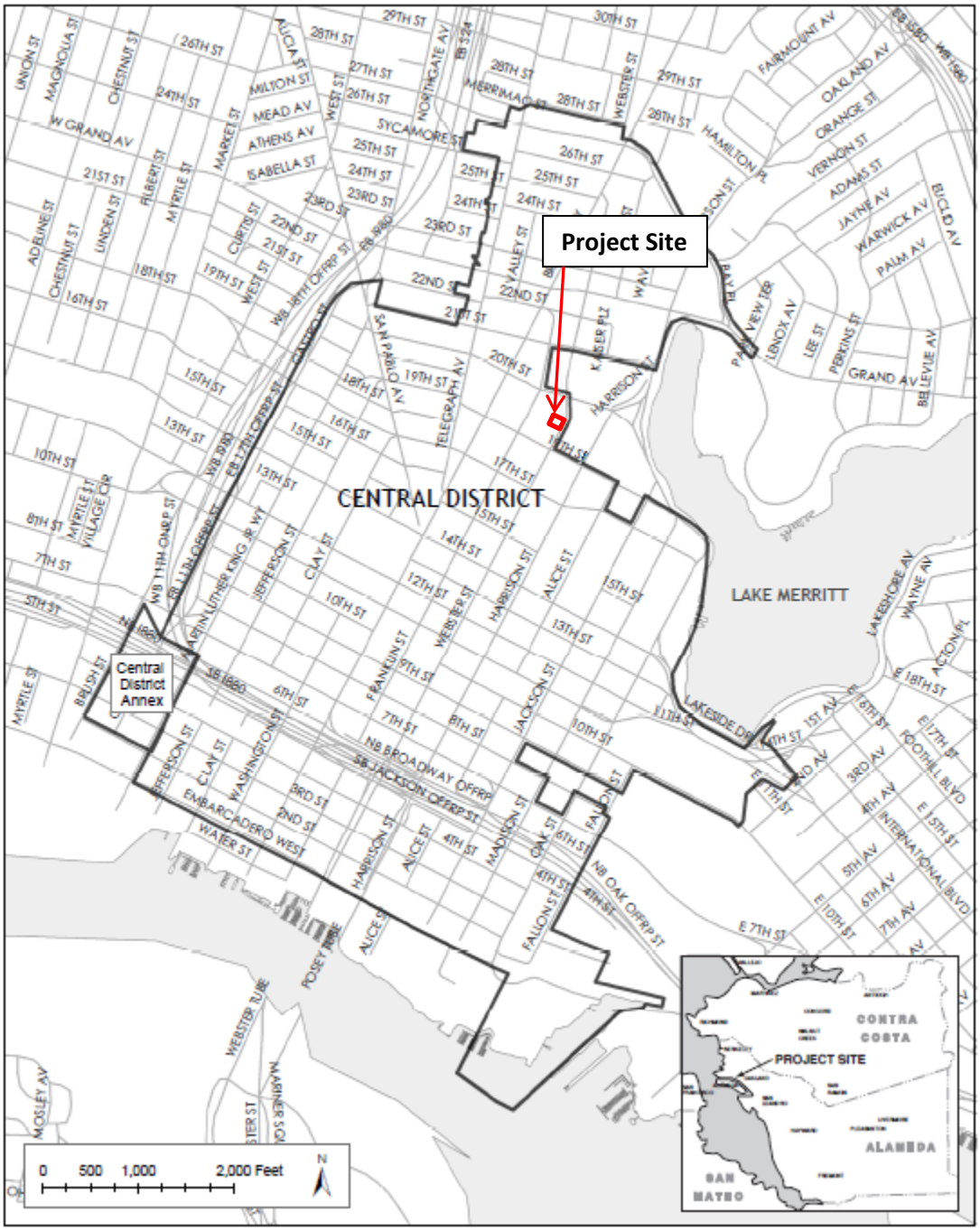


Figure 4—Zoning Map



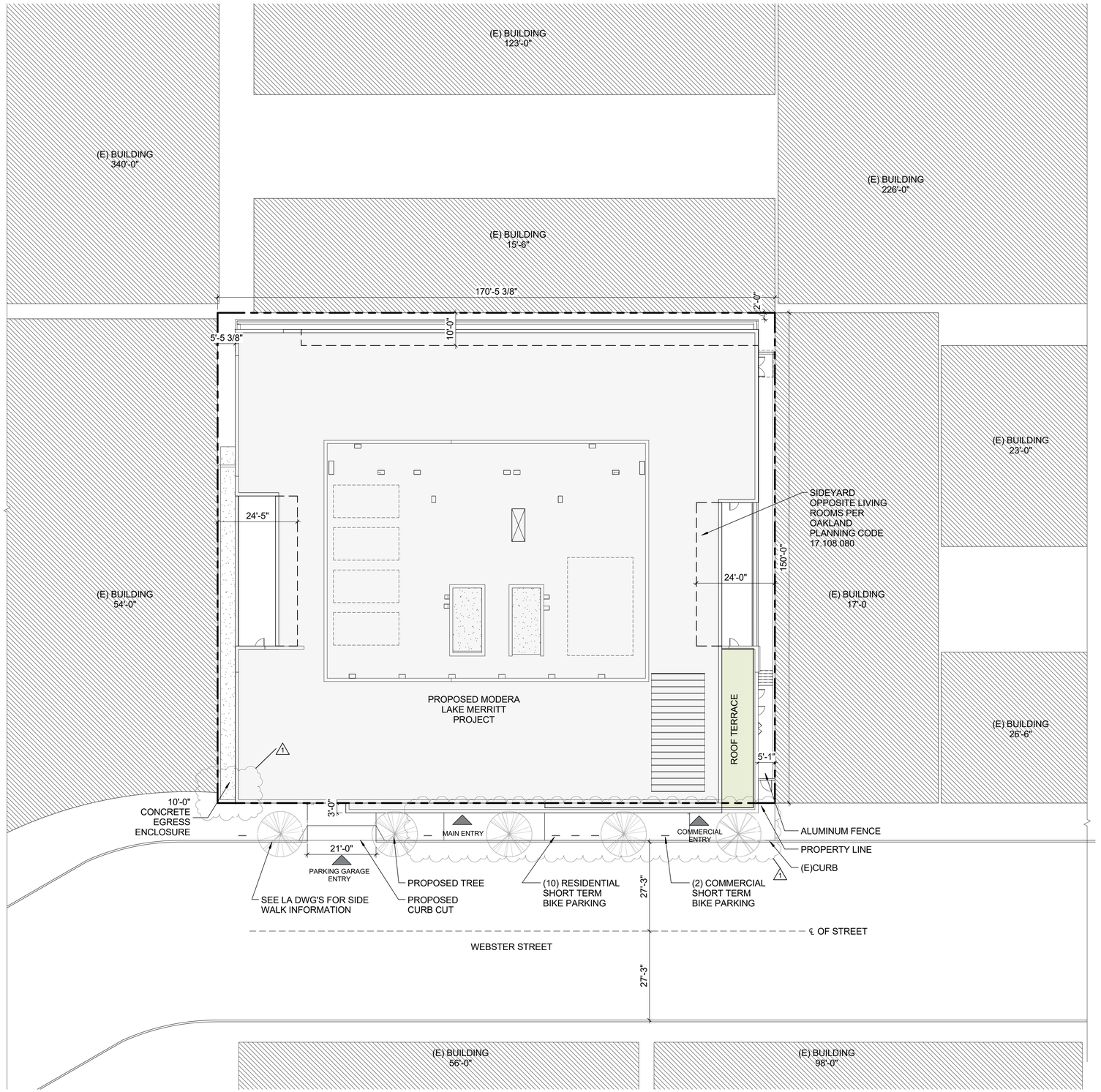
CBD-C Central Business District Commercial

Figure 5. Central District Urban Renewal Plan Area



Source: Draft EIR, Proposed Amendments to the Central District Urban Renewal Plan, 2011. P. 3-10.

Figure 6. Site Plan



1 SITE PLAN
1/16" = 1'-0"

0' 8' 16' 32' 64'

7/31/2017 6:15:26 PM

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KEYPLAN

PROJECT NO.: 16010.00
DATE: JUNE 8, 2017
SCALE: 1/16" = 1'-0"

SHEET TITLE:

SITE PLAN

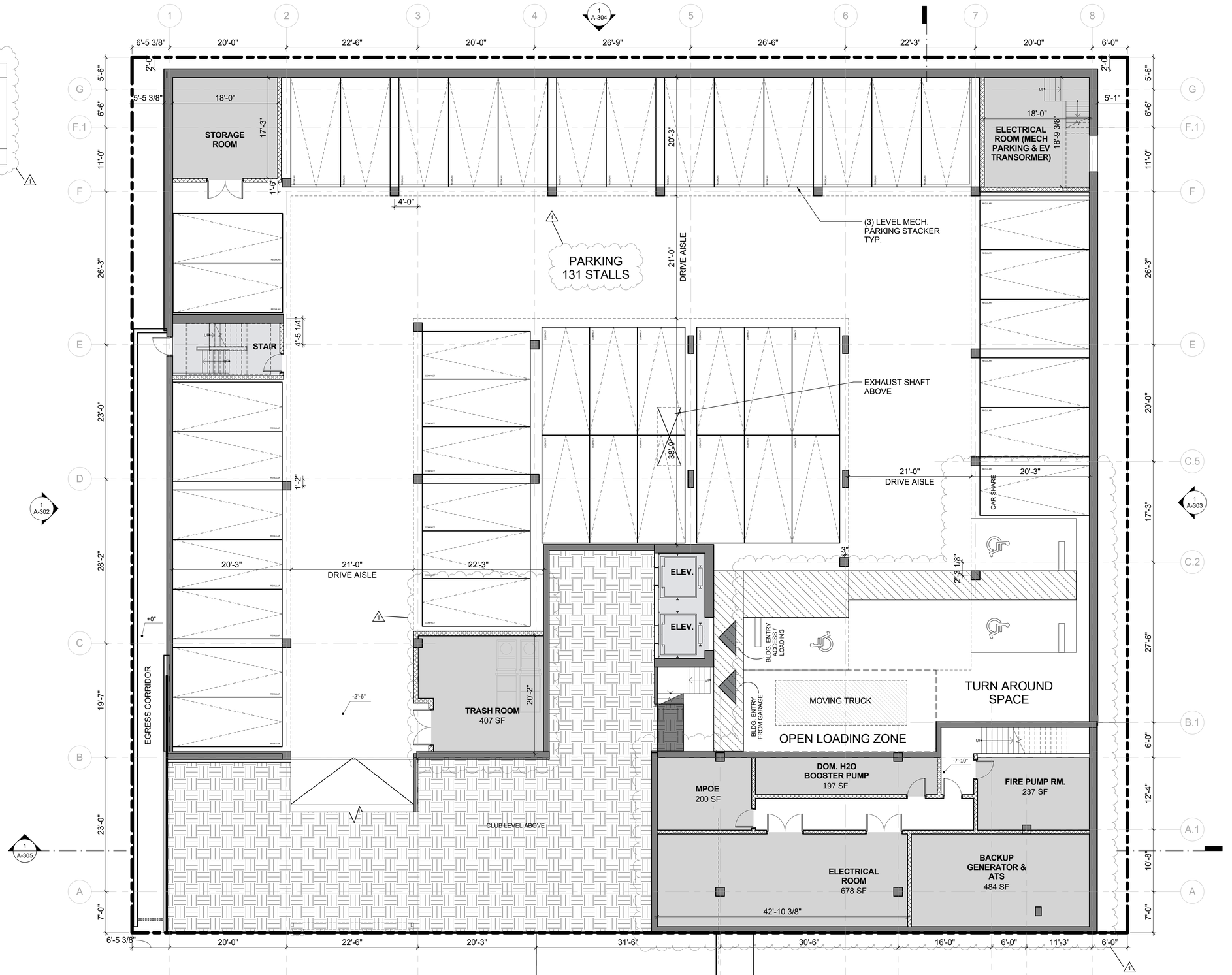
SHEET NO:

AS-101

PARKING SCHEDULE	
THREE TIERED MECH LIFT	
COMPACT	49
REGULAR	78
ADA	3
CAR SHARE	1
TOTAL	131

400_PARKING SCHEDULE

1/8" = 1'-0"



1 FLOOR PLAN - LEVEL B1

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0' 12' 24' 48' 96'

8/1/2017 4:16:40 PM

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PROJECT NO.: 16010.00
DATE: JUNE 8, 2017
SCALE: 1/8" = 1'-0"

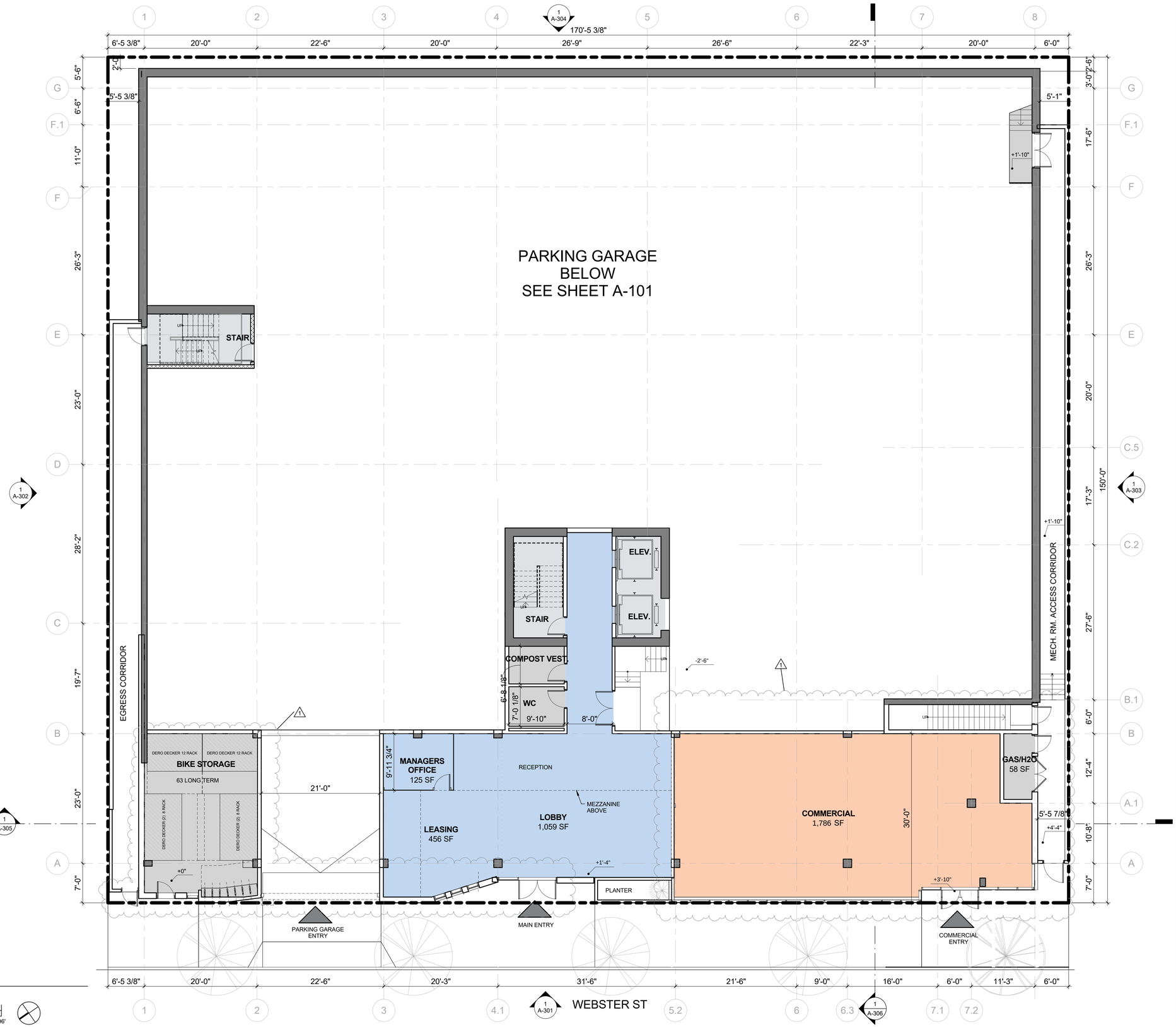
SHEET TITLE:

FLOOR PLAN - GARAGE B1

Figure 7

SHEET NO:

A-101



1 FLOOR PLAN - LEVEL 1

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - LEVEL 1

Figure 8

SHEET NO:

A-102

1 FLOOR PLAN - LEVEL 2

1/8" = 1'-0"

0' 12' 24' 48' 96'

8/1/2017 4:30:00 PM

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - LEVEL 2

Figure 9

SHEET NO:

A-103

1 FLOOR PLAN - LEVEL 3

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - LEVEL 3

Figure 10

SHEET NO:

A-104

1 FLOOR PLAN - LEVEL 4-7

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - LEVEL 4-7

Figure 11

SHEET NO:

A-105

1 FLOOR PLANS - LEVEL 8

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0' 12' 24' 48' 96'

8/1/2017 4:33:33 PM

If this drawing is not 24"x36", then the drawing has been revised from its original size. Noted scales must be adjusted. This line should be equal to one inch

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - LEVEL 8

Figure 12

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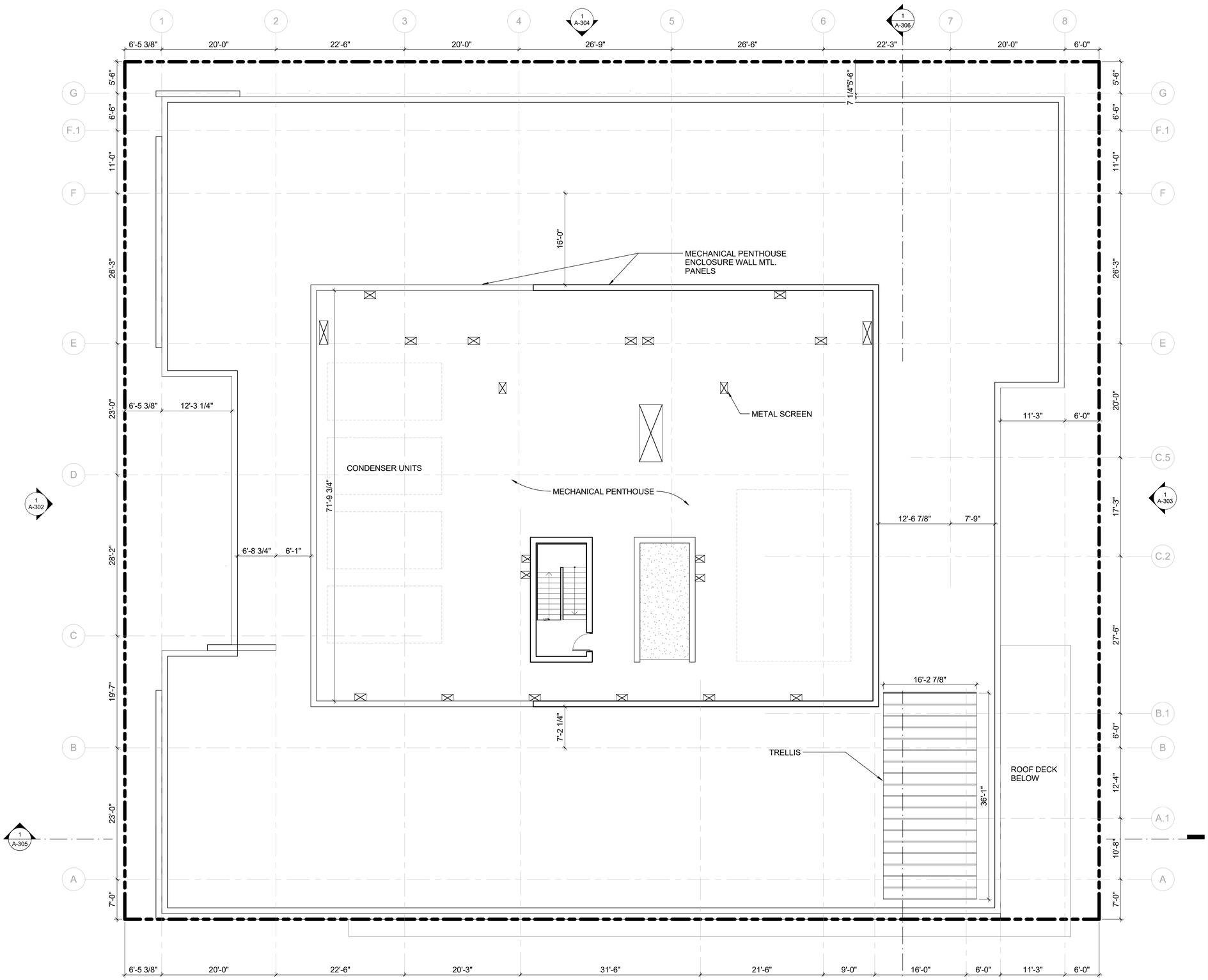
A-106



1 FLOOR PLAN - ROOF LEVEL

1/8" = 1'-0"

0' 12' 24' 48' 96'

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SCALE: 1/8" = 1'-0"

SHEET TITLE:

FLOOR PLAN - ROOF

Figure 13

SHEET NO:

A-107

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1 WEST ELEVATION
1/8" = 1'-0"

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DATE: JUNE 8, 2017
SCALE: 1/8" = 1'-0"

SHEET TITLE:

BUILDING ELEVATION WEST

Figure 14

SHEET NO:

A-301

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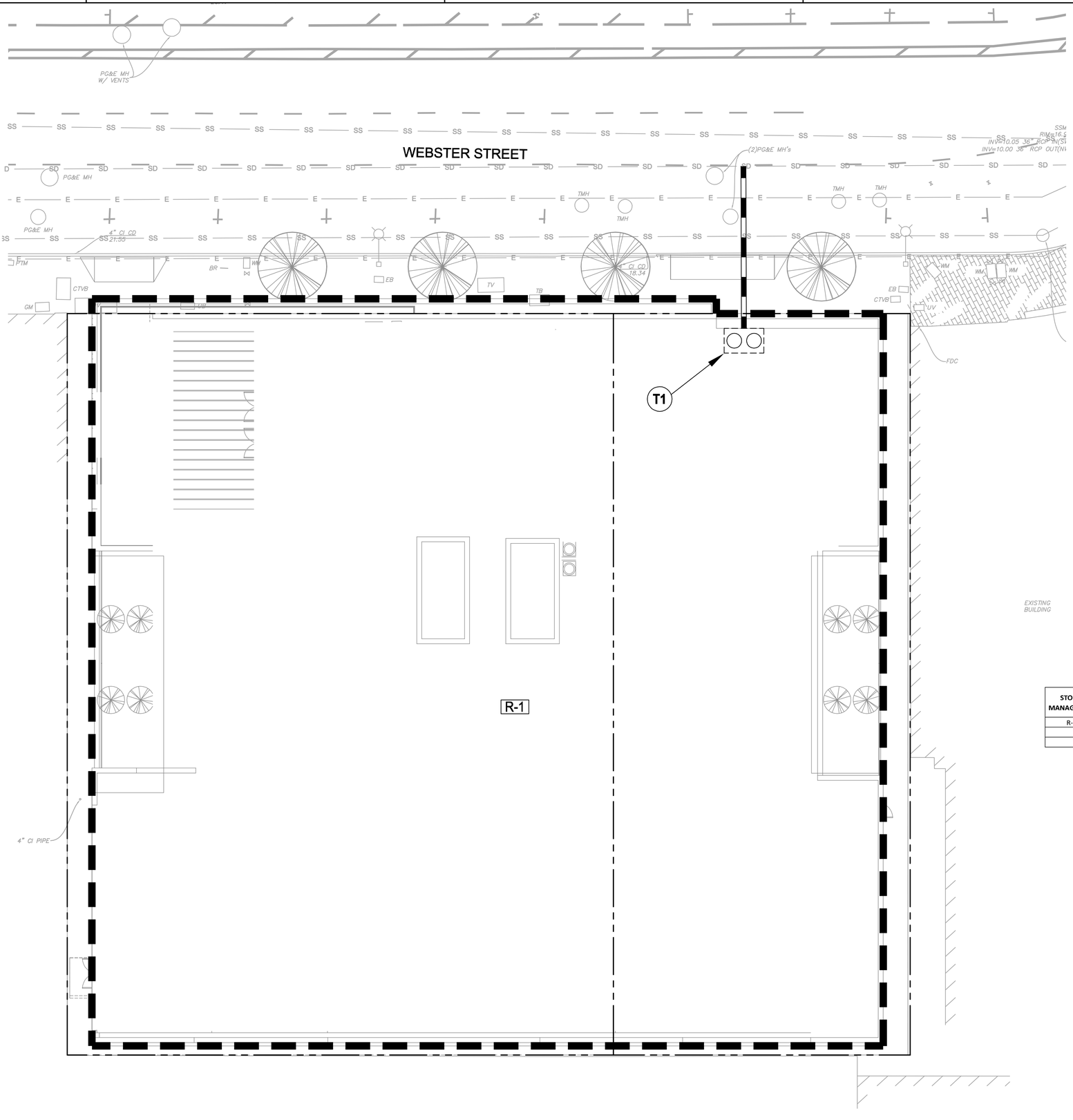

GRAPHIC SCALE

10 0 10 20

STORMWATER CONTROL LEGEND:

TX	POINT OF TREATMENT OF DRAINAGE AREA X
R-X	DRAINAGE AREA
	DRAINAGE AREA BOUNDARY
	STORM DRAIN LINE
	STORM DRAIN TREATMENT VAULT, SEE DETAIL SHEET C1.1

LID TREATMENT REDUCTION CREDIT SUMMARY:

PROJECT PARCEL (R-1): 25,567 SF
TOTAL DISTURBED LAND: 25,567 SF
PROJECT DENSITY: 173 DU/ac

-LOCATED IN A CBD ZONE
-CREATED MORE THAT 0.5 ACRES OF IMPERVIOUS SURFACE
-HAVE AT LEAST 85% LOT COVERAGE BY PERMANENT STRUCTURES
-NO SURFACE PARKING

=> SPECIAL PROJECT TYPE B, 100% LID REDUCTION CREDIT

STORM WATER MANAGEMENT AREAS	AREA (SF)	TREATMENT AREA DESIGNATION	TREATMENT TYPE	TREATMENT AREA REQUIRED* (SF)	TREATMENT AREA PROVIDED (SF)	EXCESS TREATMENT (SF)
R-1 (ROOF)	24,100	-	VAULT	-	-	-
LID TREATMENT			0	0% OF IMPERVIOUS SITE AREA		
NON-LID TREATMENT			24,100	100% OF IMPERVIOUS SITE AREA		

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ISSUE NAME	MM/DD/YYYY

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MODERA LAKE MERRITT

1940 WEBSTER ST, OAKLAND, CA 94612

KEYPLAN

PROJECT NO.: 16010.00
DATE: JUNE 1, 2017
SCALE: 1":10'

SHEET TITLE:

STORMWATER CONTROL PLAN

Figure 15

SHEET NO:

C1.0

street level landscape elements

COLORED CONCRETE PAVING & SCORING AT ENTRY PLAZA

COLORED CONCRETE ACCENT PAVING AT STREET TREE WELLS

STREET TREE:
SARATOGA LAUREL
(LAURUS NOBILIS 'SARATOGA')

BIKE RACK

0 5 10 15 25ft

WRNS STUDIO
501 SECOND STREET
4TH FLOOR, STE. 402
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CALIFORNIA 94107
415.489.2224 TEL
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ISSUES	DATE
ISSUE NAME	MM/DD/YYYY

#	REVISION LIST	DATE
1	PD COMMENTS REVISIONS	07/28/2017

MODERA LAKE MERRITT
1940 WEBSTER ST, OAKLAND, CA 94612

KEYPLAN

PROJECT NO.: Project Number
DATE: 6/8/2017
SCALE: 1" = 10'-0"

SHEET TITLE:

LANDSCAPE STREET LEVEL

Figure 16a

SHEET NO:

L1.01

6/7/2017 10:00:18 AM

level 8
landscape elements

LARGE SCALE NARROW CONCRETE PAVERS PEDESTAL SET

PLANTERWORX METAL PLANTERS WITH OXIDIZED ZINC FINISH

MODULAR SOFA STYLE SEATING

FIRE PIT - FOLD BY PALOFORM

TABLE WITH CHAIRS

BBQ & SINK AREA

0 2 4 6 10ft

If this drawing is not 24"x36", then the drawing has been revised from its original size. Noted scales must be adjusted. This line should be equal to one inch

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ISSUES	DATE
ISSUE NAME	MM/DD/YYYY

#	REVISION LIST	DATE

MODERA LAKE MERRITT
1940 WEBSTER ST, OAKLAND, CA 94612

KEYPLAN

PROJECT NO.: Project Number
DATE: 6/8/2017
SCALE: 1/4" = 1'-0"

SHEET TITLE:

LANDSCAPE PLAN - LEVEL 8

Figure 16b

SHEET NO:

L3.01

6/7/2017 10:00:38 AM

Class 32 Categorical Exemption--Infill Development

Article 19 of the California Environmental Quality Act (CEQA Guidelines Sections 15300 to 15333), includes a list of classes of projects that have been determined to not have a significant effect on the environment and, as a result, are exempt from review under CEQA. Among the classes of projects that are exempt from CEQA review are those projects that are specifically identified as urban infill development. The Project is eligible for a categorical exemption under Section 15332 as an Infill Development Project.

CEQA Guidelines §15332 defines infill development (Class 32 exemptions) as being applicable to projects characterized as in-fill development meeting the following conditions:

(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

(b) The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

(c) The project site has no value as habitat for endangered, rare or threatened species.

(d) Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

(e) The site can be adequately served by all required utilities and public services.

The following analysis provides substantial evidence that the Project properly qualifies for an exemption under CEQA Guidelines §15332 as a Class 32 urban infill development, and would not have a significant effect on the environment.

Exceptions

Even if a project is ordinarily exempt under any of the potential categorical exemptions, CEQA Guidelines Section 15300.2 provides specific instances where exceptions to otherwise applicable exemptions apply. Exceptions to a categorical exemption apply in the following circumstances, effectively nullifying a CEQA categorical exemption:

(a) Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located. A project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

(d) Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.

CEQA Streamlining

The Project is also eligible for streamlined environmental review based on its consistency with a community plan (Guidelines Section 15183) and its qualification as an infill project (Section 15183.3).

Community Plan Consistency

CEQA Guidelines Section 15183 allow streamlined environmental review for projects that are "consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site." Section 15183(c) specifies that "if an impact is not peculiar to the parcel or to the proposed project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standard, then an EIR need not be prepared for the project solely on the basis of that impact."

The following analysis demonstrates that the Project is consistent with the development density established by existing zoning and General Plan policies for which an EIR was certified (i.e., the City of Oakland General Plan Land Use and Transportation Element EIR (1998), and the City of Oakland General Plan Housing Element and EIR (2010)). As such, the analysis presents substantial evidence that, other than Project-specific effects which may be peculiar to the Project or its site, the Project's potential contribution to overall cumulatively significant effects has already been addressed as such in these prior EIRs, or will be substantially mitigated by the imposition of City of Oakland Standard Conditions of Approval (SCAs), as further described below.

Streamlining For Qualified Infill Projects

CEQA Guidelines Section 15183.3 allows streamlining for certain qualified infill projects by limiting the topics subject to review at the project level, if the effects of infill development have been addressed in a planning level decision, or by uniformly applicable development policies. Infill projects are eligible if they are located in an urban area on a site that either has been previously developed or that adjoins existing

qualified urban uses on at least 75 percent of the site's perimeter; satisfy the performance standards provided in CEQA Guidelines Appendix M; and are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy. No additional environmental review is required if the infill project would not cause any new specific effects or more significant effects, or if uniformly applicable development policies or standards would substantially mitigate such effects.

The following analysis demonstrates that the Project is located in an urban area on a site that has been previously developed; satisfies the performance standards provided in CEQA Guidelines Appendix M; and is consistent with the General Plan land use designation, density, building intensity and applicable policies As such, this environmental review is limited to an assessment of whether the Project may cause any Project-specific effects, and relies on uniformly applicable development policies or standards to substantially mitigate cumulative effects.

City of Oakland - Standard Conditions of Approval

The City of Oakland's Uniformly Applied Development Standards adopted as Standard Conditions of Approval (Standard Conditions of Approval, or SCAs) were originally adopted by the City in 2008 (Ordinance No. 12899 C.M.S.) pursuant to Public Resources Code section 21083.3) and have been incrementally updated over time; the most recent update was adopted April 11, 2017. 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, Stormwater Water Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Green Building Ordinance, historic/Landmark status, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects.

These SCAs are incorporated into projects as conditions of approval, regardless of the determination of a project's environmental impacts. 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, avoid or substantially reduce a project's environmental effects.

In reviewing project applications, the City determines which SCAs apply based upon the zoning district, community plan, and the type of permits/approvals required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which SCAs apply to a specific project. Because these SCAs are mandatory City requirements imposed on a city-wide basis, environmental analyses assume that these SCAs will be imposed and implemented by the project, and are not imposed as mitigation measures under CEQA.

CEQA Exemption Checklist

The following analysis provides substantial evidence to support a conclusion that the Project qualifies for an exemption under CEQA Guidelines Section 15332 as a Class 32 urban infill development, and would not have a significant effect on the environment.

Criterion §15332(a): General Plan & Zoning Consistency

Yes No

☑ ❒ The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

General Plan

The Project site's General Plan land use designation is Central Business District. The intent of the Central Business District (CBD) classification is to encourage, support, and enhance the downtown area as a high density mixed use urban center of regional importance.

The CBD classification includes a mix of large-scale offices, commercial, urban high-rise residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and visitor uses. The Project is an urban mid-rise mixed-use development including ground-floor retail or restaurant space, 6 floors of residential apartments plus a rooftop; this mix of land uses is consistent with the CBD intent.

Specifically, the Project is consistent with the following applicable policy objectives specified in the General Plan LUTE for the Downtown District: **Downtown Objectives D1, D2, D3, D4, D6, D9, D10, D11[1]; Transportation Objectives T2, T4[2]; Industry and Commerce Objectives I/C1, I/C2[3];** and **Neighborhood Objectives N1, N3, N6, N8.[4]**

Zoning

The Project site is zoned Central Business District Commercial (CBD-C). The intent of the CBD-C zone is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor office and other commercial activities, with upper-story spaces intended for a wide range of residential and office or other commercial activities.

[1] City of Oakland General Plan, Land Use and Transportation Element. Policy Framework, p. 67.

[2] Ibid. p. 50

[3] Ibid., p. 39.

[4] Ibid. p. 103

The Project proposes an approximately 149,970-sf building, with recreation spaces on the ground floor and roof level, and a planted roof terrace for shared tenant use. The Project includes 173 new housing units on seven residential floors above the ground floor, which features commercial space of 1,786 sf, fronting Webster. A partially below-ground parking level will provide 131 parking spaces using 3-level mechanical parking stackers. The proposed building height is 84'-11" to the roof. The building has been designed to comply with all design standards and regulations of the Planning Code, including but not limited to the following:

- At a total of nearly 149,970 square feet of gross floor area and a height of 84'11" feet, the Project is below the 200,000 square feet of new floor area above which a Conditional Use Permit is required pursuant to Planning Code Section 17.58.030: Conditional Use Permits for Large Projects. Therefore, no Conditional Use Permit is required.
- At 173 residential units on a parcel of 25,567 gross square feet, the Project's residential density is approximately 148 square feet of lot area per unit, which is within the maximum density limit of 90 square feet of lot area per unit established pursuant to the Planning Code, Table 17.58.04
- First floor setback is 5 ft., which is the maximum allowed per Planning Code Table 17.58.03 (setback is 4 ft. at building entry). Setbacks on 2nd and 3rd floors are also 5 ft., the maximum allowed.
- The Project meets the Code requirements for vehicle parking (providing 131 vehicle spaces-- including one car-share space and three ADA spaces-- within the allowable range of 0-216) and bicycle parking (providing 63 long-term spaces and 12 short-term spaces).
- With a minimum of 13,021 square feet of usable open space (including private and group open space and roof-top garden space) the Project meets or exceeds the minimum usable open space rate of 75 square feet per dwelling unit (which would require 12, 975 sf) pursuant to Planning Code Section 17.58.070.

The Project adheres to the criteria of CEQA Guidelines §15332(a) as being consistent with the General Plan and applicable zoning regulations for the site.

Criterion §15332(b): Project Location, Size & Context

Yes	No	
☑	❒	The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses

The Project is located within the incorporated limits of the City of Oakland on a site of approximately 0.59 acres in area, and is entirely surrounded by properties developed with urban land uses and/or paved public streets (see **Figure 2**). The Project adheres to the criteria of CEQA Guidelines §15332(b) as a site of no more than five acres substantially surrounded by urban uses.

Criterion §15332(c): Endangered, Rare or Threatened Species

Yes No

☑ ❒ The project site has no value as habitat for endangered, rare or threatened species.

As shown at **Figure 2**, the Project site is completely covered with an existing building and paved parking area. Areas not paved or occupied by site structures in the immediate area are typically landscaped or remain undeveloped and cleared of vegetation. No natural vegetation (e.g., grass, shrubs or trees) exists. Consequently, the Project site does not provide habitat for endangered, rare or threatened species. The Project adheres to the criteria of CEQA Guidelines §15332(c).

Criterion §15332(d): Traffic

Yes No

☑ ❒ Approval of the project would not result in any significant effects relating to traffic.

On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's California Environmental Quality Act (CEQA) Thresholds of Significance Guidelines related to transportation impacts in order to implement the directive from Senate Bill 743 (Steinberg 2013) to modify local environmental review processes by removing automobile delay, as described solely by level of service (LOS) 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 draft proposed guidance from the Governor's Office of Planning and Research and the City's approach to transportation impact analysis with adopted plans and polices related to transportation, which promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses.

Consistent with the Planning Commission direction and according to the City of Oakland's *Transportation Impact Study Guidelines* (April 2017), a project would have a significant impact on the environment if it would:

a. 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); or

b. Cause substantial additional VMT per capita, per service population, or other appropriate efficiency measure; or

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.

Criterion (a): Consistency with Plan, Ordinances, or Policies addressing the Safety or Performance of the Circulation System–

The proposed 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.

The 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 such uses by providing residential and commercial land uses in a dense, walkable urban environment that is well-served by local and regional transit, and providing fewer parking spaces than the maximum allowed for the residential component of the Project and no parking for the non-residential components of the Project.

The Project is consistent with both the City's Pedestrian Master Plan and Bicycle Master Plan as it would not make major modifications to existing pedestrian or bicycle facilities in the surrounding areas nor adversely affect installation of future facilities. Further, because the Project would not generate more than 50 net new peak hour trips, preparation and implementation of a TDM Plan is not required.

Overall, the Project 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.

Criterion (b): Vehicle Miles Travelled (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, where a higher density of development, a mix of land uses, and travel options other than private vehicles are available. Given these travel behavior factors, most of Oakland has a lower VMT/per capita and VMT/employee ratios than the nine-county San Francisco Bay Area region. In addition, some neighborhoods of the city have lower VMT ratios than other areas of the city.

VMT Estimate

Neighborhoods within Oakland are expressed geographically as transportation analysis zones, or TAZs. The Metropolitan Transportation Commission (MTC) Travel Model includes 116 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 is a model that assigns all predicted trips within, across, or 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 particular scenario.

The travel behavior from MTC Travel Model is modeled based on the following inputs:

- Socioeconomic data developed by the Association of Bay Area Governments (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 office 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 of the VMT for an individual resident or employee is included; not just trips into and out of the person's home or workplace. Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 under 2020 conditions and 13.8 under 2040 conditions, and the regional average daily VMT per worker is 21.8 under 2020 conditions and 20.3 under 2040 conditions.

Thresholds of Significance for VMT

The following are thresholds of significance related to substantial additional VMT:

- For residential projects, a project would cause substantial additional VMT if it exceeds existing regional household VMT per capita minus 15 percent.
- For office projects, a project would cause substantial additional VMT if it exceeds the existing regional VMT per employee minus 15 percent.
- For retail projects, a project would cause substantial additional VMT if it results a net increase in total VMT.

Screening Criteria

VMT impacts would be less than significant for a project if any of the identified screening criteria 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% or more below the regional average

3. Near Transit Stations: The project is located in a Transit Priority Area or within a one-half mile of a Major Transit Corridor or Stop[5] and satisfies the following:

   a. Has a Floor Area Ratio (FAR) of more than 0.75.

   b. Includes less parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site).

   c. Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the MTC).

Impact Analysis

The Project satisfies the criteria for Low-VMT Area (#2) and Near Transit Stations (#3).

Criterion #1: Small Projects

The Project would generate more than 100 vehicle trips per day; it does not meet criterion #1.

Criterion #2: Low-VMT Area

Table 2 shows the estimated 2020 and 2040 VMT per capita for TAZ 945, 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 2, the 2020 and 2040 estimated average daily VMT per capita in the project TAZ is less than the regional averages minus 15-percent.

According to the Transportation Impact Review Guidelines (TIRG), commercial space of fewer than 80,000 square-feet is considered local serving and is not expected to contribute to an increase in VMT. Therefore, it is presumed that the Project would not result in substantial additional VMT, and Project impacts with respect to VMT would be less than significant.

Table 2: Daily Vehicle Miles Traveled Per Capita

	2020		2040		TAZ 971	
Lane Use	Regional Average	Regional Average Minus 15%	Regional Average	Regional Average Minus 15%	2020	2040
Residential (VMT Per Capita)[1]	15.0	12.8	13.8	11.7	5.3	4.5

1. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita and accessed in August 2017.

[5] 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

Criterion #3: Near Transit Stations

The Project is located about 0.2 miles from the 19th Street BART Station and within 0.5 miles of frequent bus service along Broadway (Route 51A with 10-minute peak headways), and Thomas L. Berkeley Way (20th Street) (Routes 72/72M/72R with 10- to 12-minute peak headways, and Route 6 with 10-minute peak headways). The Project meets the three conditions necessary to satisfy Criterion #3:

- The Project would have an FAR greater than 0.75.
- The Project would include 131 parking spaces for Project residents, which corresponds to 0.76 parking spaces per unit, and no commercial parking. The Project would not designate any spaces for Project visitors or retail employees. The City of Oakland Planning Code (Section 17.116.060) has no parking minimum requirement and allows a maximum of 1.25 spaces per unit for multi-family residential developments in the CBD-C zone. The number of parking spaces provided by the Project would be below the maximum parking supply allowed by the Planning Code. Therefore, the Project would not provide more parking for use by residents, customers, or employees than other typical nearby uses, nor would it provide more parking than required by City Code.
- The Project is located within the Downtown Priority Development Area (PDA) as defined by Plan Bay Area, and is therefore consistent with the region's Sustainable Communities Strategy.

VMT Screening Conclusion

The Project would satisfy the Low-VMT Area (#2) and the Near Transit Stations (#3) criteria and is therefore presumed to have a less–than-significant impact on VMT.

Estimated Trip Generation

Trip Generation for the residential land use was estimated using the Institute of Traffic Engineers (ITE) Trip Generation Manual (9th Edition). The existing site's trip generation is applied as a reduction to the trip generation estimates of the Project to produce an estimate of net new vehicle trips. In addition, because the ITE data is based on data collected at mostly single-use suburban sites where the automobile is often the only travel mode, the City of Oakland's TIRG recommends a 46.9-percent reduction from the ITE-based trip generation for projects within 0.5 miles of a rapid transit station, to account for non-automobile trips. This reduction is based on 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 areas less than 0.5-miles from a BART Station is about 46.9-percent (see Attachment C for details on the methodology of estimation).

Table 3 summarizes the trip generation for the proposed Project. Net new vehicle trips are less than 50 in both AM and PM peak hours. For this reason, and because it is below the screening threshold for detailed VMT analysis, pursuant to the City's TIRG an additional Transportation Impact Study is not required for the Project.

Table 3: Vehicle Trip Generation

Land Use	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Project Trip Generation								
Apartments[2]	173 DU	1,180	18	71	89	73	40	113
High-Turnover (Sit-Down) Restaurant[3]	1.8 KSF	230	11	9	20	11	7	18
Proposed Project Raw Trip Generation		***1,410***	***29***	***80***	***109***	***84***	***47***	***131***
Pass-By Trips - Restaurant (21% Daily, 43% PM)[4]		*-50*	*--*	*--*	*--*	*-5*	*-3*	*-8*
Subtotal		***1,360***	***29***	***80***	***109***	***79***	***44***	***123***
Non-Auto Adjustment[5]		*-640*	*-14*	*-37*	*-51*	*-37*	*-21*	*-58*
Proposed Project Vehicle Trip Generation		***720***	***15***	***43***	***58***	***42***	***23***	***65***
Existing Trip Generation								
Walk-In Bank[6]	6.0 KSF[7]	590	--	--	--	32	41	73
Medical-Office Building[8]	15.0 KSF[7]	550	28	8	36	15	39	54
Existing Raw Trip Generation		***1,140***	***28***	***8***	***36***	***47***	***80***	***127***
Pass-By Trips - Bank (24% Daily, 47% PM)[9]		*-140*	*--*	*--*	*--*	*-15*	*-19*	*-34*
Subtotal		*1,000*	*28*	*8*	*36*	*32*	*61*	*93*
Non-Auto Adjustment[5]		*-470*	*-13*	*-4*	*-17*	*-15*	*-29*	*-44*
Existing Vehicle Trip Generation		*530*	*15*	*4*	*19*	*17*	*32*	*49*
Net New Vehicle Trip Generation		***190***	***0***	***39***	***39***	***25***	***-9***	***16***

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):
   Daily: T = 6.06*(X)+123.56
   AM Peak Hour: T = 0.49*(X)+3.73 (20% in, 80% out)

PM Peak Hour: T = 0.55*(X)+17.65 (65% in, 35% out)

3. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover (Sit-Down) Restaurant):
   Daily: T = 127.15*(X)
   AM Peak Hour: T = 10.81*(X) (55% in, 45% out)
   PM Peak Hour: T = 9.85*(X) (60% in, 40% out)
4. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 932 is 43%. Half (21%) is applied to the daily trips.
5. The 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment within 0.5 miles of a BART Station.
6. ITE Trip Generation (9th Edition) land use category 911 (Walk-In Bank):
   Daily: (PM Peak Hour Trips)*8
   No daily rates are provided in ITE. The bank is open 8 hours on weekdays. This analysis assumes each hour generates the same number of trips as the PM peak hour.
   AM Peak Hour: The bank is closed during the AM peak period (7:00AM-9:00AM)
   PM Peak Hour: T = 12.13*(X) (44% in, 56% out)
7. Existing land uses' square footage is approximated based on site visits and information provided by the applicant.
8. ITE Trip Generation (9th Edition) land use category 720 (Medical-Office Building):
   Daily: T = 36.1*(X)
   AM Peak Hour: T = 2.39*(X) (79% in, 21% out)
   PM Peak Hour: T = 3.57*(X) (28% in, 72% out)
9. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition) data for Drive-In Banks. The weekday PM peak hour average pass-by rates for land use category 912 is 47%. Half (24%) is applied to the daily trips.

Source: Fehr & Peers, 2017.

Planning-Related Non-CEQA Issues Discussion

This section discusses transportation-related topics that are not considerations under CEQA but are evaluated to inform decision makers and the public about these issues. These issues will be addressed within the City's design review process.

Vehicle Access and On-Site Circulation

Residents would access the site through a driveway on Webster Street, about 300 feet north of 19th Street. The driveway would provide access to a secured lower-level parking garage, providing 131 parking spaces, consisting of 127 three-tiered mechanical lift parking spaces, one car-share space, and three ADA spaces. The parking garage would provide adequate internal circulation for vehicles, with a 21-foot drive aisle and turnaround space at the end of the driveway.

Project Driveway Sight Distance

The proposed driveway on Webster Street is sloped to provide access to the lower-level parking garage. The grade and width of the driveway may limit sight distance between motorists exiting the driveway and pedestrians on the adjacent sidewalk. Adequate sight distance is defined as a clear line-of-sight between a motorist 10 feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway.

> **Recommendation 1**: Ensure that the driveway design (width and grade) provide adequate sight distance between pedestrians on the adjacent sidewalk and vehicles exiting the parking garage. If adequate sight distance cannot be provided, install mirrors on both sides of the driveway to

aid drivers' and pedestrians' visibility and install flashing lights to alert pedestrians when a vehicle is exiting the driveway.

Vehicles parked on Webster Street on the north side of the driveway may block sight distance between vehicles exiting the driveway and vehicles travelling southbound on Webster Street. The Project's proposed new street scape tree on the north side of the driveway may also affect visibility of exiting vehicles if the tree canopy is lower than six feet from the ground.

Recommendation 2: Ensure that on-street parking on the north side of the Project driveway on Webster Street would not restrict sight distance for exiting vehicles by providing at least 10 feet of red curb on north side of the driveway.

Bicycle Access and Bicycle Parking

Table 4 shows bicycle parking requirements for the Project. The Project would consist of 173 dwelling units and about 1,800 square-feet of commercial space, requiring 46 long-term spaces and 11 short-term spaces. The Project would provide 63 long-term spaces, meeting the *Planning Code* requirements. The Project would provide 12 short-term spaces for use by both the residential and commercial spaces, meeting the requirements for short-term spaces as defined in the *Planning Code.*

The Project would provide long-term bicycle parking for residents in a secured bicycle storage room accessible off Webster Street just north of the Project driveway. The short-term parking would be located on the sidewalk along the building frontage on Webster Street.

Table 4: Bicycle Parking Requirements

Lane Use	Size[1]	Long-Term		Short-Term	
		Spaces per Unit[2]	Spaces	Spaces per Unit[2]	Spaces
Residential	173 DU	1:4 DU	44	1:20 DU	9
Retail	1.8 KSF	minimum	2	minimum	2
Total Required Bicycle Spaces		-	46	-	11
Total Bicycle Parking Provided		-	63	-	12
Bicycle Parking Surplus/(Deficit)		**-**	**17**	**-**	**1**

1. DU = Dwelling Unit; KSF = 1,000 square feet.
2. Based on Oakland Municipal Code Section 17.117.090.

Source: Fehr & Peers, 2017.

Pedestrian Access and On-Site Circulation

Pedestrian access to the residential component of the Project would be provided through a staircase and two elevators in the building lobby. Two additional staircases on the north and south sides of the

Project would provide emergency exits for the building. The building lobby would be accessible through the main entrance on Webster Street and through the Project garage. The commercial component of the Project would be accessible through a separate entrance along Webster Street.

The existing sidewalk width of 12 feet meets the City of Oakland Pedestrian Master Plan (2012) guidelines for sidewalk widths along arterials. The Project does not propose any changes to adjacent pedestrian facilities, and would continue to maintain the existing 12-foot sidewalk width along the Project frontage on Webster Street.

Transit Access

Transit service providers in the Project vicinity include BART and Alameda Contra-Costa Transit District (AC Transit). BART provides regional rail service throughout the East Bay and across the San Francisco Bay. The nearest BART station to the Project site is 19th Street BART Station, about 0.2 miles west of the Project site.

AC Transit, the primary bus service provider in the City of Oakland, operates several bus routes in the vicinity of the Project, with a major transit hub located along Thomas L. Berkeley Way at Broadway approximately 0.3 miles northwest of the Project. The nearest bus stops to the Project are located on 20th Street, east of Webster Street, approximately 300 feet north of the Project. The 33, 611, NL, and 805 routes serve these stops and benches, trash receptacles, and bus signs are provided. No changes to the bus routes operating in the vicinity of the Project are planned and the proposed Project would not modify access between the Project site and transit facilities.

Automobile Parking Requirements

The City of Oakland *Planning Code* (Sections 17.116.060 and 17.116.080) has no minimum parking requirement for both the residential and commercial components of the Project and allows a maximum of 1.25 automobile parking spaces per dwelling unit and a maximum of one space per 300 square-feet of ground floor commercial space. All residential parking must be unbundled and, for projects that include between 50 and 200 dwelling units, one car-share space is required. In addition, Planning Code Section 17.116.105B requires the property owner to make permanently available a monthly transit benefit to each dwelling unit in an amount equal to one-half the price of either an Adult 31-Day AC Transit Pass or an AC Transit EasyPass.

The Project would provide a secured parking garage with a two-way drive aisle and a total of 131 spaces, including 127 three-tiered mechanical lift parking spaces, one surface car-share space, and three ADA spaces.

Table 5 summarizes the required and proposed parking for the Project. The Planning Code would limit parking to a maximum of 216 off-street residential parking spaces and 6 off-street commercial parking spaces for the Project. The Project would provide 131 spaces (corresponding to 0.76 spaces per unit), meeting Code requirements.

Table 5: Required Maximum and Proposed Parking					
Land Use	Size[1]	Required Parking Supply[2]		Provided Parking Supply	Within Range?
		Minimum	Maximum		
Residential[b]	173 DU	0	216	131	**Yes**
Retail[c]	1.8 KSF	0	6	0	**Yes**
Total		**0**	**222**	**131**	**Yes**

1. DU = Dwelling Unit; KSF = 1,000 square feet.
2. Based on City of Oakland Planning Code Sections 17.116.060 and 17.116.080).
Source: Fehr & Peers, 2017

Loading Requirements

City Municipal Code Section 17.116.120 specifies loading requirements for residential and commercial land uses. Per Code, the Project is required to provide one loading berth for its residential uses and no loading berths for its commercial uses, as the commercial space is less than 25,000 sf. The proposed Project provides one loading berth, meeting the City's loading requirement.

Induce automobile travel by increasing physical roadway capacity or by adding new roadways (Criterion c)

The Project does not propose increases in roadway capacity or addition of new roadways. This criterion does not apply to the Project.

Conclusions

The Project's potential impacts related to pedestrian, bicycle, transit, emergency access, and design and incompatible use considerations would be less than significant. The Project would not result in any other significant transportation-related impacts.

Based on the analysis and the findings, implementation of the proposed project would not result in significant impacts related to transportation and circulation. The proposed project would be required to implement **SCA TRANS-1: Construction Activity in the Public Right-of-Way** as well as **SCA TRANS-2**: **Bicycle Parking**.

Criterion §15332(d): Noise

Yes No

☑ ❒ Approval of the project would not result in any significant effects relating to noise.

No specific noise study was conducted because the Project is subject to the City's SCAs related to construction and operational noise levels. With implementation of the required SCAs included in

Attachment A at the end of this CEQA Analysis (for reference, these are **SCA NOI-1: Construction Days/Hours**, **SCA NOI-2: Construction Noise, SCA NOI-3: Extreme Construction Noise**, **SCA NOI-4: Construction Noise Complaints, SCA NOI-5: Exposure to Community Noise**, and **SCA NOI-6: Operational Noise**, the Project would not result in significant effects related to noise and vibration. There is nothing unique or peculiar about the Project or its construction that would suggest that these City SCAs would ensure impacts from noise are less than significant. Therefore, the Project is consistent with Section 15332(d), Noise.

Criterion §15332(d): Air Quality

Yes No

☑ ❒ Approval of the Project would not result in any significant impacts related to air quality.

The Project would result in an increase in criteria air pollutants and ozone precursor emissions from mobile on-road sources and onsite area sources during both the operational and construction periods. An Air Quality Analysis was prepared by Illingworth & Rodkin, Inc. for the Project (see Attachment B)[6], based on the City of Oakland's significance thresholds and the Bay Area Air Quality Management District's (BAAQMD's) 2011 *CEQA Air Quality Guidelines.*[7]

The proposed Project is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). In June 2010, the BAAQMD adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under CEQA. The City of Oakland subsequently adopted BAAQMD's thresholds for emissions of ozone precursors (i.e., reactive organic gases [ROGs] and nitrogen oxides [NOx]), suspended particulate matter (both respirable (PM_{10}) and fine ($PM_{2.5}$), and toxic air contaminants (TACs). These thresholds are supported by substantial evidence presented in the BAAQMD's Revised Draft Options and Justification Report[8].

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to estimate emissions from construction and operation of the site assuming full build-out of the Project. Emissions were compared to significance thresholds adopted by the City to assist in the review of projects under CEQA.

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[6] Air Quality and GHG Emissions Assessment, 1940 Webster Street Residential Development. Prepared by Illingworth & Rodkin, September 22, 2017.

[7] BAAQMD, *California Environmental Quality Act Air Quality Guidelines*. May, 2011, updated in May 2017.

[8] Bay Area Air Quality Management District (BAAQMD), 2009. Revised Draft Options and Justification Report; California Environmental Quality Act Thresholds of Significance, October.

The significance thresholds identified by BAAQMD and adopted by the City for use in air quality analysis are summarized in Table 6, below.

Construction Period Emissions

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which creates airborne dust after it dries.

CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario based on the CalEEMod model defaults for the Project was used in the modeling. The model default site area of 4.55 acres was used to set the construction schedule and equipment usage assumptions, although the Project would be 0.59 acres.

The following Project-specific construction parameters were entered into the model:

- 173 dwelling units entered as "Apartment Mid Rise" with 148,184 square feet (sf), 1,800 sf entered as "High Turnover (Sit Down Restaurant)," and 131 spaces entered as "Enclosed Parking with Elevator."
- Approximately 10,532 cubic yards (cy) of soil export is anticipated during grading
- Demolition of 21,718 sf of buildings
- An estimated 5,400 cy of concrete would be expected during the building construction, which was estimated at 540 cement truck round-trips

The Project construction schedule assumes that the Project would be built out over a period of approximately 24 to 28 months beginning in August 2018. The CalEEMod construction generated schedule estimated 15 months, but probably does not represent the extensive interior work that would be required. The CalEEMod estimate of 15 months or 319 construction workdays was used to compute average daily emissions (total emissions were computed by dividing the total construction emissions by the number of construction days.

Table 7 provides the results of modeling construction period emissions of ozone precursors (ROG and NOx) and fugitive dust (PM10 and PM2.5). As the table shows, none of the pollutants would exceed significance thresholds adopted by the City. Construction period emissions would therefore produce a less-than-significant impact on air quality.

Table 6. Air Quality Significance Thresholds			
Pollutant	**Construction Thresholds**	**Operational Thresholds**	
	Average Daily Emissions (lbs./day)	**Average Daily Emissions (lbs./day)**	**Annual Average Emissions (tons/year)**
Criteria Air Pollutants			
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for Single Sources			
Excess Cancer Risk	>10 per one million		
Hazard Index	>1.0		
Incremental annual $PM_{2.5}$	>0.3 µg/m^3		
Health Risks and Hazards for Combined Sources (Cumulative from all sources within 1,000 foot zone of influence)			
Excess Cancer Risk	>100 per one million		
Hazard Index	>10.0		
Annual Average $PM_{2.5}$	>0.8 µg/m^3		
Greenhouse Gas Emissions			
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		
Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.			

Table 7. Construction Period Emissions				
Scenario	**ROG**	**NOx**	**PM_{10} Exhaust**	**$PM_{2.5}$ Exhaust**
Total construction emissions (tons)	1.54 tons	3.97 tons	0.20 tons	0.19 tons
Average daily emissions (pounds)[1]	9.7 lbs.	24.9 lbs.	1.3 lbs.	1.2 lbs.
BAAQMD Thresholds (pounds per day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 319 workdays.				

Source: Illingworth & Rodkin Air Quality and GHG Emissions Assessment, Attachment B to this CEQA document.

The Project would be required to comply with applicable SCAs related to construction emissions – particularly SCA AIR-1. Implementation of Basic controls under SCA AIR-1 (items a – j) would reduce emissions of both criteria air pollutants and TACs during construction. SCA AIR-1 minimizes construction health risks by requiring exposed surfaces to be watered; trucks hauling sand, soil, and other loose materials to be covered; visible dirt track-out to be removed daily; new roads, driveways, sidewalks to be paved within one month of grading or as soon as possible; stockpiles to be enclosed, covered, and watered twice daily; vehicle speeds on unpaved roads to be limited; and idling time to be limited. Further, SCA AIR-1 minimizes diesel emissions by minimizing idling; ensuring that construction equipment is running in proper condition; and by specifying that portable equipment would be powered by electricity if available.

Because the Project includes demolition of the existing office building, SCA Air-1 as applied to this Project includes Enhanced Controls (k – y). Item (w) within SCA Air-1, calls for construction equipment to be equipped with Best Available Control Technology (BACT) for emission reductions of NOx and PM. BACT is interpreted by the City of Oakland to mean and to require all mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days continuously to meet U.S. EPA particulate matter emissions standards for Tier 4 engines. Compliance with SCA Air-1 item (w) is expected to reduce on-site diesel exhaust emissions by over 80 percent.

Operational Period Emissions

Operational air emissions from the Project would be generated primarily from autos driven by future residents, commercial patrons, and employees. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to predict emissions from operation of the proposed Project assuming full build-out. Inputs into the modeling for operational emissions are described below.

Land Uses

The Project land uses were input to CalEEMod, as described above. An additional CalEEMod run was set up to compute the emissions from the *existing* land use (ground floor bank, medical services on second floor). The land use entered was 6,000 sf as "General Office Building".

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year the Project could begin operating was assumed to be 2021. Emissions associated with build-out later than 2021 would be lower.

Trip Generation Rates

CalEEMod default trip rates, types and lengths were used in the emissions modeling. CalEEMod predicted 1,693 new Project trips compared to the traffic study's estimate of 1,360 daily trips which accounted for the Oakland urban environment and proximity to the BART station. Mobile emissions produced by CalEEMod were adjusted downward to account for this difference (a 19-percent reduction).

Energy

CalEEMod defaults for energy use were used, which are assumed to include 2013 Title 24 Building Standards.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project.

Project Generator

The only source of stationary air pollutants identified with build-out of the Project is assumed to be an emergency back-up generator. The Project proposes the inclusion of a 230 kilowatt (kw) generator with a diesel-fueled engine. The emergency back-up generator would be used for backup power in emergency conditions. The generator would be operated for testing and maintenance purposes, with a maximum of 50 hours each per year of non-emergency operation under normal conditions (the maximum allowed by BAAQMD). During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and U.S. EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

Total Project Emissions

Table 8 reports the estimate annual emissions in tons and average daily operational emissions in pounds, assuming 365 days of operation per year. As shown in Table 8, average daily and annual emissions of ROG, NOx, PM_{10}, or $PM_{2.5}$ emissions associated with Project operations would not exceed the BAAQMD significance thresholds.

Table 8. Operational Emissions				
Scenario	**ROG**	**NOx**	**PM_{10}**	**$PM_{2.5}$**
Project Annual Operational Emissions	0.98 tons	1.58 tons	0.65 tons	0.19 tons
Existing Emissions	0.21 tons	0.76 tons	0.32 tons	0.09 tons
Net Project Emissions	0.77 tons	0.82 tons	0.33 tons	0.10 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	**No**	**No**
Average Daily Net Project Operational Emissions (pounds)[1]	4.2 lbs.	4.5 lbs.	1.8 lbs.	0.5 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
[1] Assumes 365-day operation.				

Air Quality Standards

As discussed above, the Project would result in emissions that are below the significance thresholds adopted by BAAQMD for evaluating impacts related to ozone and particulate matter. Therefore, the Project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the Project would be the pollutant of greatest concern at the local level. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the carbon monoxide standard. The highest measured level over any 8-hour averaging period in the Bay Area during the last 3 years is less than 3.0 ppm, compared to the ambient air quality standard of 9.0 ppm. The Project would generate a relatively small amount of new traffic. Based on the Traffic Impact Review, the Project would add approximately 1,693 daily trips and would not affect high-volume intersections that have the potential to result in exceedances of an ambient air quality standard for carbon monoxide. Because cumulative traffic volumes at all intersections affected by the Project would be less than 44,000 vehicles per hour, the Project will have a less-than significant effect with respect to carbon monoxide.

Toxic Air Contaminants (TACs)

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying the risk to community health from siting a new sensitive receptor or a new source of TACs. The Project's proposed diesel-powered generator would only be operated for testing and emergency purposes. In addition, construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

The City of Oakland uses the BAAQMD CEQA Guidelines as the significance threshold in determining an unacceptable or significant cancer risk or hazard. For cancer risk, which is a concern with diesel particulate matter (DPM) and other mobile-source TACs, BAAQMD considers an increased risk of

contracting cancer that is 10.0 in one million chances or greater to be significant risk for a single source. The BAAQMD CEQA Guidelines also consider single-source TAC exposure to be significant if annual fine particulate matter ($PM_{2.5}$) concentrations exceed 0.3 micrograms per cubic meter (µg/m3) or if the computed hazard index (HI) is greater than 1.0 for non-cancer risk hazards.

Cumulative exposure is assessed by combining the risks and annual $PM_{2.5}$ concentrations for all sources within 1,000 feet of a project. The thresholds for cumulative exposure are an excess cancer risk of 100 in one million, annual PM2.5 concentrations of 0.8 µg/m3, and an HI greater than 10.0. These thresholds were used to address impacts from TAC sources that could affect future Project residents. The methodology used to assess cancer risk is consistent with recently finalized guidance issued by the State Office of Environmental Health Hazards Assessment (OEHHA) designed to provide greater protections for infants and children.

Sources of TACs Affecting Project Residences

A review of the Project site has identified several sources including roadways and stationary sources that are within 1,000 feet of the site and could, therefore, adversely affect the site. Contributing sources within the influence area include:

1. Local Roadways: These include Webster St, Harrison St, Franklin Street, 17th Street, 19th Street, Broadway, and Thomas Berkeley Way/20th Street.
2. Stationary Sources: A total of fourteen (14) identified stationary sources listed and permitted by the Bay Area Air Quality Management District (BAAQMD).

Local Roadways

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways may have a potentially significant effect on a proposed project. Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates predicted using EMFAC2014 and (2) adjustment of cancer risk reflecting new OEHHA guidance (see Attachment B for details).

BAAQMD-Permitted Stationary Sources (Offsite)

BAAQMD's *Stationary Source Screening Analysis Tool* was used to identify stationary sources that may affect future residential development at the site. This is a Google Earth map tool used to identify BAAQMD permitted stationary sources. The linked database also includes the associated estimated cancer risk and hazard impacts predicted by BAAQMD. A *beta calculator* is provided by BAAQMD to adjust the risks based on the source emissions and distance between the source and the receptor. A total of fourteen (14) sources were identified.

The Project will need to comply with **SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants)**, which requires the Project applicant to incorporate appropriate measures into the Project design in

order to reduce the potential health risk due to exposure to toxic air contaminants from offsite sources, if a Health Risk Assessment indicates health risks above threshold levels. The analysis conducted for the Project demonstrated that the offsite sources did not create health risks beyond acceptable levels, and therefore no health risk reduction measures are required relative to those sources.

Proposed Onsite Generator

To obtain an estimate of potential cancer risks from the proposed diesel-fueled generator the AERMOD dispersion model was used to estimate the maximum annual diesel particulate matter (DPM) concentration at the proposed on-site residential receptors. The maximum modeled DPM and $PM_{2.5}$ concentrations occurred at the proposed on-site residential receptors at the second-floor level residences. Concentration levels decrease at higher floors. The maximum annual $PM_{2.5}$ concentration was 0.09023 $\mu g/m^3$. The maximum cancer risk associated with the maximum modeled DPM concentration was found to be 67.2 in one million. The maximum on-site residential HI would be less than 0.01.

Increased cancer risks from routine testing and maintenance of the Project generator would exceed the BAAQMD significance level for Project sources of 10 chances per million. The other risk measures from operation of the Project emergency generator ($PM_{2.5}$ concentrations and Hazard Indices) would be well below BAAQMD significance thresholds. Because the estimate cancer risk exceeds acceptable thresholds, the Project will need to comply with **SCA AIR-3: Stationary Sources of Air Pollution (Toxic Air Contaminants)**, which requires measures be taken in the design and operation of the emergency generator.

The combination of impacts from <u>all</u> sources at the onsite receptor most impacted (considered the Maximally Exposed Individual (MEI), in this case located at the southwestern corner of the Project site,) is below the cancer risk threshold of 100 chances per million; further, the annual $PM_{2.5}$ concentration from all sources does not exceed 0.8 $\mu g/m^3$ and the Hazard Index is well below 10.0. See Figure 17.

<u>Impacts to Offsite Receptors</u>

The closest offsite sensitive receptor to the Project is an apartment building located about 400 feet west on Webster Street between 17th and 19th Street. BAAQMD's *Stationary Source Screening Analysis Tool*[9] was used to predict the near-source screening risk level. This risk level was adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Having adjusted for an approximate distance of 400 feet, the cancer risk was found to be 2.74 in a million, an HI of less than 0.01 and less than 0.01 µg/m3 PM2.5 concentration.

<u>Recommendations to Meet SCA AIR-3</u>

Compliance with SCA-AIR-3 requires that the Applicant incorporate appropriate measures into the Project design in order to reduce the potential health risk from on-site stationary sources of toxic air

[9] Air Quality and GHG Emissions Assessment, 1940 Webster Street Residential Development. Prepared by Illingworth & Rodkin, September 22, 2017.

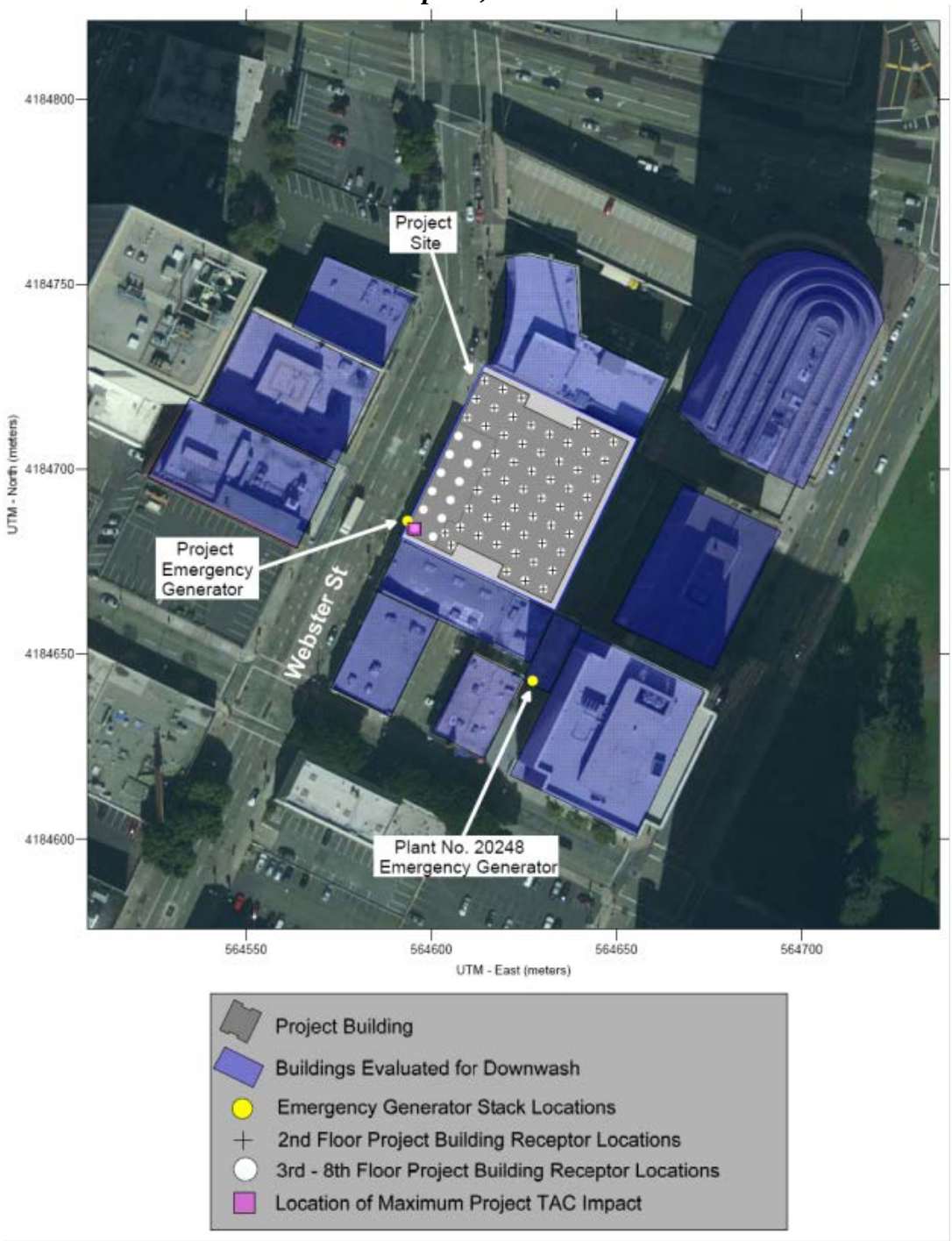
contaminants. Based on the Health Risk Assessment prepared for the Project, the predicted cancer risk exceeds the City's cancer risk at residential units near the generator exhaust stacks. To meet the requirements of SCA AIR-3, the following would apply to the project generator:

1. Modify the location and design of the project generator exhaust or generator design;
2. Install a generator that includes a diesel particulate filter that meets CARB Level 2 VDECS (i.e., Verified Diesel Emissions Control Strategies) or meets U.S. EPA Tier 4 engine standards for particulate matter emissions; and
3. Limit the number of hours that the engine can be tested to less than 50 hours and the number of hours would be based on a revised health risk assessment.

To ensure that the generator meets the requirements of SCA AIR-3, the applicant would need to provide an updated health risk assessment that incorporates the recommendations listed above and demonstrates that the resulting cancer risk would be reduced to less than 10 in one million. It is likely that more than one of the listed measures above would have to be incorporated to meet the SCA AIR-3 requirements. The measures, taken together, would be expected to constitute compliance with SCA-AIR-3.

Implementation of the required SCAs listed in Attachment A (**SCA AIR-1: Construction-Related Air Pollution** [Dust and Equipment Emissions], **SCA AIR-2: Exposure to Air Pollution** [Toxic Air Contaminants], which has already been satisfied, and **SCA AIR-3: Stationary Sources of Air Pollution** [Toxic Air Contaminants]) would reduce the Project's impacts related to construction-phase criteria pollutant emissions and cumulative health risks from TAC emissions posed by the Project. In addition, the backup diesel generator proposed for the Project will require an operating permit from BAAQMD, which will only be issued if the equipment demonstrates compliance with all applicable emissions thresholds. The Project would not result in significant effects related to air quality. Therefore, the Project is consistent with Section 15332(d), air quality.

Figure 17. Locations of Off-Site Stationary Source, Project Emergency Generator, On-Site Sensitive Receptors, and On-Site MEI



Source: Air Quality and GHG Emissions Assessment, 1940 Webster. Prepared by Illingworth & Rodkin. September 22, 2017.

Criterion §15332(d): Water Quality

Yes No

☑ ❒ Approval of the project would not result in any significant effects relating to water quality.

The Project is located within a highly urbanized environment and there are no lakes, creeks or other surface waters in the immediate proximity. Lake Merritt (the nearest surface water body) is approximately 800 feet to the east and separated from the Project site by other urban development. A Phase I Environmental Site Assessment conducted for the site found that groundwater consistently flowed to the northeast and was encountered in boreholes drilled on the site at between 61-21 ft.[10] Construction of the Project will involve demolition, grading and construction, all of which could result in erosion and/or sedimentation of downstream receiving waters. The Project is located in Federal Emergency Management Agency (FEMA) Flood Zone X, which is considered by FEMA to be an area of minimal flood hazard; it is outside of the 100-year or 500-year floodplain, based on the Flood Insurance Rate Map produced by FEMA.[11]

The Project will be built on a site area of 25,567 sf, of which 25,448 is existing impervious surface to be replaced. The Project will create or replace 25,567 sf of impervious surface, which represents over 100% of the lot area. Because the Project will create or replace 10,000 square feet or more of impervious surface, it is a Regulated Project under Provision C.3 of the Municipal Regional Stormwater Permit issued by the State Water Resources Control Board (SWRCB) under the National Pollutant Discharge Elimination System (NPDES). As a Regulated Project, the Project must comply with **SCA HYD-2**, which requires the Project applicant to submit a Post-Construction Stormwater Management Plan to the City for review and approval with the Project drawings submitted for site improvements, and to implement the approved Plan during construction. The Project will provide stormwater runoff treatment for all existing, new and/or replaced impervious surfaces onsite.

The Project is categorized as a Type B Special Project under the criteria in the Alameda County Stormwater Manual, Appendix J (Special Projects), and its residential density of 293 dwelling units per acre qualifies it to treat 100% of project runoff using non-Low Impact Development (LID) measures. The Project will implement a stormwater treatment vault to treat all runoff. The Project site is composed of a single drainage area; the treatment vault would be located at the southeast corner of the roof. Site design measures will include installing stenciling at storm drain inlets; plumbing interior floor drains to the sanitary sewer; covering and enclosing the trash/recycling storage areas and designing these areas

[10] Phase I Environmental Site Assessment, 1940 Webster St, prepared by Langan Treadwell Rollo, May 25 2016, p. 9.

[11] FEMA Flood Map 06001C0067G, effective 8/3/2009. Available at https://msc.fema.gov/portal/search#searchresultsanchor. Accessed August 30, 2017

to prevent storm water run-on and run-off into the trash area; covering outdoor equipment and material storage areas, or design them to avoid pollutant contact with stormwater runoff; and providing a grease interceptor for any restaurant sinks. Stormwater quality features will be sized to comply with Provision C.3 of the Municipal Regional Stormwater Permit, using a flow hydraulics design basis, assuming a flow of runoff resulting from a rain event equal to at least 0.2 inches/hour intensity. The peak flow requirement of the selected treatment vault is 0.10 cubic feet per second (cfs) (based on C.3 design flow rates); the Project treatment vault will treat 0.12 cfs peak flows. No hydromodification measures would be required.

Because the Project will only disturb approximately 0.59 acres of land (i.e., less than 1 acre of developed or undeveloped land), the Project is not required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) or to obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB).

With implementation of the required SCAs listed in Attachment A **(SCA-HYD-1: Erosion and Sedimentation Control Measures for Construction and SCA-HYD-2: NPDES C.3 Stormwater Requirements for Regulated Projects)**, the Project would be in compliance with the NPDES Permit requirements and reduce potential impacts related to water quality. Therefore, as described above, the Project would not result in significant effects related to water quality and is consistent with Section 15332(d), Water Quality.

Criterion §15332(e): Utilities and Public Services

Yes	No	
☑	❒	The site can be adequately served by all required utilities and public services.

On-site utilities would include storm drainage, electricity, gas, domestic water, and wastewater. All on-site utilities would be designed in accordance with applicable codes and current engineering practices. The required utilities can be adequately serviced by utility providers using existing public service rights-of-way. The Project applicant would pay all fees in accordance with the City's Master Fee Schedule to fund utility improvements as required. The Project will require new laterals for service connections.

The increase in residential units is consistent with the General Plan LUTE and LUTE Environmental Impact Report (EIR) (1998), the Housing Element EIR, and the 2011 Redevelopment Plan EIR. The Project's increase in demand for public services is consistent with these prior CEQA analyses. The Project may increase student enrollment at local schools and, pursuant to Senate Bill 50, the Project sponsor would be required to pay school impact fees, which are established to offset potential impacts from new development on school facilities. This would be deemed full and complete mitigation. In addition, the Project would provide approximately 13,021 square feet of open space (group and private) for the residential units, as described in the Project Description above.

With implementation of the required SCAs listed in Attachment A (**SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling, SCA UTIL-2: Underground Utilities, SCA UTIL-3: Recycling Collection and Storage Space, SCA UTIL-4: Green Building Requirements, SCA UTIL-5: Sanitary Sewer**

System, and SCA UTIL-6: Storm Drain System), potential impacts to utilities and public services would be reduced. Therefore, the Project site can be adequately served by all required utilities and public services and would not result in significant effects, consistent with Section 15332(e), utilities and public services.

Exceptions to Categorical Exemptions Checklist

In addition to investigating the applicability of CEQA Guidelines §15332 (Class 32), this technical report also assesses whether any of the exceptions to qualifying for the Class 32 categorical exemption for an Infill Project are present. The following analysis compares the criteria of CEQA Guidelines §15300.2 (Exceptions) to the Project

Criterion 15300.2(a): Location

Yes	No	
❒	☑	Is there an exception to the Class 32 exemption for the project due to its location in a particularly sensitive environment, such that the project may impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies?

This possible exception applies only to CEQA exemptions under Classes 3, 4, 5, 6 or 11. Since the Project qualifies as a Class 32 Urban Infill exemption, this criterion is not applicable.

Criterion 15300.2(b): Cumulative Impact

Yes	No	
❒	☑	Is there an exception to the Class 32 exemption for the project due to significant cumulative impacts of successive projects of the same type and in the same place, over time?

The City of Oakland completed an update of the General Plan Land Use and Transportation Element (LUTE) in March 1998. The LUTE includes the City's current Land Use and Transportation Diagram as well as strategies, policies, and priorities for Oakland's development and enhancement during a two decade period. The EIR certified for the LUTE is used to simplify the task of preparing environmental documents on later projects that occur as a result of LUTE implementation. Cumulative environmental effects identified in the LUTE's EIR as significant unavoidable and significant but which can be reduced to less than significant levels through mitigation are limited to the topics of aesthetics/wind, cultural resources, hazards/hazardous materials, land use/planning, population/housing, and public services. As demonstrated under Criterion §15332(a): General Plan & Zoning Consistency (above), the Project is

consistent with the development density established by existing zoning and General Plan policies for the site. There are no peculiar aspects, other than those evaluated herein, that would increase the severity of any of the previously identified significant cumulative effects in the LUTE EIR.

Since the Project is consistent with the development assumptions for the site as provided under the LUTE EIR and the Housing Element EIR, and within the overall range of development within the Downtown area as assumed in the Central District Redevelopment Plan EIR, the Project's potential contribution to cumulatively significant effects has already been addressed in these prior EIRs. Therefore, consistent with CEQA Guidelines Section 15183 which allows for streamlined environmental review, this document needs only to consider whether there are Project-specific effects peculiar to the Project or its site, and relies on the streamlining provisions of CEQA Guidelines Section 15183 to adopt the consideration of cumulative effects in the prior EIRs.

Criterion 15300.2(c): Significant Effect

Yes No

❒ ☑ Is there an exception to the Class 32 exemption for the project because there is a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances?

There are no known unusual circumstances applicable to the Project or its site which may result in a significant effect on the environment (see also the further discussion under Criterion 2[e] regarding Hazardous Materials, below). Therefore, the exception under CEQA Guidelines Sec. 15300.2(c) does not apply to the Project.

Criterion 15300.2(d): Scenic Highway

Yes No

❒ ☑ Is there an exception to the Class 32 exemption for the project because project may result in damage to scenic resources including but not limited to, trees, historic buildings, rock outcroppings or similar resources, within a highway officially designated as a state scenic highway?

The Project site has no trees, rock outcroppings or similar visual resources, and would not be visible from a state scenic highway. The nearest scenic highway, the Macarthur Freeway, (I-580) is located approximately 1 mile to the east and north. The Project site would not be visible from that freeway, because of the greater height of surrounding buildings; it will not block the scenic view of the surrounding Oakland-Berkeley hills from the freeway. Given these facts, the exception under CEQA Guidelines §15300.2(d) does not apply to the Project.

Criterion 15300.2(e): Hazardous Waste Sites

Yes No

❒ ☑ Is there an exception to the Class 32 exemption for the project because the project is located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code?

Phase I ESA

A Phase I Environmental Site Assessments (ESA) has been prepared for the Project site.[12] Based on the investigation conducted for the Phase I study, the Project site is not identified on any list compiled pursuant to Section 65962.5 of the Government Code or any other list compiled for purposes related to identifying the prior release of hazardous materials that, as a result of such a listing, would create a significant hazard to the public or the environment and no exception to the Class 32 exemption is present under this criteria. The Project site was listed on the regulatory database as The Fields Trust and appears on the California HAZNET database, which maintains a list of hazardous waste manifests received by the California Department of Toxic Substances Control (DTSC). The listing was done in relation to removal of 0.42 tons of unspecified waste removed from the site in 2000 and transported offsite to a landfill or transfer station for disposal. However, the California HAZNET database is not a list compiled pursuant to Section 65962.5 of the Government Code or [a] list compiled for purposes related to identifying the prior release of hazardous materials that, as a result of such a listing, would create a significant hazard to the public or the environment. Therefore, the Project site's inclusion on this list does not preclude application of the Categorical Exemption.

The Phase I ESA revealed the following recognized environmental condition in connection with the site or adjoining properties:

- Based on analytical results and groundwater gradient direction, groundwater contamination from an upgradient source (1900 Webster Street) may be migrating to the Project site. If encountered, special handling and/or sampling will likely be required during any construction activities.

  1900 Webster Street, on the northeast corner of Webster Street and 19th Street (approximately 50 feet south to southwest and upgradient from the Project site), is listed on several regulatory databases as a Leaking Underground Storage Tank (LUST) Site. It is currently occupied by Lake Merritt Dental and Ikon Office Solutions. 1900 Webster was occupied by a gasoline service station from approximately 1940 to 1966. Soil borings and groundwater samples conducted in 2011 revealed concentrations of Total Petroleum Hydrocarbons as gasoline (TPH-g), Total

[12] Langan Treadwell Rollo, *Phase I Environmental Site Assessment, 1940 Webster Street Oakland, CA*, May 25, 2016.

Petroleum Hydrocarbons as diesel (TPH-d), and Total Petroleum Hydrocarbons as motor oil (TPH-mo). Ethylbenzene and Xylenes were also detected in one groundwater sample. Benzene, toluene and MTBE were not detected in those soil and groundwater samples. Soil borings conducted in 2012 by Schutze & Associates, Inc. showed that the highest detected petroleum hydrocarbon concentrations in groundwater were at the property to the southeast of the 1900 Webster Street property, suggesting a petroleum hydrocarbon source on the adjacent property to the southeast.

In 2013, P&D Environmental conducted additional soil sampling tests at 1900 Webster Street and found that petroleum hydrocarbons were not detected in any of the soil samples at concentrations exceeding their respective RWQCB Environmental Screening Levels (ESLs) for commercial land use, with the exception of a single soil sample collected at a depth of 13.0 feet bgs. The groundwater sample results indicated elevated results of petroleum hydrocarbons in the northeastern portion of the property.

In 2015, Broadbent conducted additional site assessment activities at 1900 Webster to further evaluate potential impacts to soil, groundwater, and soil vapor at the site. Soil samples were analyzed for gasoline-range organics (GRO), diesel-range organics (DRO), benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tertiary butyl ether (MTBE), ethyl-butyl ether (ETBE), tert-amyl-methyl ether (TAME), ter-butyl alcohol (TBA), isopropyl ether (DIPE), and naphthalene. The results indicated low concentrations of GRO, DRO, ethylbenzene, total xylenes, and naphthalene, which Broadbent stated was the result of a highly degraded petroleum plume at the property. Broadbent stated that the concentrations detected were below Tier 1 ESLs[13]. Broadbent concluded that since CO2 was detected in all soil vapor probes ranging from 3.8% in SG-1A to 4.5% in SG-2B, bio-attenuation was likely occurring at the property.

Broadbent found that soil and soil vapor analytical results for the chemicals of concern noted above indicated that concentrations were below ACEH's applicable Low Threat Closure Policy (LTCP) criteria. Broadbent concluded that the data indicated minimal to no risk for onsite building occupants from potential petroleum vapor intrusion to indoor air, outdoor air exposure or potential direct contact with soil[14]. Representatives of Atlantic Richfield Company (the responsible party) have submitted further technical support for the closure request, which is being reviewed by the Alameda County Department of Environmental Health (ACEH).

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[13] Tier 1 ESLs are based on conservative default Conceptual Site Model (CSM) scenario conditions. This scenario is designed to protect sites with unrestricted land and water use, shallow soil contamination, shallow ground water, and permeable soil. In general, the ESLs are not used at sites that are subject to the Low-Threat Underground Storage Tank Closure Policy. From *User's Guide: Derivation and Application of Environmental Screening Levels, February 2016.* Prepared by San Francisco Bay Regional Water Quality Control Board. Available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/ESL/ESL%20Users%20Guide_22Feb16.pdf. Accessed 9/7/2017.

[14] *Conceptual Site Model. Sensitive Receptor Survey, and Case Closure Request, Former Atlantic Richfield Company Station #596-A*. Prepared by Broadbent, May 24, 2016, p..7

Broadbent subsequently prepared a Conceptual Site model, Sensitive Receptor Survey (SRS), and Case Closure Request for the site (ACEH Case No. RO0003100; GeoTracker Global ID #T1000000434). The SRS was conducted in February and March 2016, within a 2000-ft radius of the subject site (which includes the Project site at 1940 Webster St). The survey identified several wells and other sensitive locations (schools, hospitals/medical centers, and daycare facilities within the search area. It concluded that the likelihood of contamination through water supply wells as minimal.[15] An underground utilities survey was not conducted as part of the SRS. Depth to water observed at the site has ranged from approximately 16 to 25 ft. bgs. Since underground utilities are typically encountered at a maximum depth of 10 feet bgs, it is not anticipated that underground conduits and/or trenches may act as preferential contaminant migration pathways.

The Phase I ESA prepared for the Project site noted that, due to its nearby upgradient location (approximately 50 feet) and elevated concentrations of GRO and BTEX detected in groundwater, 1900 Webster has the potential to affect the environmental conditions at the Project site.

In addition, the nearby site at 1721 Webster Street, about 400 feet southwest and upgradient from the Project site, is listed on several regulatory databases as a LUST site. In 1992, one 1,000-gallon UST and two 500-gallon USTs were removed from the property. Up to 1,500 milligrams per kilogram (mg/kg) TPH-g and up to 12 mg/kg benzene were detected in the soil samples collected from the UST excavation.

Limited remediation has been conducted at 1721 Webster Street. The Phase I ESA prepared for the Project concluded that, due to the distance of this other property in relation to the Project site and the decreasing concentrations of TPHg, BTEX, and MTBE in groundwater, this other property is not expected to affect environmental conditions at the Project site.[16]

Environmental Site Characterization

Subsequent to the Phase I ESA, an Environmental Site Characterization (ESC) was conducted[17] to assess the presence beneath the site of hazardous materials and petroleum hydrocarbons that could be disturbed during construction of the proposed Project. The results of the soil and groundwater sampling indicated that:

- The site is underlain by about 3 to 4½ feet of fill consisting of loose to medium dense sand with variable silt and clay content and medium stiff to stiff clay with variable sand content. Based on the analytical results from this Limited ESC, some of the fill material contains total and soluble lead concentrations that exceed the State of California hazardous waste criteria. The areas of fill

[15] Ibid. P. 9.

[16] *Phase I Environmental Site Assessment, 1940 Webster Street*. Prepared by Langan Treadwell Rollo. May 25, 2016, p.15.

[17] *Environmental Site Characterization, 1940 Webster Street*. Prepared by Langan Treadwell Rollo. August 12, 2016.

material containing total and soluble lead concentrations exceeding the State of California hazardous waste criteria are at depths of 0.5 and 1.5 feet bgs. The remaining fill material will likely be disposed as Class II non-hazardous material. The sand located beneath the fill material would most likely be disposed as unrestrictive waste depending on the receiving facility's acceptance criteria.

- Because hazardous materials were detected at the site, a Soil Management Plan (SMP) and a Health and Safety Plan (HASP) will be required prior to construction, consistent with City SCA HAZ-2. The SMP will provide recommended measures to mitigate the long-term environmental or health and safety risks caused by the presence of hazardous materials in the soil. The SMP will also contain contingency plans to be implemented during soil excavation if unanticipated hazardous materials are encountered. The HASP will outline proper soil handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction.

The following SCAs apply to the Project, and will ensure that impacts from hazardous materials are less than significant: **SCA HAZ-1 (Hazardous Materials Related to Construction)** and **SCA HAZ-2 (Hazardous Building Materials and Site Contamination**).. The Applicant has already prepared the Environmental Site Assessments required in part (b) of SCA HAZ-2[18]. This SCA also requires that the project Applicant ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These BMPs are detailed in Attachment A.

The presence of now-known hazardous building materials, such as asbestos and lead, in buildings that are 50 years of age is not an unusual circumstance for properties within downtown Oakland. These conditions are prevalent throughout Oakland and other urban centers and as such, do not represent an exception to the CEQA exemption under CEQA Guidelines Sec. 15300.2(c). With required implementation of identified SCAs and required compliance with local, State and federal regulations for treatment, remediation or disposal of such hazardous building materials, hazard to the public or the environment from the presence and removal of such materials is less than significant.

Given the above facts, the exception under CEQA Guidelines §15300.2(e) does not apply to the Project.

Criterion 15300.2(f): Historical Resources

Yes No

❒ ☑ Is there an exception to the Class 32 exemption for the project because the project may cause a substantial adverse change in the significance of a historical resource?

The site was surveyed and rated by OCHS, but presumed not to be of local historical interest at the time of the survey (rated "X"). The existing building is approximately 60 years old. The building is not located

[18] The Environmental Site Characterization conducted for the Project is the functional equivalent of a Phase II ESA, for purposes of meeting the City SCA-2.

within an Area of Primary or Secondary Importance and is not listed in the California Register of Historical Resources, or the National Register of Historic Places. Because of its rating in the OCHS survey, and because it is not resource previously identified in Oakland's Local Register of Historic Resources, it is not a historic resource as defined under CEQA Guidelines §15064.5. Therefore demolishing the building to accommodate new construction on the site would not result in an impact to a historic resource.

Nearby Cultural Resources

The Project site is located one block west and one block south of the boundary of the Lake Merritt Area of Primary Importance (API), the western boundary of which extends shoreward of the Lake to include the Kaiser Center, including the Roof Garden, which is north of the Project site, across 20th Street. The Lake Merritt District has been designated as an API eligible for the National Register under criterion A, "for the governmental history and multiple public uses of this large central-city amenity, and under criterion C, architecture, for the landscape architecture of lake and parks and for the high architectural quality of many of the buildings constructed on its shores to take advantage of views across lake and parks."[19]

The Kaiser Roof Garden is a large landscaped park on the roof of a five-story, 1,339-space parking structure in the Kaiser Center office complex. The 3.5-acre rooftop garden has a reflecting pond, wooden bridge, expansive lawns, mature trees and ample seating for public events. Admittance is free and open to the public between the hours of 9:00 a.m. and 5:00 p.m. on weekdays. The Park can be accessed via the parking garage elevator near 21st and Webster Streets. The entire Kaiser Center has been rated A1+ by the Cultural Heritage Survey, which means it is a contributor of the highest importance to this API. The Kaiser Center is on Oakland's Local Register of Historic Resources.

The Project is also 1½ blocks from the small API that has been created around the Leamington Hotel. The Leamington Hotel Building & Annex at 1800-1826 Franklin Street/365-89 19th Street consists of two adjoining reinforced concrete structures, a hotel and an office and assembly building, at the corner of 19th and Franklin Streets, in a cluster of 1920s high-rise financial and medical office buildings. Designed by William Weeks in 1925-26, the matching buildings are clad in glazed terra cotta and cement plaster with elaborate cast stone ornament in Spanish baroque idiom. This monumental building group was significant, along with the 1928 Capwell store at 20th and Broadway. For these reasons, the Hotel and Annex has been designated a Local Landmark, rated an A1+ by the Oakland Cultural Historic Survey.

One more block to the west of the Project is the Uptown Commercial District API. This API continued development of the Broadway corridor northward in the 1920s-30s as a Deco-era shopping and entertainment district. The main intersection is 20th Street and Broadway, and the District includes the

[19] Historic Resources Inventory, California Department of Parks and Recreation, prepared by the Oakland Cultural Heritage Survey, 1986.

Fox and Paramount Theaters, among other similarly distinguished historic buildings. Architecturally the District offers an important collection of small- to medium-scale commercial buildings of the 1920s and 1930s, including both historic brownstone and terra cotta loft buildings and colorful Art Deco terra cotta.[20]

The Project would not materially impair any of the adjacent or nearby historic resources, either within the same block or in adjacent blocks. The Project would not be taller than the existing building stock surrounding the site and would not cast shadows on nearby historic resources. Construction of the Project would not impair either individually significant or Historic District contributors such that the significance of these resources would be materially impaired.

Archaeologic Resources

No archaeological research, investigations or database searches have been conducted for the property. The Project site is located within an urbanized portion of the downtown, has been previously developed and is surrounded by other urban development and is thus not considered unique. However, archaeological studies have been conducted for areas that are not far from the site.[21] These studies indicate that the general area is potentially sensitive for archaeological and buried sites that are not visible due to urban development, that the area is identified as having low to moderate paleontological sensitivity and it is possible that fossils could be discovered during excavation, and that the inadvertent discovery of human remains during ground-disturbing activities cannot be entirely discounted.

Implementation of **SCA CULT-1: Archaeological and Paleontological Resources – Discovery During Construction, SCA-CUL-2: Archaeologically Sensitive Areas—Pre-Construction Measures.** and **SCA CULT-3: Human Remains – Discovery during Construction** would ensure that any resources that may be discovered are recovered and that appropriate procedures are followed in the event of accidental discovery to minimize potential risk of impact on archaeological resources to a less-than-significant level. With required implementation of these SCAs, potential adverse effect on as-yet undiscovered historic resources will be less than significant, and the exception under CEQA Guidelines §15300.2(e) does not apply.

[20] Landmarks Preservation Advisory Board, Staff Report, March 14, 2016, p. 9. Available at http://www2.oaklandnet.com/oakca1/groups/ceda/documents/agenda/oak057568.pdf. Accessed April 7, 2017.

[21] City of Oakland, Broadway-Valdez Specific Plan EIR, 2014.

Criterion 15300.2: Other Potential Effects

Yes No

❒ ☑ Is there an exception to the Class 32 exemption for the project because the project may result in substantial adverse impacts other than those discussed above?

Based on City of Oakland threshold criteria, the following additional analyses of potential adverse effects pertaining to new buildings within the downtown area of Oakland were also considered.

Greenhouse Gases

GHG emissions associated with development of the proposed Project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the Project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed Project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

CalEEMod Modeling

CalEEMod was used to estimate GHG emissions from operation of the site assuming full build-out of the Project. The Project land use types and size and other project-specific information were input to the model, as described above. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

One adjustment was made to CalEEMod for GHG modeling. CalEEMod has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. Pacific Gas & Electric's most recent certified rate was for 2014, which is 435 pounds of CO_2e per megawatt of electricity produced.[22] PG&E provides past CO_2 intensity rates and forecasts present and future rates (out to 2020), based on the CPUC's GHG calculator. The projected 2020 CO2 intensity rate for PG&E is 290 pounds of CO_2e per megawatt of electricity produced.[23]

[22] See PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers November 2015.

[23] PG&E Web Resource: Fighting Climate Change. Retrieved from: https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/fighting-climate-change/fighting-climate-change.page, Accessed on 1st June, 2017.

Service Population Estimates

The Project service population efficiency rate is based on the number of future residences and full-time employees. The number of future full-time employees is estimated at 5 based on approximately 3 employees per 1,000 sf of retail or office space. The number of future residences is estimated at 438 based on the latest US Census data of 2.53 average persons per household for the City of Oakland.[24] The total service population was estimated as 443.

Construction Emissions

GHG emissions associated with construction were computed to be 1,456 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. While BAAQMD has not proposed a threshold of significance for construction-related GHG emissions, the City of Oakland's adopted thresholds specify that the project's expected GHG emissions during construction should be annualized over a period of 40 years and then added to the expected emissions during operation for comparison to the operational threshold. A 40-year period is used because 40 years is considered the average life expectancy of a building before it is remodeled with considerations for increased energy efficiency. The project's construction emissions are included in the operational emissions below. Best management practices assumed to be incorporated into construction of the proposed project include, but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the Project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project. In 2021, as shown in Table 9, annual net emissions resulting from operation of the proposed project are predicted to be 599 MT of CO_2e, which would not exceed the City of Oakland significance threshold of 1,100 MT of CO_2e/ year. In terms of per capita emissions, the project would be below the BAAQMD threshold and, therefore, *this would be considered a less-than-significant impact*. The Project would include an emergency generator that would be subject to BAAQMD's stationary source threshold of 10,000 MT/year. The emissions from the Project generator would be well below that threshold.

[24] United States Census Bureau, 2016. *Oakland (city), California QuickFacts, Persons per Household (2011-2015)*. Available online: http://www.census.gov/quickfacts/table/PST045215/0653000. Accessed: June 1st , 2017.

Table 9. Annual Project GHG Emissions (CO_2e) in Metric Tons		
Source Category	**Proposed Project 2021**	**Existing**
Construction (amortized over 40 years)	10	-
Area	9	~0
Energy Consumption	252	55
Mobile*	770	383
Solid Waste Generation	51	84
Water Usage	28	5
Total	**1,126**	527
Net Project Emissions	**599** MT of CO2e/year	
Per Capita Emissions	**2.54**	
BAAQMD Threshold	**1,100 MT of CO2e/year and 4.6 MT/capita**	
Stationary Equipment	7	-
BAAQMD Threshold	**10,000 MT of CO2e/year**	
Significant?	**No**	

*Pursuant to Public Resources Code Section 21159.28 (a), a residential or mixed use project that is consistent with a regional Sustainable Communities Strategy is not required to consider emissions from cars and light-duty trucks in its analysis of impacts to global warming. However, these emissions are included here conservatively.

The Project is also required to determine if a GHG Reduction Plan is required in accordance with the City SCA-38, which applies to any project that meets one of three scenarios:

a. Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District [BAAQMD] to operate), (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, and (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO2e annually and more than 4.6 metric tons of CO2e per service population annually (with "service population" defined as the total number of employees and residents of the project).

b. Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, (c) after a GHG analysis is prepared would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO2e annually OR more than 4.6 metric tons of CO2e per service population annually), and (d) are considered to be "Very Large Projects."

c. Scenario C: Projects which (a) involve a stationary source of GHG (i.e., a project that requires a permit from BAAQMD to operate) and (b) after a GHG analysis is prepared would produce total GHG emissions of more than 10,000 metric tons of CO2e annually.

The proposed Project does not fall under Scenario A, because it includes deployment of a backup diesel generator. It does not meet Scenario B or Scenario C because, though it involves a stationary source, its generator would not produce GHG emissions of more than 10,000 metric tons of CO2e annually. Because it does not meet any of these three scenarios, it is not required to prepare Greenhouse Gas (GHG) Reduction Plan pursuant to SCA-38.

Overall, the Project would not have a significant GHG impact.

Wind

Under City of Oakland thresholds of significance, a project would have a significant impact if it were to create winds that exceed 36 mph for more than one hour during daylight hours during the year. A wind analysis is required if the Project's height is 100 feet or greater and it is located in Downtown. The proposed building height is just under 85', therefore a wind analysis is therefore not required, the Project's potential wind impacts are presumed to be less than significant and the exception to a CEQA exemption under CEQA Guidelines §15300.2 does not apply.

Shadows

Under City of Oakland thresholds of significance, a project would have a significant shadow impact if it were to introduce landscape that would cast substantial shadows on existing solar collectors; if it were to cast a shadow that substantially impairs the function of a building using passive solar energy; if it were to cast a shadow that substantially impairs the beneficial use of any public or quasi-public park, lawn, garden, or open space; or if it were to cast a shadow on an historic resource such that the shadow would materially impair the resource's historic significance by materially altering those physical characteristics of the resource that convey its historical significance and that justify its designation as an historic resource.

At less than 85', the Project is shorter than several buildings that surround it. In fact, the three buildings on Harrison Street east of the Project between 19th and 20th Streets are each taller than the proposed Project, so the Project would not add shadows to nearby Snow Park which lies east of Harrison and adjacent to Lake Merritt. The Project will have a less than significant shadow impact, and the exception under CEQA Guidelines §15300.2 does not apply.

Consistency with Community Plan—Section 15183

Section 15183 (a) of the California Environmental Quality Act (CEQA) Guidelines states that "…projects which are consistent with the development density established by the existing zoning, community plan, or general plan policies for which an Environmental Impact Report (EIR) was certified shall not require additional environmental review, except as may be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site."

Further, Section 15183 states,

(b) In approving a project meeting the requirements of this section, a public agency shall limit its examination of environmental effects to those which the agency determines, in an initial study or other analysis:

(1) Are peculiar to the project or the parcel on which the project would be located,

(2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan or community plan with which the project is consistent,

(3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action, or

(4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

(c) If an impact is not peculiar to the parcel or to the project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards, as contemplated by subdivision (e) below, then an additional EIR need not be prepared for the project solely on the basis of that impact.

Section 15183 (f) states, "An effect of a project on the environment shall not be considered peculiar to the project or the parcel for the purposes of this section if uniformly applied development policies or standards have been previously adopted by the city or county with a finding that the development policies or standards will substantially mitigate that environmental effect when applied to future projects, unless substantial new information shows that the policies or standards will not substantially mitigate the environmental effect."

Project Consistency. In accordance with State CEQA Guidelines 15183, the Project qualifies for a Community Plan Exemption because the following findings can be made:

- The land use designation for the site is Central Business District. This classification is intended to encourage, support, and enhance the downtown area as a high-density mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high

technology, retail, entertainment, and transportation. The proposed mixed-use project would be consistent with this designation.

- As demonstrated under Criterion Section 15332(a): General Plan and Zoning Consistency (Section VIII), the Project is consistent with the development density established by existing zoning and General Plan policies for the site, and there are no peculiar aspects that would increase the severity of any of the previously identified significant cumulative effects in the LUTE EIR.

- The Project is consistent with the development goals in the Central District Urban Renewal Plan (Redevelopment Plan). The Redevelopment Plan EIR details particular projects and programs that are anticipated to include targeting investments and activities toward certain catalyst projects, infrastructure improvement projects and infill development projects that are consistent with the General Plan. The Project is consistent with at least two major goals of these projects and programs:
    - Re-establishment of residential area for all economic levels within specific portions of the Redevelopment Project Area.
    - Provisions of employment and other economic benefits to disadvantaged persons living within or near the Redevelopment Project Area.
- The Project is consistent with the City of Oakland's Housing Element of the General Plan, updated for 2015-2023. The 2015-2023 Housing Element indicates that there are as many as 10,400 new housing units that are allowable within the Downtown under current zoning designations, with a likely number of 4,310 housing units to be developed within the Downtown without rezoning or further General Plan Amendments, through opportunity sites and with projects either built, under construction, approved or in predevelopment. Although not specifically identified as an individual Housing Opportunity Site under the Housing Element, the Project site does meet three of the four Housing Elements criteria of sites suitable for new housing development, including:
    - It is an underutilized site with outmoded facilities and/or marginal existing use;
    - It is within Downtown, which accounts for the largest number of potential housing units, as the densities of permitted development are higher than most other areas;
    - It is located along one of the City's major commercial corridors (Franklin and Webster Streets), and utilizes ground floor commercial space with housing above, as encouraged by zoning and development guidelines to maximize residents' access to services including retail opportunities, transportation alternatives and civic activities, while reducing the need for automobiles, thus increasing the sustainability of such development.

Project-specific impacts peculiar to the project or site, or those not analyzed in a prior EIR. Because the Project is consistent with the policies, land use designation, and development parameters in the LUTE and the Housing Element EIRs, the Project's potential contribution to cumulatively significant effects has already been addressed in those prior EIRs. In addition, the Redevelopment Plan EIR analyzed the cumulative effects of development projects that would occur absent the Redevelopment Plan Amendments, which would include 1940 Webster, which is not specifically addressed in the EIR.

Therefore, consistent with CEQA Guidelines Section 15183 which allows for streamlined environmental review, this document needs only to consider whether there are project-specific effects peculiar to the project or its site, and relies on the streamlining provisions of CEQA Guidelines Section 15183 to not re-consider cumulative effects.

Effects Analyzed in Prior EIRs

Environmental Effects Summary--General Plan LUTE EIR

As discussed in Section III above, the 1998 LUTE EIR (including its Initial Study Checklist) determined that development consistent with the LUTE would result in impacts to the following resources that would be reduced to a less-than-significant level with the implementation of mitigation measures and/or SCAs (described in Section VI): aesthetics (views, architectural compatibility and shadow only); air quality (construction dust [including PM_{10}] and emissions, odors); cultural resources (except as noted below as less than significant); hazards and hazardous materials; land use (use and density incompatibilities); water quality; noise (use and density incompatibilities, including from transit/transportation improvements); population and housing (induced growth, policy consistency/clean air plan); public services; and transportation/circulation (intersection operations).

Less-than-significant impacts were identified for the following resources in the 1998 LUTE EIR and Initial Study: aesthetics (scenic resources, light and glare); air quality (clean air plan consistency, roadway emissions, energy use emissions, local/regional climate change); biological resources; cultural resources (historic context/settings, architectural compatibility); energy; geology and seismicity; hydrology and water quality; land use (conflicts in mixed use Projects and near transit); noise (roadway noise citywide, multifamily near transportation/transit improvements); population and housing (exceeding household Projections, housing displacement from industrial encroachment); public services (water demand, wastewater flows, stormwater quality, parks services); and transportation/circulation (transit demand). No impacts were identified for agricultural or forestry resources and mineral resources.

Significant unavoidable impacts were identified for the following environmental resources in the 1998 LUTE EIR: air quality (regional emissions); public services (fire safety); transportation/circulation (roadway segment operations: Grand Avenue between Harrison St. and I-580); and policy consistency (Clean Air Plan). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

Environmental Effects Summary – 2011 Central District Urban Renewal Plan (Redevelopment Plan) Amendments EIR

The 2011 Redevelopment Plan Amendments EIR determined that development facilitated by the Proposed Amendments would result in impacts to the following resources that would be reduced to a less-than-significant level with the implementation of identified mitigation measures and/or SCAs (described in Section IV): aesthetics (light/glare only); air quality (except as noted below as less than

significant and significant); biological resources (except no impacts regarding wetlands or conservation plans); cultural resources (except as noted below as significant); geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality (stormwater and 100-year flooding only); noise (exceeding standards – construction and operations only); traffic/circulation (safety and transit only); and utilities and service systems (stormwater and solid waste only).

Less-than-significant impacts were identified for the following resources in the 2011 Redevelopment Plan EIR: aesthetics (except as noted above as less than significant with SCAs); air quality (clean air plan consistency); hydrology and water quality (except as noted above as less than significant with SCAs); land use and planning; population and housing; noise (roadway noise only); public services and recreation; traffic/circulation (air traffic and emergency access); and utilities and service systems (except as noted above as less than significant with SCAs). No impacts were identified for agricultural or forestry resources, and mineral resources.

The 2011 Redevelopment Plan EIR determined that the Proposed Amendments combined with cumulative development would have significant unavoidable impacts on the following environmental resources: air quality (toxic air contaminant exposure and odors); cultural resources (historic); and traffic/circulation (roadway segment operations). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

Environmental Effects Summary – 2010 Housing Element and 2014 Addendum

The 2010 Housing Element Update EIR (including its Initial Study) and 2014 EIR Addendum determined that housing developed pursuant to the Housing Element, which would include the Project, would result in impacts that would be reduced to a less-than-significant level with the implementation of mitigation measures and/or SCAs: aesthetics (visual character/quality and light/glare only); air quality (except as noted below); biological resources; cultural resources; geology and soils; greenhouse gas emissions; hazards and hazardous materials (except as noted below, and no impacts regarding airport/airstrip hazards and emergency routes); hydrology and water quality (except as noted below); noise; public services (police and fire only); and utilities and service systems (except as noted below).

Less-than-significant impacts were identified for the following resources in the Housing Element EIR and Addendum: hazards and hazardous materials (emergency plans and risk via transport/disposal); hydrology and water quality (flooding/flood flows, and inundation by seiche, tsunami or mudflow); land use (except no impact regarding community division or conservation plans); population and housing (except no impact regarding growth inducement); public services and recreation (except as noted above, and no impact regarding new recreation facilities); and utilities and service systems (landfill, solid waste, and energy capacity only, and no impact regarding energy standards). No impacts were identified for agricultural or forestry resources, and mineral resources.

Significant unavoidable impacts were identified for the following environmental resources in the Housing Element EIR: air quality (toxic air contaminant exposure) and traffic delays. Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

Thus, the potential environmental effects of the Project were anticipated and analyzed in the prior EIRs.

New Specific Effects

The Project would not cause new specific effects that were not addressed in the LUTE EIR, the Housing Element EIR, or the Redevelopment Plan EIR. The analysis of the Project in the CEQA Exemption analysis includes all the resource topics identified as potentially incurring significant unavoidable impacts, and concludes that there would be no impacts that were not analyzed in prior EIRs.

Specifically, the analysis in the CEQA Exemption analysis included the resource topics that the Redevelopment Plan EIR and Housing Element EIR determined could have significant impacts:

- Air Quality
- Noise
- Transportation/Traffic
- Cultural Resources

In addition, the analysis of possible exceptions to the Class 32 exemption identified in Section 15300.2 provides an analysis of:

- Historic resources
- Hazardous materials
- Greenhouse gases
- Aesthetics (shadow and wind)

As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the LUTE EIR, Housing Element EIR, or Redevelopment Plan EIR, nor would it result in new significant impacts that were not identified in these prior EIRs. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR in 2011 or Housing Element Update EIR in 2015 that would result in any new specific significant effects of the Project.

Substantial New Information

There is no new information that was not known at the time the Redevelopment Plan EIR or the Housing Element Update EIR were certified that would cause more severe adverse impacts than discussed in the prior EIRs. There have been no significant changes in the underlying development assumptions, nor in the applicability or feasibility of mitigation measures or SCAs included in the prior EIRs.

Standard Conditions of Approval

SCAs incorporate policies and standards from various adopted plans, policies, and ordinances, which have been found to substantially mitigate environmental effects. 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, thus meeting the provision of Section 15183 (f), which states that impacts that are

addressed by uniformly applied development standards (in this case, City of Oakland SCAs) are not considered peculiar to the parcel for the purpose of requiring further environmental review. Therefore, the Project requires no additional environmental review under California Public Resources Code Section 21083.3 and Section 15183 of the CEQA Guidelines.

Qualified Infill Streamlining—Section 15183.3

Based on CEQA Guidelines Section 15183.3(d)(1), the Lead Agency must examine an eligible infill project in light of the prior EIR to determine whether the infill project will cause any effects that require additional review under CEQA. This evaluation shall:

A. Document whether the infill project satisfies the applicable performance standards in Appendix M.

B. Explain whether the effects of the infill project were analyzed in a prior EIR

C. Explain whether the infill project will cause new specific effects (defined as "an effect that was not addressed in the prior EIR and that is specific to the infill project or the infill project site").

D. Explain whether substantial new information shows that the adverse environmental effects of the infill project are more significant (defined as "substantially more severe") than described in the prior EIR.

If the infill project will cause new specific effects or more significant effects, the evaluation should indicate whether uniformly applicable development policies or standards will substantially mitigate those effects.

The following information demonstrates that the Project is eligible for streamlining pursuant to CEQA Guidelines Section 15183.3 as a qualified infill Project, and fulfills the review requirements of its provisions.

Appendix M Performance Standards

The following analysis demonstrates that the Project is located in an urban area on a site that has been previously developed; satisfies the performance standards provided in CEQA Guidelines Appendix M; and is consistent with the General Plan land use designation, density, building intensity and applicable policies. As such, this environmental review is limited to an assessment of whether the Project may cause any Project-specific effects, and relies on uniformly applicable development policies or standards to substantially mitigate cumulative effects.

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		**Eligible?/Notes for Proposed Project**
1.	Be located in an urban area on a site that either has been previously developed or that adjoins existing qualified urban uses on at least 75 percent of the site's perimeter. For the purpose of this subdivision, "adjoin" means the infill project is immediately adjacent to qualified urban uses, or is only separated from such uses by an improved right-of-way. (CEQA Guidelines Section 15183.3[b][1])	Yes. The project site has been previously developed as commercial building and surface parking, and adjoins existing urban uses on three sides, as described in the Project Description above.
2.	Satisfy the performance Standards provided in Appendix M (CEQA Guidelines Section 15183.3[b][2]) as presented in 2a and 2b below:	—
	2a. *Performance Standards Related to Project Design.* All projects must implement **all** of the following:	—
	Renewable Energy. *Non-Residential Projects.* All nonresidential projects shall include onsite renewable power generation, such as solar photovoltaic, solar thermal, and wind power generation, or clean back-up power supplies, where feasible. *Residential Projects.* Residential projects are also encouraged to include such onsite renewable power generation.	Not Applicable. According to Section IV (G) of CEQA Appendix M, for mixed-use projects "…the performance standards in this section that apply to the predominant use shall govern the entire project." Because the predominant use is residential, the Project is not required to include onsite renewable power generation.
	Soil and Water Remediation. If the project site is included on any list compiled pursuant to Section 65962.5 of the Government Code, the project shall document how it has remediated the site, if remediation is completed. Alternatively, the project shall implement the recommendations provided in a preliminary endangerment assessment or comparable document that identifies remediation appropriate for the site.	Not Applicable. The project site is not located on any list compiled pursuant to Section 65962.5 of the Government Code (the "Cortese List"). See the discussion under Criterion 15300.2(e) included in the CEQA Analysis for a more detailed discussion of Cortese List status and site remediation efforts.
	Residential Units Near High-Volume Roadways and Stationary Sources. If a project includes residential units located within 500 feet, or other distance determined to be appropriate by the local agency or air district based on local conditions, of a high volume roadway or other significant sources of air pollution, the project shall comply with any policies and standards identified in the local general plan, specific plan, zoning code, or community risk reduction plan for the protection of public health from such sources of air pollution.	Yes. For projects that include residential units, the BAAQMD recommends evaluating the cumulative health risks to the residents from mobile and stationary sources of TAC emissions within 1,000 feet of the Project. Based on a screening-level analysis, the project would not be required to implement additional health risk reduction measures under SCA-20, including the installation and maintenance of high efficiency filtration systems with a Minimum Efficiency Reporting Value rating of 13 (MERV-13). See the discussion under Criterion Section 15332(d), Air Quality, included in this CEQA Analysis.

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		**Eligible?/Notes for Proposed Project**
	If the local government has not adopted such plans or policies, the project shall include measures, such as enhanced air filtration and project design, that the lead agency finds, based on substantial evidence, will promote the protection of public health from sources of air pollution. Those measures may include, among others, the recommendations of the California Air Resources Board, air districts, and the California Air Pollution Control Officers Association.	
	2b. *Additional Performance Standards by Project Type.* In addition to implementing all the features described in criterion 2a above, the project must meet eligibility requirements provided below by project type.[a]	—
	Residential. A residential project must meet **<u>one</u>** of the following: A. *Projects achieving below average regional per capita vehicle miles traveled.* A residential project is eligible if it is located in a "low vehicle travel area" within the region; B. *Projects located within ½ mile of an Existing Major Transit Stop or High Quality Transit Corridor.* A residential project is eligible if it is located within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor; **<u>or</u>** C. *Low – Income Housing.* A residential or mixed-use project consisting of 300 or fewer residential units all of which are affordable to low income households is eligible if the developer of the development project provides sufficient legal commitments to the lead agency to ensure the continued availability and use of the housing units for lower income households, as defined in Section 50079.5 of the Health and Safety Code, for a period of at least 30 years, at monthly housing costs, as determined pursuant to Section 50053 of the Health and Safety Code.	Yes, satisfies A and B. Criterion A: the Project is in a low VMT area Criterion B: the project site is well-served by multiple transit providers. The project site is within 0.25-mile of the 19th Street BART station. Alameda-Contra Costa Transit (AC Transit) bus routes 6, 12, 18, 1R, 26, 33, 51A, 58L, 72, 72M, 72R, 651, 800, 802, 805, 840, 851, NL and the Broadway Shuttle all stop within 0.25 mile of the Project site.

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		Eligible?/Notes for Proposed Project
	Commercial/Retail. A commercial/retail project must meet **one** of the following: A. *Regional Location.* A commercial project with no single-building floor-plate greater than 50,000 square feet is eligible if it locates in a "low vehicle travel area"; **or** B. *Proximity to Households.* A project with no single-building floor-plate greater than 50,000 square feet located within ½ mile of 1,800 households is eligible.	Not Applicable. According to Section IV (G) of CEQA Appendix M, for mixed-use projects "…the performance standards in this Section that apply to the predominant use shall govern the entire project." Because the predominant use is residential, the requirements for commercial/retail projects do not apply.
	Office Building. An office building project must meeting **one** of the following: A. *Regional Location.* Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area; **or** B. *Proximity to a Major Transit Stop.* Office buildings, both commercial and public, within ½ mile of an existing major transit stop, or ¼ mile of an existing stop along a high quality transit corridor, are eligible.	Not applicable
	Schools. Elementary schools within 1 mile of 50 percent of the projected student population are eligible. Middle schools and high schools within 2 miles of 50 percent of the projected student population are eligible. Alternatively, any school within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor is eligible. Additionally, to be eligible, all schools shall provide parking and storage for bicycles and scooters, and shall comply with the requirements of Sections 17213, 17213.1, and 17213.2 of the California Education Code.	Not Applicable.
	Transit. Transit stations, as defined in Section 15183.3(e)(1), are eligible.	Not Applicable.
	Small Walkable Community Projects. Small walkable community projects, as defined in Section 15183.3, subdivision (e)(6), that implement the project features in 2a above are eligible.	Not Applicable.

PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		**Eligible?/Notes for Proposed Project**
3.	Be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a sustainable communities strategy or an alternative planning strategy, **except** as provided in CEQA Guidelines Sections 15183.3(b)(3)(A) or (b)(3)(B) below: (b)(3)(A). Only where an infill project is proposed within the boundaries of a metropolitan planning organization for which a sustainable communities strategy or an alternative planning strategy will be, but is not yet in effect, a residential infill project must have a density of at least 20 units per acre, and a retail or commercial infill project must have a floor area ratio of at least 0.75; **or** (b)(3)(B). Where an infill project is proposed outside of the boundaries of a metropolitan planning organization, the infill project must meet the definition of a "small walkable community project" in CEQA Guidelines Section 15183.3(f)(5). (CEQA Guidelines Section 15183.3[b][3])	Yes. The adopted Plan Bay Area (2013) serves as the sustainable communities strategy for the Bay Area, per Senate Bill 375. As defined by the Plan, Priority Development Areas (PDAs) are areas where new development will support the needs of residents and workers in a pedestrian-friendly environment served by transit. The Project is within the Downtown & Jack London Planned Priority Development Area. It is consistent with the general land use designation, density, building intensity, and applicable policies specified in the General Plan as described in further detail the CEQA Analysis under Criterion 15332(a) and summarized below. The General Plan land use designation for the site is Central Business District; this classification is intended to encourage, support, and enhance the downtown area as a high-density mixed-use urban center of regional importance, and a primary hub for business, communications, office, government, high technology, retail, entertainment, and transportation. The proposed mixed-use project would be consistent with this designation.

Consistent with CEQA Guidelines Section 15183.3(a), which allows streamlining for qualified infill Projects, this environmental document is limited to topics applicable to Project-level review where the effects of infill development have been addressed in other planning level decisions of the General Plan Land Use and Transportation Element (LUTE) and LUTE Environmental Impact Report (EIR) (1998), the Redevelopment Plan EIR (2011), the Housing Element EIRs (2007-1014 and Update 2015-2023), or by uniformly applicable development policies (Standard Conditions of Approval) which mitigate such impacts. As the analysis in the section above titled "Consistency with Community Plan" demonstrates, the Project would not substantially increase the severity of the significant impacts identified in the prior EIRs, nor would it result in new significant impacts that were not identified in the prior EIRs. Further, there have been no substantial changes in circumstances following certification of the Redevelopment Plan EIR or the Housing Element Update EIR that would result in any new specific effects. Therefore, this document fulfills the review requirements for the Project pursuant to Section 15183.3.

ATTACHMENT A:
CITY OF OAKLAND – STANDARD CONDITIONS OF APPROVAL

The City of Oakland's Uniformly Applied Development Standards adopted as Standard Conditions of Approval (Standard Conditions of Approval, or SCAs) were originally adopted by the City in 2008 (Ordinance No. 12899 C.M.S.) pursuant to Public Resources Code section 21083.3) and have been incrementally updated over time. The most recent update was adopted April 11, 2017. 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, Stormwater Water Management and Discharge Control Ordinance, Oakland Tree Protection Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Green Building Ordinance, historic/Landmark status, California Building Code, and Uniform Fire Code, among others), which have been found to substantially mitigate environmental effects.

These SCAs are incorporated into projects as conditions of approval, regardless of the determination of a project's environmental impacts. 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, avoid or substantially reduce a project's environmental effects.

In reviewing project applications, the City determines which SCAs apply based upon the zoning district, community plan, and the type of permits/approvals required for the project. Depending on the specific characteristics of the project type and/or project site, the City will determine which SCAs apply to a specific project. Because these SCAs are mandatory City requirements imposed on a city-wide basis, environmental analyses assume that these SCAs will be imposed and implemented by the project, and are not imposed as mitigation measures under CEQA.

All SCAs identified in the CEQA Analysis—which is consistent with the measures and conditions presented in the City of Oakland General Plan, Land Use and Transportation EIR (LUTE EIR, 1998)—are included herein. To the extent that any SCA identified in the CEQA Analysis was inadvertently omitted, it is automatically incorporated herein by reference.

- The first column identifies the SCA applicable to that topic in the CEQA Analysis.
- The second column identifies the monitoring schedule or timing applicable to the project.
- The third column names the party responsible for monitoring the required action for the project.

In addition to the SCAs identified and discussed in the CEQA Analysis, other SCAs that are applicable to the project are included herein.

The project sponsor is responsible for compliance with any recommendations in approved technical reports and with all SCAs set forth herein at its sole cost and expense, unless otherwise expressly provided in a specific SCA, and subject to the review and approval of the City of Oakland. Overall monitoring and compliance with the SCAs will be the responsibility of the Planning and Zoning Division. Prior to the issuance of a demolition, grading, and/or construction permit, the project sponsor shall pay

the applicable mitigation and monitoring fee to the City in accordance with the City's Master Fee Schedule.

Note that the SCAs included in this document are referred to using an abbreviation for the environmental topic area and are numbered sequentially for each topic area—i.e., **SCA AIR-1**, **SCA AIR-2**, etc. The SCA title and the SCA number that corresponds to the City's master SCA list are also provided—i.e., **SCA AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions) (#19)**.

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
Aesthetics, Shadow and Wind			
SCA AES-1: Graffiti Control. (#16) a. During construction and operation of the project, the project applicant shall incorporate best management practices reasonably related to the control of graffiti and/or the mitigation of the impacts of graffiti. Such best management practices may include, without limitation: i. Installation and maintenance of landscaping to discourage defacement of and/or protect likely graffiti-attracting surfaces. ii. Installation and maintenance of lighting to protect likely graffiti-attracting surfaces. iii. Use of paint with anti-graffiti coating. iv. Incorporation of architectural or design elements or features to discourage graffiti defacement in accordance with the principles of Crime Prevention Through Environmental Design (CPTED). v. Other practices approved by the City to deter, protect, or reduce the potential for graffiti defacement. b. The project applicant shall remove graffiti by appropriate means within seventy-two (72) hours. Appropriate means include: i. Removal through scrubbing, washing, sanding, and/or scraping (or similar method) without damaging the surface and without discharging wash water or cleaning detergents into the City storm drain system. ii. Covering with new paint to match the color of the surrounding surface. iii. Replacing with new surfacing (with City permits if required).	Ongoing	N/A	Bureau of Building
SCA AES-2: Landscape Plan. (#17) *a. Landscape Plan Required* The project applicant shall submit a final Landscape Plan for City review and approval that is consistent with the approved	Prior to approval of construction-related permit	Bureau of Planning	N/A

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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.			
b. Landscape Installation 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.	Prior to building permit final	Bureau of Planning	Bureau of Building
c. Landscape Maintenance 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.	Ongoing	N/A	Bureau of Building
SCA AES-3: Lighting. (#18) 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.	Prior to building permit final	N/A	Bureau of Building
Air Quality			
SCA AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions). (#19) The project applicant shall implement all of the following applicable air pollution 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	During construction	N/A	Bureau of Planning

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.			
d. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.			
e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).			
f. Limit vehicle speeds on unpaved roads to 15 miles per hour.			
g. 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 five 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.			
h. 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 five 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").			
i. 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.			
j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.			
k. 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.			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
l. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.			
m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.			
n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).			
o. 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.			
p. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.			
q. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.			
r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.			
s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.			
t. 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.			
u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.			
v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3:			

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Architectural Coatings). w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM. x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard. y. 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.			
Note: Screening analysis presented in Attachment B has demonstrated that the Project would be below the applicable risk thresholds. No further action is required under this SCA. **SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants). (#20)** *a. Health Risk Reduction Measures* The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. The project applicant shall choose <u>one</u> 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 California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents / occupants / users to air pollutants. 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 that 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 –	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
ii. 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: • Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required. • Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph). • Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible. • The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods. • Sensitive receptors shall be located on the upper floors of buildings, if feasible. • Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (Pinus nigra var. maritima), Cypress (X Cupressocyparis leylandii), Hybrid popular (Populus deltoids X trichocarpa), and Redwood (Sequoia sempervirens). • Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible. • Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible. • Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible: o Installing electrical hook-ups for diesel trucks at loading docks. o Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.			

Standard Conditions of Approval	Implementation/Monitoring		
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o Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels. o Prohibiting trucks from idling for more than two minutes. o Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.			
b. Maintenance of Health Risk Reduction Measures: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.	Ongoing	N/A	Bureau of Building
SCA AIR-3: Stationary Sources of Air Pollution (Toxic Air Contaminants). (#21) 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 <u>one</u> 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 - 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	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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			
SCA AIR-4: Asbestos in Structures (#23). 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.	Prior to approval of construction-related permit	Applicable regulatory agency with jurisdiction	Applicable regulatory agency with jurisdiction
Biological Resources			
SCA BIO-1: Tree Removal During Bird Breeding Season. (#26) To the extent feasible, removal of any tree and/or other vegetation suitable for nesting of birds shall not occur during the bird breeding season of February 1 to August 15 (or during December 15 to August 15 for trees located in or near marsh, wetland, or aquatic habitats). If tree removal must occur during the bird breeding season, all trees to be removed shall be surveyed by a qualified biologist to verify the presence or absence of nesting raptors or other birds. Pre-removal surveys shall be conducted within 15 days prior to the start of work and shall be submitted to the City for review and approval. If the survey indicates the potential presence of nesting raptors or other birds, the biologist shall determine an appropriately sized buffer around the nest in which no work will be allowed until the young have successfully fledged. The size of the nest buffer will be determined by the biologist in consultation with the California Department of Fish and Wildlife, and will be based to a large extent on the nesting species and its sensitivity to disturbance. In general, buffer sizes of 200 feet for raptors and 50 feet for other birds should suffice to prevent disturbance to birds nesting in the urban environment, but these buffers may be increased or decreased, as appropriate, depending on the bird species and the level of disturbance anticipated near the nest.	Prior to removal of trees	Bureau of Building.	Bureau of Building.

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
SCA BIO-2: Tree Permit. (#27) *a. Tree Permit Required* Pursuant to the City's Tree Protection Ordinance (OMC chapter 12.36), the project applicant shall obtain a tree permit and abide by the conditions of that permit.	Prior to approval of construction-related permit	Permit approval by Public Works Department, Tree Division; evidence of approval submitted to Bureau of Building	Bureau of Building
b. Tree Protection During Construction Adequate protection shall be provided during the construction period for any trees which are to remain standing, including the following, plus any recommendations of an arborist: i. Before the start of any clearing, excavation, construction, or other work on the site, every protected tree deemed to be potentially endangered by said site work shall be securely fenced off at a distance from the base of the tree to be determined by the project's consulting arborist. Such fences shall remain in place for duration of all such work. All trees to be removed shall be clearly marked. A scheme shall be established for the removal and disposal of logs, brush, earth and other debris which will avoid injury to any protected tree. ii. Where proposed development or other site work is to encroach upon the protected perimeter of any protected tree, special measures shall be incorporated to allow the roots to breathe and obtain water and nutrients. Any excavation, cutting, filing, or compaction of the existing ground surface within the protected perimeter shall be minimized. No change in existing ground level shall occur within a distance to be determined by the project's consulting arborist from the base of any protected tree at any time. No burning or use of equipment with an open flame shall occur near or within the protected perimeter of any protected tree. iii. No storage or dumping of oil, gas, chemicals, or other substances that may be harmful to trees shall occur within the distance to be determined by the project's consulting arborist from the base of any protected trees, or any other location on the site from which such substances might enter the protected perimeter. No heavy construction equipment or construction materials shall be operated or stored within a distance from the base of any protected trees to be determined by the project's consulting arborist. Wires, ropes,	During construction	Public Works Department, Tree Division	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
or other devices shall not be attached to any protected tree, except as needed for support of the tree. No sign, other than a tag showing the botanical classification, shall be attached to any protected tree. iv. Periodically during construction, the leaves of protected trees shall be thoroughly sprayed with water to prevent buildup of dust and other pollution that would inhibit leaf transpiration. v. If any damage to a protected tree should occur during or as a result of work on the site, the project applicant shall immediately notify the Public Works Department and the project's consulting arborist shall make a recommendation to the City Tree Reviewer as to whether the damaged tree can be preserved. If, in the professional opinion of the Tree Reviewer, such tree cannot be preserved in a healthy state, the Tree Reviewer shall require replacement of any tree removed with another tree or trees on the same site deemed adequate by the Tree Reviewer to compensate for the loss of the tree that is removed. vi. All debris created as a result of any tree removal work shall be removed by the project applicant from the property within two weeks of debris creation, and such debris shall be properly disposed of by the project applicant in accordance with all applicable laws, ordinances, and regulations.			
c. Tree Replacement Plantings Replacement plantings shall be required for tree removals for the purposes of erosion control, groundwater replenishment, visual screening, wildlife habitat, and preventing excessive loss of shade, in accordance with the following criteria: • No tree replacement shall be required for the removal of nonnative species, for the removal of trees which is required for the benefit of remaining trees, or where insufficient planting area exists for a mature tree of the species being considered. • Replacement tree species shall consist of Sequoia sempervirens (Coast Redwood), Quercus agrifolia (Coast Live Oak), Arbutus menziesii (Madrone), Aesculus californica (California Buckeye), Umbellularia californica (California Bay Laurel), or other tree species acceptable to the Tree Division. • Replacement trees shall be at least twenty-four (24) inch box size, unless a smaller size is recommended by the arborist, except that three fifteen (15) gallon size trees may be substituted for each twenty-four (24) inch box size tree where appropriate. • Minimum planting areas must be available on site as follows: o For *Sequoia sempervirens*, three hundred fifteen (315)	Prior to building permit final	Public Works Department, Tree Division	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
square feet per tree; o For other species listed, seven hundred (700) square feet per tree. • In the event that replacement trees are required but cannot be planted due to site constraints, an in lieu fee in accordance with the City's Master Fee Schedule may be substituted for required replacement plantings, with all such revenues applied toward tree planting in city parks, streets and medians. • The project applicant shall install the plantings and maintain the plantings until established. The Tree Reviewer of the Tree Division of the Public Works Department may require a landscape plan showing the replacement plantings and the method of irrigation. Any replacement plantings which fail to become established within one year of planting shall be replanted at the project applicant's expense.			
Cultural Resources			
SCA CULT-1: Archaeological and Paleontological Resources – Discovery During Construction. (#29) 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	During construction	N/A	Bureau of Building

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
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 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.			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
SCA-CUL-2: Archaeologically Sensitive Areas—Pre-Construction Measures. (#30) 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. 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.	Prior to approval of construction-related permit; during construction	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
SCA CULT-3: Human Remains – Discovery during Construction. (#31): 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.	During Construction	N/A	Bureau of Building
Geology and Soils			
SCA GEO-1: Construction-Related Permit(s). (#33) 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.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building
SCA GEO-2: Soils Report. (#34) The project applicant shall submit a soils report prepared by a registered geotechnical engineer for City review and approval. The soils report shall contain, at a minimum, field test results and observations regarding the nature, distribution and strength of existing soils, and recommendations for appropriate grading practices and project design. The project applicant shall implement the recommendations contained in the approved report during project design and construction.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building
Hazards and Hazardous Materials			
SCA HAZ-1: Hazardous Materials Related to Construction. (#39) 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,	During construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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 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.			
SCA-HAZ-2: Hazardous Building Materials and Site Contamination. (#40) a. *Hazardous Building Materials Assessment* 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 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.	Prior to Approval of demolition, grading, or building Permit	Bureau of Building	Bureau of Building
b. *Environmental Site Assessment Required* The Project applicant shall submit a Phase I Environmental Site Assessment report, and Phase II Environmental Site Assessment	Prior to approval of construction-related permit	Applicable regulatory agency with	Applicable regulatory agency with

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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.		jurisdiction	jurisdiction
c. Health and Safety Plan Required 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.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building
d. Best Management Practices (BMPs) Required for Contaminated Sites The project applicant shall ensure that Best Management Practices (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.	During construction	N/A	Bureau of Building
Hydrology and Water Quality			
SCA HYD-1: Erosion and Sedimentation Control Measures for Construction. (#44). The project applicant shall implement Best Management Practices (BMPs) to reduce erosion, sedimentation, and water quality impacts during construction to the maximum extent practicable. At a minimum, the project applicant shall provide filter materials deemed acceptable to the City at nearby catch basins to prevent any debris and dirt from flowing into the City's storm drain system and creeks.	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A
SCA HYD-2: NPDES C.3 Stormwater Requirements for Regulated	Prior to Approval	Bureau of	Bureau of

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
Projects. (#50) *a. Post-Construction Stormwater Management Plan Required* 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.	of Construction-Related Permit	Planning; Bureau of Building	Building
b. Maintenance Agreement Required 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 Quality Control 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.	Prior to Building Permit Final	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
Noise			
SCA NOI-1: Construction Days/Hours. (#58): 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.	During Construction	N/A	Bureau of Building
SCA NOI-2: Construction Noise. (#59): 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,	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
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.			
SCA NOI-3: Extreme Construction Noise. (#60) *a. Construction Noise Management Plan Required* 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;	Prior to Approval	Bureau of Building	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
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. Based on the potential noise impacts from construction equipment to nearby sensitive receptors, the following draft site-specific noise attenuation measures are additionally recommended for inclusion in the Construction Noise Management Plan: Temporary noise barriers will be placed between the proposed construction activities and nearby receptors. The noise barriers may be constructed from plywood and installed on top of a portable concrete K-Rail system to be able to move and/or adjust the wall location during construction activities. A sound blanket system hung on scaffolding, or other noise reduction materials that result in an equivalent or greater noise reduction than plywood, may also be used. Due to the proximity of the commercial and apartment buildings located at the northern and southern borders of project site, respectively, the use of Sound Transmission Class (STC) rated materials, or other materials that could similarly provide high levels of noise reduction above what plywood or sound blankets alone could provide, should be incorporated into the design of the noise barriers installed at these borders. An STC rating roughly equals the decibel reduction in noise volume that a wall, window, or door can provide. Therefore, using STC-rated materials could substantially increase the level of noise reduction provided by the barrier. The composition, location, height, and width of the barriers during different phases of construction will be determined by a qualified acoustical consultant and incorporated into the Construction Noise Management Plan for the project. 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. Noise control blankets will be utilized on the building structure as the building is erected to reduce noise emission from the site. The use of noise control blankets will particularly be targeted to cover the levels of the building that have line of sight with the windows of adjacent receptors; Construction equipment will be positioned as far away from noise-sensitive receptors as possible. The project site is surrounded by			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
hard surfaces, and therefore, for every doubling of the distance between a given receptor and construction equipment, noise will be reduced by approximately 6 dBA. *b. Public Notification Required* 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.			
SCA NOI-4: Construction Noise Complaints. (#62): 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.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building
SCA NOI-5: Exposure to Community Noise. (#63): 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.	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
b. 50 dBA: Administrative offices; group assembly activities. c. 55 dBA: Commercial activities. d. 65 dBA: Industrial activities.			
SCA NOI-6: Operational Noise. (#64). 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.	Ongoing	N/A	Bureau of Building
Transportation /Traffic			
SCA TRANS-1: Construction Activity in the Public Right-of-Way. (#68) *a. Obstruction Permit Required* 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 and sidewalks.	Prior to Approval of Construction Related Permit	Bureau of Building	Bureau of Building
b. Traffic Control Plan Required In the event of obstructions to vehicle or bicycle travel lanes, 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 detours, including detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes. The project applicant shall implement the approved Plan during construction.	Prior to Approval of Construction Related Permit	Public Works Department, Transportation Services Division	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
c. Repair City Streets 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.	Prior to Building Permit Final	N/A	Bureau of Building
SCA TRANS-2: Bicycle Parking. (#69). 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.	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building
Utilities and Service Systems			
SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling. (#74) 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.greenhalo systems.com or manually at the City's Green Building Resource Center. Current standards, FAQs, and forms are available on the City's website and in the Green Building Resource Center.	Prior to Approval of Construction-Related Permit	Public Works Department, Environmental Services Division	Public Works Department, Environmental Services Division
SCA UTIL-2: Underground Utilities. (#75) 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,	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	**Initial Approval**	**Monitoring/ Inspection**
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.			
SCA UTIL-3: Recycling Collection and Storage Space. (#76) 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 cubic feet of storage and collection space per residential unit is required, with a minimum of ten cubic feet. For nonresidential projects, at least two cubic feet of storage and collection space per 1,000 square feet of building floor area is required, with a minimum of ten cubic feet.	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building
SCA UTIL-4: Green Building Requirements. (#77) *a. Compliance with Green Building Requirements During Plan-Check* 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	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
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. All pre-requisites per the green building checklist approved during the review of the Planning and Zoning permit, or, if applicable, all the green building measures approved as part of the Unreasonable Hardship Exemption granted during the review of the Planning and Zoning permit. A minimum of 23 points (3 Community; 6 IAQ/Health; 6 Resources; 8 Water) as defined by the Green Building Ordinance for Residential New Construction. 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.			
b. Compliance with Green Building Requirements During Construction 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:	During Construction	N/A	Bureau of Building

	Implementation/Monitoring		
Standard Conditions of Approval	**When Required**	**Initial Approval**	**Monitoring/ Inspection**
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. 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. Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.			
c. Compliance with Green Building Requirements After Construction Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green and attain the minimum required certification/point level. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Bureau of Planning the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.	After Project Completion as Specified	Bureau of Planning	Bureau of Building
SCA UTIL-5: Sanitary Sewer System. (#79) 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.	Prior to Approval of Construction-Related Permit	Public Works Department, Department of Engineering and Construction	N/A
SCA UTIL-6: Storm Drain System. (#80) 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.	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building

Attachment B: Air Quality and GHG Emissions Assessment

1940 WEBSTER RESIDENTIAL DEVELOPMENT

AIR QUALITY AND GHG EMISSIONS ASSESSMENT OAKLAND, CALIFORNIA

September 22nd, 2017

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Project: 17-160

Summary – 1940 Webster Mixed Use Development Air Quality and GHG Emissions Assessment

This report addresses air quality and greenhouse gas (GHG) impacts associated with a proposed mixed-use development located at 1940 Webster Street in Oakland, CA. The project site is currently occupied by a two-story commercial building and surface parking lot. The project proposes to demolish the existing structure and construct a 8-level building. Thresholds of significance for air quality impacts are identified in this study and the project's impacts, in terms of these thresholds are evaluated. The City of Oakland's Uniformly Applied Development Standards, adopted as Standard Conditions of Approval (SCAs), are applied to the project. SCA #19 would require "Basic Controls" during construction. Since the project involves demolition, "Enhanced Control Measures" are required during construction. Application of SCA 19 would ensure that air quality impacts, including localized impacts from construction exhaust and dust, are less than significant. Emission from construction and operation of the project were computed using the California Emissions Estimator Model (CalEEMod, and found to be below the significance thresholds. The project would include a Stationary Source of air pollution, in the form of an emergency diesel generator. The effects of this generator were evaluated with respect to SCA 21 and found to require specific site design and equipment selections measures, possibly combined with operation limitations. Finally, greenhouse gas emissions were modeled using CalEEMod in accordance with SCA 38. Since the project would not have GHG emissions that exceed the threshold in SCA 38 (part a or b) and the emissions from the generator would not exceed emissions in SCA 38 (part C), a GHG Reduction Plan is not required and the project would have less than significant impacts with respect to GHG emissions.

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) impacts associated with the proposed mixed-use development located at 1940 Webster Street in Oakland, CA. The site is currently developed with one 2-story commercial building, which includes a ground floor bank and 2nd floor chiropractic services, and an asphalt surface parking lot. The 1940 Webster Street Project proposes an approximately 149,970-square foot building, with recreation spaces on the ground floor and roof level, and a planted roof terrace for shared tenant use. The Project includes 173 new housing units on seven residential floors above the ground floor, with a commercial space of 1,786 square feet (sf), fronting Webster. A partially below-ground parking level will provide 131 parking spaces using 3-level mechanical parking stackers. The proposed building height is 84'-11" to the roof. The project plans include an emergency generator powered by a diesel engine.

Air pollutant and GHG emissions associated with construction and operation of the project were modeled. In addition, the potential health risk impacts from existing toxic air contaminant (TAC) sources affecting the proposed project residences were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD) and addresses the City of Oakland Standard Conditions of Approval for air quality and GHG.

Setting

The project site is located in Alameda County which is a part of San Francisco Bay Area Air Basin, Air quality in the region is affected by natural factors such as proximity to the Bay and ocean, topography, and meteorology, as well as proximity to sources of air pollution. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM10), and fine particulate matter ($PM_{2.5}$).

Air Pollutants and TACs

Particulate Matter

Particulate matter (PM) is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as "respirable particulate matter" or "PM10." Fine particles are 2.5 microns or less in diameter (PM2.5) and, while also respirable, can contribute significantly to regional haze and reduction of visibility. Inhalable particulates come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most particulate matter found in the vicinity of the project site is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most PM2.5 is comprised of combustion products such as smoke. Extended exposure to PM can increase the risk of chronic respiratory disease (BAAQMD 2011a)[1, 2]. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer or serious illness) and include, but are not limited to criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, state, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to that for criteria air pollutants that have established ambient air quality standards. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an ambient air quality standard or emission-based threshold.

Diesel exhaust is the predominant cancer-causing TAC in California. CARB estimates that about

[1] BAAQMD 2016. Planning Healthy Places. May Accessed at http://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf?la=en on August 24, 2016
[2] BAAQMD 2011. CEQA Air Quality Guidelines. May.

70% of total known cancer risk related to air toxics in California is attributable to DPM[3]. According to CARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the state's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles[4]. In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the Federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

CARB has also adopted and implemented regulations to reduce DPM and NOx emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and nitrogen oxides (NOx) exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent Federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NOx.

Sensitive Receptors

"Sensitive receptors" are defined as facilities where sensitive population groups, such as children, the elderly, the acutely ill, and the chronically ill, are likely to be located. These land uses include

[3] CAEB. *Summary: Diesel Particulate Matter Health Impacts*. https://www.arb.ca.gov/research/diesel/diesel-health_summ.htm

[4] California Air Resources Board. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000.

residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The project would include sensitive receptors in the form of new residences. The closest off-site sensitive receptors are apartments over 400 feet from the site. For the purposes of a thorough health risk assessment, residents of the project site assume all sensitive receptor types: 3rd-trimeter fetus, infant, child, and adult.

Greenhouse Gases

Gases that trap heat in the atmosphere, GHGs, regulate the earth's temperature. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide (CO_2) and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO_2 and N_2O are byproducts of fossil fuel combustion.
- N_2O is associated with agricultural operations such as fertilization of crops.
- CH_4 is commonly created by off-gassing from agricultural practices (e.g., keeping livestock) and landfill operations.
- Chlorofluorocarbons (CFCs) were widely used as refrigerants, propellants, and cleaning solvents but their production has been stopped by international treaty.
- HFCs are now used as a substitute for CFCs in refrigeration and cooling.
- PFCs and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with CO_2 being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of CO_2 equivalents (CO_2e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion, and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes and drought; and increased levels of air pollution.

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA. These Thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and were posted on BAAQMD's website and included in the Air District's updated CEQA Guidelines (updated May 2011). The significance thresholds identified by BAAQMD and used in this analysis are summarized in Table 1.

The BAAQMD's adoption of significance thresholds contained in the 2011 CEQA Air Quality Guidelines was called into question by an order issued March 5, 2012, in California Building Industry Association (CBIA) v. BAAQMD (Alameda Superior Court Case No. RGI0548693). The order requires the BAAQMD to set aside its approval of the thresholds until it has conducted environmental review under CEQA. The ruling made in the case concerned the environmental impacts of adopting the thresholds and how the thresholds would indirectly affect land use development patterns. In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds (Cal. Court of Appeal, First Appellate District, Case Nos. A135335 & A136212). CBIA sought review by the California Supreme Court on three issues, including the appellate court's decision to uphold the BAAQMD's adoption of the thresholds, and the Court granted review on just one: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the Supreme Court determined that an analysis of the impacts of the environment on a project – known as "CEQA-in-reverse" – is only required under two limited circumstances: (1) when a statute provides an express legislative directive to consider such impacts; and (2) when a proposed project risks exacerbating environmental hazards or conditions that already exist (Cal. Supreme Court Case No. S213478). The Supreme Court reversed the Court of Appeal's decision and remanded the matter back to the appellate court to reconsider the case in light of the Supreme Court's ruling. Because the Supreme Court's holding concerns the effects of the environment on a project (as contrasted to the effects of a proposed project on the environment), and not the science behind the thresholds, the significance thresholds contained in the 2011 CEQA Air Quality Guidelines are applied to this project. BAAQMD made minor updates to the 2011 CEQA Air Quality Guidelines in May 2017 in response to these final court rulings.

The City's thresholds of significance pertaining to greenhouse gas/global climate change are generally based on the thresholds adopted by BAAQMD in June 2010. Pursuant to CEQA, lead agencies must apply appropriate thresholds based on substantial evidence in the record. The City's thresholds rely upon the technical and scientific basis for BAAQMD's 2010 thresholds. Use of the City's thresholds is consistent with and authorized by CEQA Guidelines section 15064. The City's thresholds have not been challenged and remain in effect.

Table 1. Air Quality Significance Thresholds

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Annual Average Emissions (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (Exhaust)	82	15
$PM_{2.5}$	54 (Exhaust)	54	10
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards	**Single Sources Within 1,000-foot Zone of Influence**	**Combined Sources (Cumulative from all sources within 1,000 foot zone of influence)**	
Excess Cancer Risk	>10 per one million	>100 per one million	
Hazard Index	>1.0	>10.0	
Incremental annual $PM_{2.5}$	>0.3 µg/m^3	>0.8 µg/m^3	
Greenhouse Gas Emissions	**Operational Threshold**		
GHG Annual Emissions	Compliance with a Qualified GHG Reduction Strategy OR 1,100 metric tons or 4.6 metric tons per capita		

Note: ROG = reactive organic gases, NOx = nitrogen oxides, PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less; and GHG = greenhouse gas.

City of Oakland- Standard Conditions of Approval for Air Quality

The City of Oakland's Uniformly Applied Development Standards, adopted as Standard Conditions of Approval (SCAs), were originally adopted by the City in 2008 (Ordinance No. 12899 C.M.S. pursuant to Public Resources Code section 21083.3) and have been incrementally updated over time. The SCAs incorporate development policies and standards from various adopted plans, policies, and ordinances, which have been found to substantially mitigate environmental effects. SCAs that apply to this project are as follows:

SCA 19: Construction-Related Air Pollution (Dust and Equipment Emissions)

The Project applicant shall implement all of the following applicable air pollution control measures during construction of the Project:

BASIC CONTROLS

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. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.

e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

f. Limit vehicle speeds on unpaved roads to 15 miles per hour.

g. 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 five 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.

h. 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 five 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").

i. 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.

j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.

ENHANCED CONTROL MEASURES

Since the project involves demolition, implementation of Enhanced Controls would also be necessary. These controls include:

k. 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.

l. All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

o. 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.

p. Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.

q. Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

r. Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.

s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.

t. 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.

u. All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.

v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.

y. 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.

<u>SCA 21: Stationary Sources of Air Pollution (Toxic Air Contaminants)</u>

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 would include a diesel engine to power an emergency generator that SCA 21 would apply.

SCA 38: Greenhouse Gas (GHG) Reduction Plan

The following condition, which requires a GHG Reduction Plan, applies under any of the following scenarios for projects that result in a net increase in greenhouse gas (GHG) emissions:

a. Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District [BAAQMD] to operate), (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, and (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO2e annually and more than 4.6 metric tons of CO2e per service population annually (with "service population" defined as the total number of employees and residents of the project).
b. Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines, (c) after a GHG analysis is prepared would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO2e annually OR more than 4.6 metric tons of CO2e per service population annually), and (d) are considered to be "Very Large Projects."
c. Scenario C: Projects which (a) involve a stationary source of GHG (i.e., a project that requires a permit from BAAQMD to operate) and (b) after a GHG analysis is prepared would produce total GHG emissions of more than 10,000 metric tons of CO2e annually.

Applicable SCAs to the project are contained in *Attachment 1*.

Impact Analysis

> **Impact:** Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable State or federal ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? ***Less than significant***

The Bay Area is considered a non-attainment area for ground-level ozone and $PM_{2.5}$ under both the Federal Clean Air Act and the California Clean Air Act. The area is also considered non-attainment for PM_{10} under the California Clean Air Act, but not the federal act. The area has attained both State and federal ambient air quality standards for carbon monoxide. As part of an effort to attain and maintain ambient air quality standards for ozone and PM_{10}, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NOx), PM_{10}, and $PM_{2.5}$ and apply to both construction period and operational period impacts.

The California Emissions Estimator Model (CalEEMod) Version 2016.3.1 was used to estimate emissions from construction and operation of the site assuming full build-out of the project. The project land use types and size, and anticipated construction schedule were input to CalEEMod.

Construction period emissions

CalEEMod provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. A construction build-out scenario was used in the modeling that was based on the CalEEMod model defaults for the project. The proposed project land uses were input into CalEEMod, which included: 173 dwelling units entered as "Apartment Mid Rise" with 148,184 square feet (sf), 1,800 sf entered as "High Turnover (Sit Down Restaurant)," and 131spaces entered as "Enclosed Parking with Elevator." The model default site area of 4.55 acres was used to set the construction schedule and equipment usage assumptions, although the project would be 0.59 acres.

Approximately 10,532 cubic yards (cy) of soil export is anticipated during grading and was entered into the model. Demolition of 21,718 sf of buildings is anticipated and was entered into the model. An estimated 5,400 cy of concrete would be required, which was estimated at 540 cement truck round-trips, are expected during the building construction and were entered into the model.

The project construction schedule assumes that the project would be built out over a period of approximately 24 to 28 months beginning in August 2018. The CalEEMod construction generated schedule estimated 15 months, but probably does not represent the extensive interior work that would be required. The CalEEMod estimate of 15 months or 319 construction workdays was used to compute average daily emissions (total emissions were computed by dividing the total construction emissions by the number of construction days. Table 2 shows average daily construction emissions of ROG, NO_X, PM_{10} exhaust, and $PM_{2.5}$ exhaust during construction of the project. As indicated in Table 2, predicted the construction period emissions would not exceed the BAAQMD significance thresholds. The CalEEMod modeling that includes the construction emissions is included as *Attachment 2*.

Table 2. Uncontrolled Construction Period Emissions

Scenario	ROG	NOx	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
Total construction emissions (tons)	1.54 tons	3.97 tons	0.20 tons	0.19 tons
Average daily emissions (pounds)[1]	9.7 lbs.	24.9 lbs.	1.3 lbs.	1.2 lbs.
BAAQMD Thresholds (pounds per day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**
Notes: [1]Assumes 319 workdays.				

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines and City consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. *City Standard Conditional of Approval (SCA) 19* would ensure that these impacts are less than significant.

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future occupants and restaurant customers. Evaporative emissions from architectural coatings and maintenance products (classified as consumer products) are typical emissions from these types of uses. CalEEMod was used to predict emissions from operation of the proposed project assuming full build-out.

Land Uses

The project land uses were input to CalEEMod, as described above. An additional CalEEMod run was set up to compute the emissions from the existing land use. The land use entered was 6,000 sf as "General Office Building".

Model Year

Emissions associated with vehicle travel depend on the year of analysis because emission control technology requirements are phased-in over time. Therefore, the earlier the year analyzed in the model, the higher the emission rates utilized by CalEEMod. The earliest full year the build-out project could possibly be constructed and begin operating would be 2021. Emissions associated with build-out later than 2021 would be lower.

Trip Generation Rates

CalEEMod default rip rates, trip types and trip lengths were used in the emissions modeling. CalEEMod predicted 1,693 new project trips compared to the traffic study with 1,370 daily trips after accounting for the Oakland urban environment and proximity to the BART station. Mobile emissions produced by CalEEMod were adjusted downward to account for this difference (a 19-percent reduction).

Energy

CalEEMod defaults for energy use were used, which are assumed to include 2013 Title 24 Building Standards.

Other Inputs

Default model assumptions for emissions associated with solid waste generation and water/wastewater use were applied to the project.

Project Generator

The only source of stationary air pollutants identified with build-out of the project is assumed to be an emergency back-up generator. The project proposes the inclusion of a 230 kilowatt (kw) generator that would be driven by a diesel-fueled engine. The emergency back-up generator would be used for backup power in emergency conditions. The generator would be operated for testing and

maintenance purposes, with a maximum of 50 hours each per year of non-emergency operation under normal conditions allowed by BAAQMD. During testing periods, the engine would typically be run for less than one hour. The engine would be required to meet CARB and U.S. EPA emission standards and consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

Total Project Emissions

Table 3 reports the predicted emission in terms of annual emissions in tons and average daily operational emissions, assuming 365 days of operation per year. As shown in Table 3, average daily and annual emissions of ROG, NOx, PM_{10}, or $PM_{2.5}$ emissions associated with operation would not exceed the BAAQMD significance thresholds.

Table 3. Operational Emissions

Scenario	ROG	NOx	PM_{10}	$PM_{2.5}$
Project Annual Operational Emissions	0.98 tons	1.58 tons	0.65 tons	0.19 tons
Existing Emissions	0.21 tons	0.76 tons	0.32 tons	0.09 tons
Net Project Emissions	0.77 tons	0.82 tons	0.33 tons	0.10 tons
BAAQMD Thresholds (tons /year)	*10 tons*	*10 tons*	*15 tons*	*10 tons*
Exceed Threshold?	***No***	***No***	**No**	**No**
Average Daily Net Project Operational Emissions (pounds)[1]	4.2 lbs.	4.5 lbs.	1.8 lbs.	0.5 lbs.
BAAQMD Thresholds (pounds/day)	*54* lbs.	*54* lbs.	*82* lbs.	*54* lbs.
Exceed Threshold?	**No**	**No**	**No**	**No**

[1] Assumes 365-day operation.

Impact: Violate any air quality standard or contribute substantially to an existing or projected air quality violation? ***Less-than-significant with implementation of SCA-19.***

As discussed above, the project would have emissions less than the significance thresholds adopted by BAAQMD for evaluating impacts related to ozone and particulate matter. Therefore, the project would not contribute substantially to existing or projected violations of those standards. Carbon monoxide emissions from traffic generated by the project would be the pollutant of greatest concern at the local level. Congested intersections with a large volume of traffic have the greatest potential to cause high-localized concentrations of carbon monoxide. Air pollutant monitoring data indicate that carbon monoxide levels have been at healthy levels (i.e., below State and federal standards) in the Bay Area since the early 1990s. As a result, the region has been designated as attainment for the carbon monoxide standard. The highest measured level over any 8-hour averaging period in the Bay Area during the last 3 years is less than 3.0 ppm, compared to the ambient air quality standard of 9.0 ppm. The project would generate a relatively small amount of new traffic. Based on the Traffic Impact Study, the project would add approximately 1,693 daily trips and would not affect high-volume intersections that have the potential to result in exceedances of an ambient air quality

standard for carbon monoxide5. BAAQMD screening guidance indicates that the project would have a less than significant impact with respect to carbon monoxide levels if project traffic projections indicate traffic levels would not increase at any affected intersection to more than 44,000 vehicles per hour.[6] Because cumulative traffic volumes at all intersections affected by the project would have less than 44,000 vehicles per hour, the project will have a *less-than significant* effect with respect to carbon monoxide.

> **Impact:** Expose sensitive receptors to substantial pollutant concentrations? ***Less than significant with implementation of SCA-19 and 21.***

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity. The BAAQMD recommends using a 1,000-foot screening radius around a project site for purposes of identifying community health risk from siting a new sensitive receptor or a new source of TACs. It is anticipated that the project would include an emergency back-up generator that is powered by diesel fuel. This generator would only be operated for testing and emergency purposes. Construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors.

The City uses the BAAQMD California Environmental Quality Act (CEQA) Air Quality Guidelines to consider exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard, to be significant. For cancer risk, which is a concern with diesel particulate matter (DPM) and other mobile-source TACs, the BAAQMD considers an increased risk of contracting cancer that is 10.0 in one million chances or greater, to be significant risk for a single source. The BAAQMD CEQA Guidelines also consider single-source TAC exposure to be significant if annual fine particulate matter ($PM_{2.5}$) concentrations exceed 0.3 micrograms per cubic meter ($\mu g/m^3$) or if the computed hazard index (HI) is greater than 1.0 for non-cancer risk hazards. Cumulative exposure is assessed by combining the risks and annual $PM_{2.5}$ concentrations for all sources within 1,000 feet of a project. The thresholds for cumulative exposure are an excess cancer risk of 100 in one million, annual $PM_{2.5}$ concentrations of 0.8 $\mu g/m^3$, and a hazard index greater than 10.0. These thresholds were used to address impacts from TAC sources that could affect future project residents. The methodology for computing cancer risk, annual $PM_{2.5}$ concentrations, and non-cancer hazards is contained in *Attachment 2*. Note that this methodology describes new guidance to computed cancer risk that was recently finalized by the State Office of Environmental Heal Hazards Assessment (OEHHA) and provides greater protections for infants and children.

<u>Sources Affecting Project Residences</u>

A review of the project site has identified several sources including roadways and stationary sources that are within 1,000 feet of the site and could, therefore, adversely affect the site (see Figure 1). Contributing sources within the influence area include:

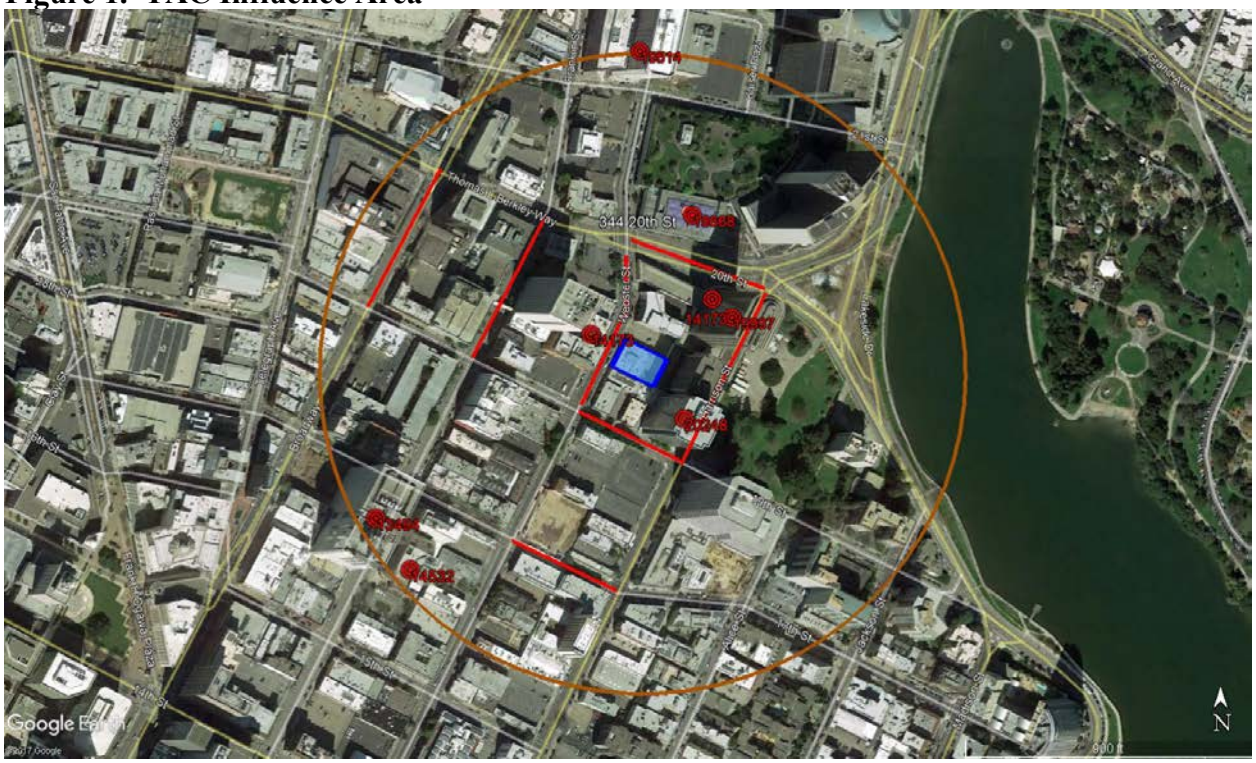
5 Fehr & Peers 1940 Webster Trip Generation Table (see Attachment 1).

6 For a land-use project type, the BAAQMD CEQA Air Quality Guidelines state that a proposed project would result in a less than significant impact to localized carbon monoxide concentrations if the project would not increase traffic at affected intersections to more than 44,000 vehicles per hour.

1. Local Roadways: These include, Webster St, Harrison St, Franklin St 17th St, 19th St, Broadway, and Thomas Berkeley Way/20th St

2. Stationary Sources: A total of fourteen (14) identified stationary sources listed and permitted by the Bay Area Air Quality Management District (BAAQMD).

Figure 1. TAC Influence Area



*Note that stationary source locations are based on BAAQMD data and not accurately depicted. The locations used in this analysis were determined based on the address of the source and review of aerial maps.

Local Roadways

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways may have a potentially significant effect on a proposed project. Two adjustments were made to the cancer risk predictions made by this calculator: (1) adjustment for latest vehicle emissions rates predicted using EMFAC2014 and (2) adjustment of cancer risk reflecting new OEHHA guidance (see *Attachment 3*).

Table 4 Summary of TAC Impacts from Sources within 1,000 feet on Project

Source*	Distance (feet)	Cancer Risk** (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Acute or Chronic Hazard Index	Analysis Method
Project Emergency Generator	On-site	2.80 to **67.16**	0.01 to 0.09	0.02	Refined modeling using project data and meteorological data with building downwash
Webster Street	25 ft	3.78	0.11	0.00	Refined screening using updated traffic data
Harrison St.	190 ft	1.21	0.03		
Franklin	380 ft	0.84	0.02		
Broadway	750 ft	1.00	0.03		
Thomas L Berkley/20th	270 ft	0.78	0.02		
19th	140 ft	1.00	0.03		
17th	620 ft	0.39	0.01		
Plant 14711 - Verizon Business 1999 Harrison	140 ft	3.18	0.00	0.00	BAAQMD SSIF and beta Calculator
Plant 19997 - Oakland Property, LLC	140 ft	2.48	0.00		
Plant 14173 - Pacific Gas and Electric 1919 Webster	250 ft (roof)	1.70	0.00		
Plant 14532 – AC Transit General Office 1600 Franklin	870 ft	3.88	0.01		
Plant 13496 – Pacific Bell Generator 1587 Franklin	900 ft	3.38	0.00		
Plant 18668 – AT&T Corp Generator 1587 Franklin	900 ft	3.38	0.00		
Plant 20248 - CIM Group Properties 344 20th St	400 ft	2.80	0.00	0.00	Refined modeling using BAAQMD emissions and meteorological data
Single Source Threshold		*10.0*	*0.3*	*1.0*	
Combined Sources		32.60 to 96.96	0.27 to 0.35	**<0.1**	
Combined Source Threshold		*100*	*0.8*	*10.0*	
Exceeds any threshold?		***Yes*** Single source	*No*	*No*	

* Plants, 18179,G9132, G11348 were reported as closed by BAAQMD. Plant 10397, a dry cleaning, no longer is considered a source of TACs due to phase out of dry cleaning chemicals. Plant 16802 has no risk or PM2.5 associated with the facility.

**Cancer risk predictions include the application of 2015 OEHHA guidance and assume infant exposure by multiplying the BAAQMD reported risk by 1.3744.

The calculator uses the older EMFAC2011 emission rates for the year 2014. Overall, emission rates have decreased and will decrease further by the time the project is occupied. For this analysis, the project is not considered occupied prior to 2018. In addition, a new version of the State's emissions factor model, EMFAC2014, is available. This version predicts lower emission rates. An adjustment factor of 0.5 was developed by comparing emission rates of total organic gases (TOG)

and DPM for running exhaust and running losses developed using EMFAC2011 for year 2014 and those from EMFAC2014 for year 2018.

The predicted cancer risk was then adjusted upward using a factor of 1.3744 to account for new OEHHA guidance (see *Attachment 3*). This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.[7]

The busier roadways, like Webster and Thomas Berkeley Way/20th St are within 1000 feet of the project site. The calculator requires inputs of the County, roadway direction, side of the roadway the receptor is located, the average daily traffic (ADT) volume, and the distance between the roadway and receptors.

The roadway calculator was used for Alameda County with North-South and East-West roads. Data sources for traffic volumes included the 19th Street and Harrison Street Project CEQA Analysis, 2044 Franklin project and Broadway / Valdez District Specific Plan and traffic counts published by Kittleson and Associates[8]. Where only peak-hour traffic data were available, the average daily traffic (ADT) volume was computed by multiplying the peak-hour volume by ten. The distance between the roadway edge and the project were approximated using Google Earth. Results of this screening assessment are included in Table 4. Traffic volumes and an example output from the Roadway Risk Calculator are provided in *Attachment 4*.

BAAQMD-Permitted Stationary Sources

BAAQMD's *Stationary Source Screening Analysis Tool* was used to identify stationary sources that may affect future residential development at the site. This is a Google Earth map tool used to identify BAAQMD permitted stationary sources. A few of these sources were wrongly placed by the tool. The address reported by the tool's linked database was used to identify the actual location of the sources. Figure 1 shows the locations of all the stationary sources within 1000 feet of the project site. The linked database also includes the associated estimated cancer risk and hazard impacts predicted by BAAQMD. A *beta calculator* is provided by BAAQMD to adjust the risks based on the source emissions and distance between the source and the receptor. A total of fourteen sources were identified.

One of these sources, Plants #16802 and 10397 did not pose any risks or elevated PM2.5 concentrations. Plants #G11348, G9132 and 18179 were identified as closed by BAAQMD. There were 6 sources that were evaluated using the screening data published on BAAQMD's Stationary Source Tool. Source-specific emission information was obtained from BAAQMD for sources that had screening risk exceeding the single-source threshold levels. The emissions data was entered into the BAAQMD's *beta calculator*, which is considered a second tier screening evaluation. The risks computed by the beta calculator were found to be less than the single-source thresholds except for Plant #20248. Therefore, refined modeling for Plant #20248 was performed. *Attachment 5* provides the stationary source refined modeling data.

[7] Correspondence with Alison Kirk, BAAQMD, January 23, 2017.
8 See http://maps.kittelson.com/OaklandCounts, accessed Feb 7, 2017.

Sources Assessed Using Screening Tools

1. Plant 14711, is an emergency back-up generator operated by Verizon Business and located at 1999 Harrison Street. This facility is about 140 feet southeast of the project site.

2. Plant 19997, operated by Oakland Property LLC and located at 1999 Harrison Street which is about 140 feet southeast of the project site. This facility operates one emergency standby diesel fire pump and one emergency standby diesel generator set. Emission information for the generator of was obtained from BAAQMD. The BAAQMD Beta Calculation 1.3 was used to compute risks and $PM_{2.5}$ concentration. Having adjusted for an approximate distance of 140 feet, the cancer risk was found to be 2.5 in a million, approximately zero HI and less than 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration.

3. Plant 14173 is an emergency generator operated by Pacific Gas and Electric and located at 1919 Webster Street. This facility is about 250 feet away on a rooftop. Risk and $PM_{2.5}$ concentrations associated with this facility were identified using the BAAQMD *Stationary Source Screening Analysis Tool* and adjusted using the BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine*. Having adjusted for an approximate distance of 250 feet, the cancer risk was found to be 1.70 in a million, an HI of less than 0.01 and less than 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration.

4. Plant 14532, operated by the AC Transit General Office and located at 1600 Franklin is about 870 feet away. Using the BAAQMD screening risk and adjusting for the distance, the cancer risk was found to be 3.88 in a million, an HI of less than 0.01 and less than 0.01 µg/m3 PM2.5 concentration.

5. Plant 13494 is an emergency generator operated by Pacific Bell/AT&T and located at 1587 Franklin Street. This facility is about 900 feet away. Risk and $PM_{2.5}$ concentrations associated with this facility were identified using the BAAQMD *Stationary Source Screening Analysis Tool* and adjusted using the BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine*. Having adjusted for an approximate distance of 900 feet, the cancer risk was found to be 3.38 in a million, an HI of less than 0.01 and less than 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration.

6. Plant 19514, operated by General Services Administration-East Bay and located at 2101 Webster Street is just over 1,000 feet away. This facility operates two diesel powered emergency standby generators and three fire tube boilers. Based on the BAAQMD screening data and adjusting for the distance, the cancer risk was found to be less than 3.01 in a million, an HI of less than 0.01 and less than 0.01 µg/m3 PM2.5 concentration.

7. Plant 18668, operated by AT&T Corp and located at 344 20th Street is about 400 feet southeast of the nearest project receptor. This facility operates one emergency standby diesel generator. Emission information for these sources of TAC emissions was obtained from BAAQMD. The BAAQMD Beta Calculation 1.3 was used to compute risks and $PM_{2.5}$ concentration. Having adjusted for an approximate distance of 230 feet, the cancer risk was found to be 1.38 in a million, approximately zero HI and less than 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration.

8. Plant 14195, is an emergency back-up generator operated by the State of California, Department of Transportation and located at 111 Grand Avenue. This facility is about 500

feet northwest of the project site. Risk and $PM_{2.5}$ concentrations from this diesel generator were identified using the BAAQMD *Stationary Source Screening Analysis Tool* and adjusted based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines*. Having adjusted for an approximate distance of 500 feet, the cancer risk was found to be 9.1 in a million, less than 0.01 HI and 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration.

Refined Assessment of Plant 20248

Modeling of the CIM Group Properties, back-up generators (Plant 20248) was conducted to assess cancer risks and annual $PM_{2.5}$ concentrations at the location of the maximally exposed individual or MEI. Based on the BAAQMD emission inventory data the daily $PM_{2.5}$ and DPM emissions from this generator are 0.0193 pounds per day (7.05 pounds per year). To obtain an estimate of potential excess cancer risks to future project residents from this source, the AERMOD dispersion model was used. This modeling included the use of five years (2009-2013) meteorological data from the Metro Oakland Airport that was prepared for use with the AERMOD model by the CARB. The model computed DPM concentrations at locations of future residential units. The emergency generator was modeled as a single stack at six feet above the roof of the first floor terrace area above the south garage entrance of the building on 19th Street. The location where the generator stack was modeled in shown in Figure 2. Potential impacts at the project on-site sensitive receptors were evaluated. On-site receptors on the second through sixth floor were placed in the residential areas every 5.5 meters (18 feet). Default BAAQMD stack parameters for generator screening (6 feet high stack, 3 inch diameter, 164 feet/sec exit velocity, and exit temperature of 656 degrees F) were used for the generators. It was assumed that the generator could be operated for testing and maintenance purposes at any hour of the day.

The maximum modeled annual average DPM concentrations occurred at fifth floor level of the project residences and was found to be 0.0029 μg/m3. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 2.1 in a million. Details of the modeling and risk calculations are included in *Attachment 5*.

<u>On-Site Project Generator</u>

As previously described one emergency back-up generator driven by diesel-fueled engine would be associated with the project. The generator will be operated for testing and maintenance purposes, with a maximum of 50 hours per year of non-emergency operation under normal conditions. During testing periods, the engine would typically be run for less than one hour under light engine loads. The engine would be required to meet U.S. EPA emission standards and consume commercially available California low sulfur diesel fuel. The project generator is subject to the City's SCA 21.

The project proposes an emergency back-up diesel generator located in the southwest corner of the below-ground garage, adjacent to Webster Street. The proposed generator was assumed to be a Cummins 230 kW emergency generator. Operation of the generator is limited to 50 hours per year of non-emergency use (i.e. testing and maintenance) by the State's Air Toxic Control Measure for Stationary Compression Ignition Engines. Actual hours of operation of the generator for non-emergency operation for testing and maintenance purposes are typically less than 50 hours per year.

However, for purposes of estimating emissions and potential air quality impacts from the generator engine, it was the engine could be operated for 50 hours per year (maximum operation hours allowed by the State's Air Toxic Control Measure and BAAQMD for testing and maintenance) at near full load. It was assumed that the generator could be operated for testing and maintenance purposes at any hour of the day.

To obtain an estimate of potential cancer risks from the proposed generator the AERMOD dispersion model was used to estimate the maximum annual DPM concentration at the proposed on-site residential receptors (see Figure 2). The modeling was conducted in a manner similar to that described above. Building downwash effects of the proposed building and other buildings surrounding the project site on the generator exhaust plume were included in the modeling. Generator exhaust DPM and $PM_{2.5}$ emissions were calculated using the CalEEMod model and assuming 50 hours per year of operation. Since the location of the generator discharge stack would be located, it was conservatively assumed that the exhaust stack for the generator engine would be located directly in front of the project building on Webster Street. The stack was assumed to be 10 feet tall with a 6 inch diameter. Other stack exhaust parameters (i.e., exhaust gas temperature and volume flow rate) were based on manufacturer data for operation of the generator at full load conditions. The location where the generator stack was modeled in shown in Figure 2

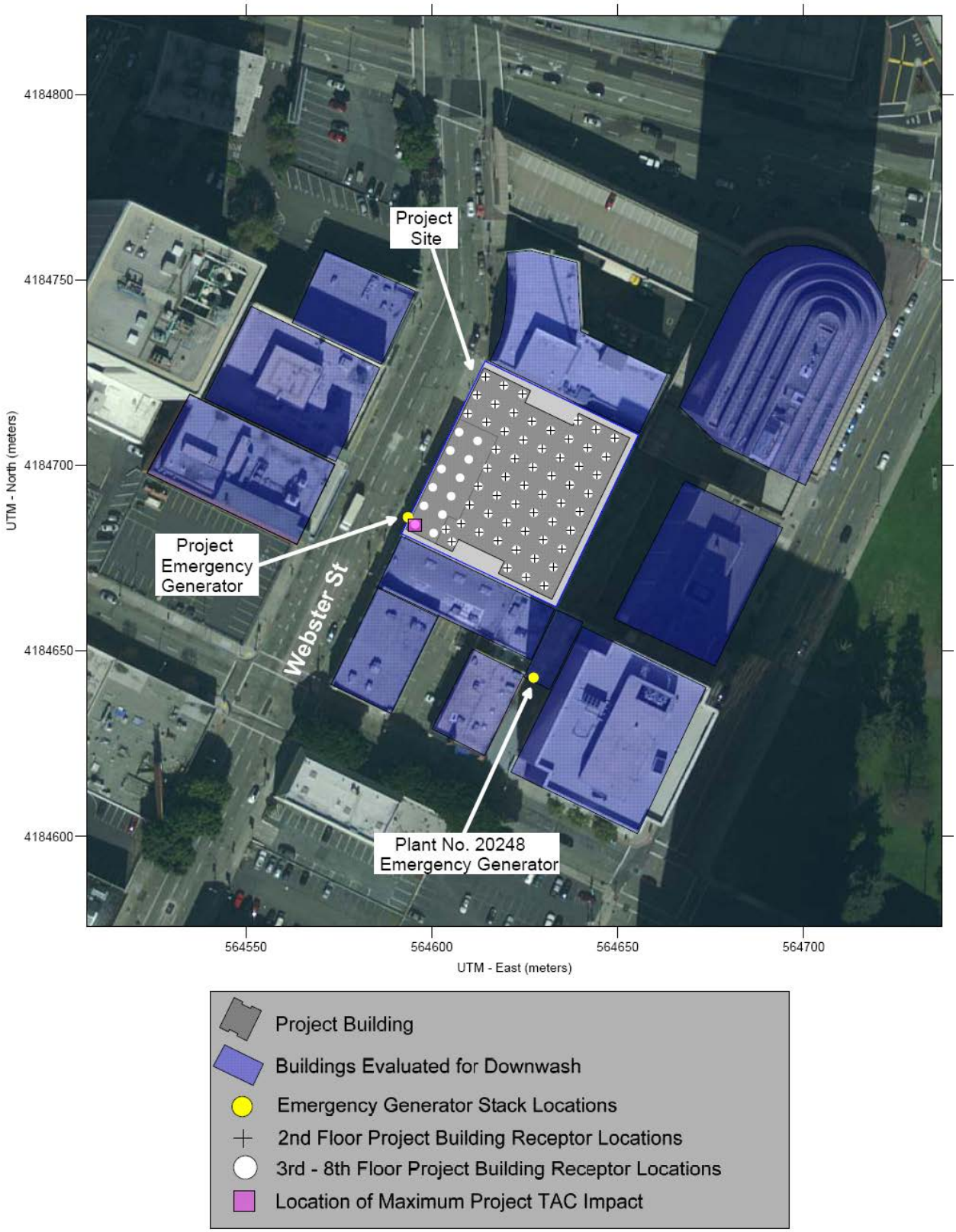
The maximum modeled DPM and $PM_{2.5}$ concentrations occurred at the proposed on-site residential receptors at the second-floor level residences. Concentration levels decrease at higher floors. The maximum annual $PM_{2.5}$ concentration was 0.09023 $\mu g/m^3$. The maximum cancer risk based on the maximum modeled DPM concentration was found to be 67.2 in one million. The maximum on-site residential HI would be less than 0.01. Project generator modeling information and risk calculations are included in *Attachment 6.*

Increased cancer risks from routine testing and maintenance of the project generator would exceed the BAAQMD significance level for project sources of 10 chances per million. $PM_{2.5}$ concentrations and HIs from operation of the project emergency generator would all be well below BAAQMD significance thresholds. To fulfill requirements of the City's SCA 21, measures would need to be taken in the design and operation of the emergency generator. These are discussed below.

Combined Cancer Risk, Hazard Index and Annual $PM_{2.5}$ Concentrations

The combination of impacts from all sources at the receptor most impacted or considered the Maximally Exposed Individual (MEI) is reported in Table 4. This would be a receptor at the southwestern corner of the project site. The combined cancer risk is below the threshold of 100 chances per million, the annual $PM_{2.5}$ concentration does not exceed 0.8 $\mu g/m^3$ and the Hazard Index is well below 10.0.

Figure 17. Locations of Off-Site Stationary Source (Plant #20248), Project Emergency Generator, On-Site Sensitive Receptors, and On-Site MEI



Impacts to Off Site Receptors

Project Construction Activity

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of respirable particulate matter (PM_{10}) and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less than significant if best management practices are employed to reduce these emissions. City-required SCA#19 would serve as best management practices for this project. Since the project includes demolition, Enhanced Measures are required under SCA#19. Specifically, SCA#19 Part w, requires construction equipment to be equipped with Best Available Control Technology for emissions reductions of NOx and particulate matter. This is interpreted as requiring equipment that meets U.S. EPA Tier 4 standards. As a result, implementation of SCA-19, would reduce on-site diesel exhaust emissions by over 80 percent. As a result, construction period health risks and annual PM2.5 impacts would be minimized and result in *less-than-significant impacts*.

Project Emergency Generator Testing and Maintenance

As described previously, emissions from the proposed diesel engine to power the emergency generator were modeled. The closest off-site sensitive receptor to the site is an apartment building located about 400 feet west on Webster Street between 17th and 19th Street. BAAQMD's *Stationary Source Screening Analysis Tool* was used to predict the near-source screening risk level. This level was adjusted for distance using BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. Having adjusted for an approximate distance of 400 feet, the cancer risk was found to be 2.74 in a million, an HI of less than 0.01 and less than 0.01 $\mu g/m^3$ $PM_{2.5}$ concentration. Project generator modeling information and risk calculations are included in *Attachment 6.*

Increased cancer risks, $PM_{2.5}$ concentrations, and HIs at all sensitive receptors from operation of the project emergency generator would all be well below BAAQMD significance thresholds. This assessment demonstrates that the proposed generator, as a stationary source, does not exceed acceptable health risk levels and therefore fulfills requirements of the City's SCA 21.

Recommendations to Meet SCA 21

SCA 21 would require that the applicant 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. Based on the health risk assessment prepared for this project, a cancer risk that exceeds the City's cancer risk threshold is predicted at residential units near the generator exhaust stacks. To meet the requirements of SCA 21, the following would apply to the project generator:

1. Modify the location and design of the project generator exhaust or generator design

2. Install a generator that includes a diesel particulate filter that meets CARB Level 2 VDECS (i.e., Verified Diesel Emissions Control Strategies) or meets U.S. EPA Tier 4 engine standards for particulate matter emissions, and

3. Limit the number of hours that the engine can be tested to less than 50 hours and the number of hours would be based on a revised health risk assessment.

To ensure that the generator meets the requirements of SCA 21, the applicant would provide an updated health risk assessment that incorporates the recommendations listed above and demonstrates that the requirements would be met. It is likely that more than one of the listed measures above would have to be incorporated to meet the SCA 21 requirements. These measures, taken together, would be expected to constitute compliance with SCA 21

Greenhouse Gas Emissions

> **Impact:** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***Less than significant with implementation of SCA#38.***

GHG emissions associated with development of the proposed project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust and worker and vendor trips. There would also be long-term operational emissions associated with vehicular traffic within the project vicinity, energy and water usage, and solid waste disposal. Emissions for the proposed project are discussed below and were analyzed using the methodology recommended in the BAAQMD CEQA Air Quality Guidelines.

<u>CalEEMod Modeling</u>

CalEEMod was used to estimate GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport.

CalEEMod has a default rate of 641.3 pounds of CO_2 per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. Pacific Gas & Electric's most recent certified rate was for 2014, which is 435 pounds of CO_2e per megawatt of electricity produced.[9] PG&E provides past CO_2 intensity rates and forecasts present and future rates (out to 2020), based on the CPUC's GHG calculator. The projected 2020 CO2 intensity rate for PG&E is 290 pounds of CO_2e per megawatt of electricity produced.

9 See PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers November 2015.

Service Population Estimates

The project service population efficiency rate is based on the number of future residences and full-time employees. The number of future full-time employees is estimated at 5 based on an approximate 3 employees per 1,000 sf of retail or office space. The number of future residences is estimated at 438 based on the latest US Census data of 2.53 average persons per household for the City of Oakland.[10] The total service population was estimated as 443.

Construction Emissions

GHG emissions associated with construction were computed to be 382 MT of CO_2e for the total construction period. These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. While BAAQMD has not proposed a threshold of significance for construction-related GHG emissions, the City of Oakland's adopted thresholds specify that the project's expected GHG emissions during construction should be annualized over a period of 40 years and then added to the expected emissions during operation for comparison to the operational threshold. A 40-year period is used because 40 years is considered the average life expectancy of a building before it is remodeled with considerations for increased energy efficiency. The project's construction emissions are included in the operational emissions below. Best management practices assumed to be incorporated into construction of the proposed project include, but are not limited to: using local building materials of at least 10 percent and recycling or reusing at least 50 percent of construction waste or demolition materials.

Operational Emissions

The CalEEMod model, along with the project vehicle trip generation rates, was used to predict daily emissions associated with operation of the fully-developed site under the proposed project. In 2021, as shown in Table 5, annual net emissions resulting from operation of the proposed project are predicted to be 599 MT of CO_2e, which would not exceed the BAAQMD significance threshold of 1,100 MT of CO_2e/ year. In terms of per capita emissions, the project would be below the BAAQMD threshold and, therefore, *this would be considered a less-than-significant impact*. The project would include an emergency generator that would be subject to BAAQMD's stationary source threshold of 10,000 MT/year. The emissions from the project generator would be well below that threshold. The CalEEMod modeling is included as *Attachment 1*.

10 United States Census Bureau, 2016. *Oakland (city), California QuickFacts, Persons per Household (2011-2015).* Available online: http://www.census.gov/quickfacts/table/PST045215/0653000. Accessed: June 1st , 2017.

Table 5. Annual Project GHG Emissions (CO_2e) in Metric Tons

Source Category	Proposed Project 2021	Existing
Construction (amortized over 40 years)	10	-
Area	9	~0
Energy Consumption	252	55
Mobile	770	383
Solid Waste Generation	51	84
Water Usage	28	5
Total	**1,126**	**527**
Net Project Emissions	**599** MT of CO_2e/year	
Per Capita Emissions	**2.54**	
BAAQMD Threshold	***1,100* MT of CO_2e/year or 4.6 MT/capita**	
Stationary Equipment	7	-
BAAQMD Threshold	***10,000* MT of CO_2e/year**	
Significant?	***No***	

Impact : Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? ***Less than significant.***

AB 32, the Global Warming Solutions Act of 2006, codifies the State of California's GHG emissions target by directing CARB to reduce the state's global warming emissions to 1990 levels by 2020. AB 32 was signed and passed into law by Governor Schwarzenegger on September 27, 2006. Since that time, CARB, CEC, the California Public Utilities Commission (CPUC), and the Building Standards Commission have all been developing regulations that will help meet the goals of AB 32 and Executive Order S-3-05.

A Scoping Plan for AB 32 was adopted by CARB in December 2008. It contains the State of California's main strategies to reduce GHGs from BAU emissions projected in 2020 back down to 1990 levels. BAU is the projected emissions in 2020, including increases in emissions caused by growth, without any GHG reduction measures. The Scoping Plan has a range of GHG reduction actions, including direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. It required CARB and other state agencies to develop and adopt regulations and other initiatives reducing GHGs by 2012.

As directed by AB 32, CARB has also approved a statewide GHG emissions limit. On December 6, 2007, CARB staff resolved an amount of 427 MMT of CO_2e as the total statewide GHG 1990 emissions level and 2020 emissions limit. The limit is a cumulative statewide limit, not a sector- or facility-specific limit. CARB updated the future 2020 BAU annual emissions forecast, in light of the economic downturn, to 545 MMT of CO_2e. Two GHG emissions reduction measures currently enacted that were not previously included in the 2008 Scoping Plan baseline inventory were

included, further reducing the baseline inventory to 507 MMT of CO_2e. Thus, an estimated reduction of 80 MMT of CO_2e is necessary to reduce statewide emissions to meet the AB 32 target by 2020.

The proposed project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan. The project would comply with requirements of the Green Building Code, the City of Oakland's Energy and Climate Action Plan, as well as the City's SCA 38 (Greenhouse Gas Reduction Plan). For example, proposed buildings would be constructed in conformance with CALGreen and the Title 24 Building Code, which requires high-efficiency water fixtures and water-efficient irrigation systems. The project is required to meet the City's Standard Conditions of Approval for GHG.

Supporting Documents

Attachment 1: City of Oakland-Standard Conditions of Approval
Attachment 2: CalEEMod Model Output
Attachment 3: Health Risk Evaluation Methodology
Attachment 4: Roadway Traffic Volumes and Roadway Calculator Output
Attachment 5: SSIF, Stationary Source Screening Calculations and Modeling
Attachment 6: On-site and Off-Site Project Generator Risk Modeling

Attachment 1: Applicable City of Oakland SCAs

AIR QUALITY

[The following condition applies to all projects involving construction activities.]

Construction-Related Air Pollution Controls (Dust and Equipment Emissions)

Requirement: The project applicant shall implement all of the following applicable air pollution control measures during construction of the project:

[BASIC CONTROLS (apply to ALL construction sites)]

z. 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.

aa. 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).

bb. 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.

cc. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.

dd. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).

ee. Limit vehicle speeds on unpaved roads to 15 miles per hour.

ff. 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 five 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.

gg. 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 five 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").

hh. 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.

ii. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.

[ENHANCED CONTROLS: All "Basic" controls listed above plus the following controls if the project involves:

- **114 or more single-family dwelling units;**
- **240 or more multi-family units;**
- **Nonresidential uses that exceed the applicable screening size listed in the Bay Area Air Quality Management District's CEQA Guidelines;**
- **Demolition permit;**
- **Simultaneous occurrence of more than two construction phases (e.g., grading and building construction occurring simultaneously);**
- **Extensive site preparation (i.e., the construction site is four acres or more in size); or**
- **Extensive soil transport (i.e., 10,000 or more cubic yards of soil import/export).]**

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.

All excavation, grading, and demolition activities shall be suspended when average wind speeds exceed 20 mph.

Install sandbags or other erosion control measures to prevent silt runoff to public roadways.

Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).

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.

Install appropriate wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of the construction site to minimize wind blown dust. Wind breaks must have a maximum 50 percent air porosity.

Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.

Activities such as excavation, grading, and other ground-disturbing construction activities shall be phased to minimize the amount of disturbed surface area at any one time.

All trucks and equipment, including tires, shall be washed off prior to leaving the site.

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.

All equipment to be used on the construction site and subject to the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") must meet emissions and performance requirements one year in advance of any fleet deadlines. Upon request by the City, the project applicant shall provide written documentation that fleet requirements have been met.

Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3: Architectural Coatings).

All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.

Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.

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.

When Required: During construction

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects that meet all of the following criteria:

a. The project involves any of the following sensitive land uses:

i. Residential uses (new dwelling units); or

ii. New or expanded schools, daycare centers, parks, nursing homes, or medical facilities; and

The project is located within 1,000' (or other distance as specified below) of one or more of the following sources of air pollution:

i. Freeway;

ii. Roadway with significant traffic (at least 10,000 vehicles/day);

iii. Rail line (except BART) with over 30 trains per day;

iv. Distribution center that accomodates more than 100 trucks per day, more than 40 trucks with operating Transportation Refrigeration Units (TRU) per day, or where the TRU unit operations exceed 300 hours per week;

v. Major rail or truck yard (such as the Union Pacific rail yard adjacent to the Port of Oakland);

vi. Ferry terminal;

vii. Stationary pollutant source requiring a permit from BAAQMD (such as a diesel generator);

viii. Within 0.5 miles of the Port of Oakland or Oakland Airport;

ix. Within 300 feet of a gas station; or

x. Within 300 feet of a dry cleaner with a machine using PERC (or within 500 feet of a dry cleaner with two or more machines using PERC); and

The project exceeds the health risk screening criteria after a screening analysis is conducted in accordance with the Bay Area Air Quality Management (BAAQMD) CEQA Guidelines.]

Exposure to Air Pollution (Toxic Air Contaminants)

jj. ***Health Risk Reduction Measures***

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants. 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 California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. 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 that 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 -

ii. 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:

Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 [insert MERV-16 for projects located in the West Oakland Specific Plan area] or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.

Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).

Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.

The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods.

Sensitive receptors shall be located on the upper floors of buildings, if feasible.

Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).

Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.

Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.

Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible:

Installing electrical hook-ups for diesel trucks at loading docks.

Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards.

Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels.

Prohibiting trucks from idling for more than two minutes.

Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

Maintenance of Health Risk Reduction Measures

Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

When Required: Ongoing

Initial Approval: N/A

Monitoring/Inspection: Bureau of Building

[The following condition applies to all projects that involve a stationary pollutant source requiring a permit from BAAQMD, including but not limited to back-up diesel generators. The California Building Code requires back-up diesel generators for all buildings over 70 feet tall.]

Stationary Sources of Air Pollution (Toxic Air Contaminants)

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:

kk. 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 -

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

[The following condition applies to all projects that involve new truck loading docks or a truck fleet of any size registered to the project applicant/operator.]

Truck-Related Risk Reduction Measures (Toxic Air Contaminants)

ll. ***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

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, lower-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

[The following condition applies to all projects involving either of the following:

a. Demolition of structures; or

Renovation of structures known to contain or may contain asbestos.]

Asbestos in Structures

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

[The following condition applies to all projects involving both of the following:

a. Construction, grading, or mining activities; and

Located in an area of naturally-occurring asbestos, serpentine soils, and/or ultramafic rock (generally above Highway 13 between Shepherd Canyon Rd. and Keller Ave.; staff can refer to the map on the City server).]

Naturally-Occurring Asbestos

Requirement: The project applicant shall comply with all applicable laws and regulations regarding construction in areas of naturally-occurring asbestos, including but not limited to, the Bay Area Air Quality Management District's (BAAQMD) Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations (implementing California Code of Regulations, section 93105, as may be amended) requiring preparation and implementation of an Asbestos Dust Mitigation Plan to minimize public exposure to naturally-occurring asbestos. 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

GREENHOUSE GAS EMISSIONS / GLOBAL CLIMATE CHANGE

[The following condition applies under any of the following scenarios for projects which result in a net increase in greenhouse gas (GHG) emissions:

b. Scenario A: Projects which (a) involve a land use development (i.e., a project that does not require a permit from the Bay Area Air Quality Management District [BAAQMD] to operate), (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines,[11]

11 For residential development projects, refer to the City's Housing Element EIR screening criteria. The Housing Element EIR's analysis showed that residential development projects of less than 172 units would not result in a significant climate change impact and, therefore, no project-specific GHG analysis is required for such projects. Under an alternative approach

and (c) after a GHG analysis is prepared would produce total GHG emissions of more than 1,100 metric tons of CO2e annually and more than 4.6 metric tons of CO2e per service population annually (with "service population" defined as the total number of employees and residents of the project).

Scenario B: Projects which (a) involve a land use development, (b) exceed the GHG emissions screening criteria contained in the BAAQMD CEQA Guidelines,[12] (c) after a GHG analysis is prepared would exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 metric tons of CO2e annually OR more than 4.6 metric tons of CO2e per service population annually), and (d) are considered to be "Very Large Projects."[13]

Scenario C: Projects which (a) involve a stationary source of GHG (i.e., a project that requires a permit from BAAQMD to operate) and (b) after a GHG analysis is prepared would produce total GHG emissions of more than 10,000 metric tons of CO2e annually.]

Greenhouse Gas (GHG) Reduction Plan

mm. ***Greenhouse Gas (GHG) Reduction Plan Required***

Requirement: The project applicant shall retain a qualified air quality consultant to develop a Greenhouse Gas (GHG) Reduction Plan for City review and approval and shall implement the approved GHG Reduction Plan.

The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below [INCLUDE THIS LANGUAGE IF SCENARIO A OR B:] at least one of the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (1,100 metric tons of CO_2e per year or 4.6 metric tons of CO_2e per year per service population) [INCLUDE THIS LANGUAGE IF SCENARIO C:] the Bay Area Quality Management District's (BAAQMD's) CEQA Thresholds of Significance (10,000 metric tons of CO_2e per year)

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in the Housing Element EIR, the analysis found that **ANY** residential development project (including those containing 172 or more units) would not result in a significant climate change impact and that no project-specific GHG analysis would be required. For residential projects containing 172 or more units, please consult with City Planning staff and the City Attorney's office on the appropriate GHG review. For nonresidential development projects and mixed-use development projects, the nonresidential component of the project must be compared to the BAAQMD screening criteria and the applicable threshold if the screening criteria are exceeded, independently from any residential component the project.

12 See footnote #1 above.

13 A "Very Large Project" is defined as any of the following:

(A) Residential development of more than 500 dwelling units;

(B) Shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space;

(C) Commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space;

(D) Hotel/motel development of more than 500 rooms;

(E) Industrial, manufacturing, processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or encompassing more than 650,000 square feet of floor area; or

(F) Any combination of smaller versions of the above that when combined result in equivalent annual GHG emissions as the above.

[INCLUDE THIS LANGUAGE IF SCENARIO B] AND to reduce GHG emissions by 36 percent below the project's "adjusted" baseline GHG emissions (as explained below) to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline 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, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) 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.

Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Air Quality 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; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "carbon credits") as explained below.

The allowable locations of the GHG reduction measures include the following (listed in order of City preference): (1) the project site; (2) off-site within the City of Oakland; (3) off-site within the San Francisco Bay Area Air Basin; (4) off-site within the State of California; then (5) elsewhere in the United States.

As with preferred locations for the implementation of all GHG reductions measures, the preference for carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (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.

When Required: Prior to approval of construction-related permit

Initial Approval: Bureau of Planning

Monitoring/Inspection: N/A

GHG Reduction Plan Implementation During Construction

Requirement: 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).

When Required: During construction

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Building

GHG Reduction Plan Implementation After Construction

Requirement: 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.

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 project emissions are less than either applicable numeric BAAQMD CEQA Thresholds [INCLUDE THIS LANGUAGE IF SCENARIO B:] AND GHG emissions are 36 percent below the project's "adjusted" baseline GHG emissions, as confirmed by the City through an established monitoring program. Monitoring and reporting activities will continue at the City's discretion, as discussed below.

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.

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.

When Required: Ongoing

Initial Approval: Bureau of Planning

Monitoring/Inspection: Bureau of Planning

Attachment 2: CalEEMod Output

1940 Webster Mixed Use

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unenclosed Parking Structure	131.00	Space	0.00	52,400.00	0
High Turnover (Sit Down Restaurant)	1.80	1000sqft	0.00	1,800.00	5
Apartments Mid Rise	173.00	Dwelling Unit	4.55	148,184.00	495

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E 2020 rate

Land Use - From project description - parking area may be double-counted Population = DOF

Construction Phase - Added trenching. Used default acreage for building size

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - 9/13 email indicates 5,400cy cement = 1,080 trips

Demolition - 9/13 email for existing building size of 21,718sf

Grading - from project description. Assume about about 10%of export would be imported as baserock

Vehicle Trips - includes 46.9% reduction = 3.75,3.60,3.30 and 68.01,84.79,70.58 adjusted to 21% passby

Woodstoves - No hearth

Energy Use -

Solid Waste - default

Construction Off-road Equipment Mitigation - Tier 4i to meet Oakland SCA

Operational Off-Road Equipment - no off-road

Stationary Sources - Emergency Generators and Fire Pumps - 230 kw Cummins C275 D6 generator

Stationary Sources - Emergency Generators and Fire Pumps EF - use default emission rates

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	12
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	5
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	25.95	56.00
tblFireplaces	NumberWood	29.41	0.00
tblGrading	MaterialExported	0.00	10,532.00
tblGrading	MaterialImported	0.00	1,500.00
tblLandUse	BuildingSpaceSquareFeet	173,000.00	148,184.00
tblLandUse	LandUseSquareFeet	173,000.00	148,184.00
tblLandUse	LotAcreage	1.18	0.00

tblLandUse	LotAcreage	0.04	0.00
tblLandUse	Population	0.00	5.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2018	2021
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	354.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	DV_TP	20.00	25.00
tblVehicleTrips	PB_TP	43.00	21.00
tblVehicleTrips	PR_TP	37.00	54.00
tblVehicleTrips	ST_TR	6.39	3.60
tblVehicleTrips	ST_TR	158.37	84.79
tblVehicleTrips	SU_TR	5.86	3.30
tblVehicleTrips	SU_TR	131.84	70.58
tblVehicleTrips	WD_TR	6.65	3.75
tblVehicleTrips	WD_TR	127.15	68.01
tblWoodstoves	WoodstoveWoodMass	582.40	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1644	1.6596	1.0480	2.5800e-003	0.1358	0.0760	0.2118	0.0544	0.0710	0.1254	0.0000	236.8060	236.8060	0.0377	0.0000	237.7483
2019	1.3433	2.3038	2.0729	4.2500e-003	0.1200	0.1225	0.2426	0.0323	0.1152	0.1475	0.0000	380.4163	380.4163	0.0612	0.0000	381.9474
Maximum	**1.3433**	**2.3038**	**2.0729**	**4.2500e-003**	**0.1358**	**0.1225**	**0.2426**	**0.0544**	**0.1152**	**0.1475**	**0.0000**	**380.4163**	**380.4163**	**0.0612**	**0.0000**	**381.9474**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	0.1644	1.6596	1.0480	2.5800e-003	0.0606	0.0760	0.1365	0.0180	0.0710	0.0890	0.0000	236.8059	236.8059	0.0377	0.0000	237.7482
2019	1.3433	2.3038	2.0729	4.2500e-003	0.1200	0.1225	0.2426	0.0323	0.1152	0.1475	0.0000	380.4160	380.4160	0.0612	0.0000	381.9471
Maximum	**1.3433**	**2.3038**	**2.0729**	**4.2500e-003**	**0.1200**	**0.1225**	**0.2426**	**0.0323**	**0.1152**	**0.1475**	**0.0000**	**380.4160**	**380.4160**	**0.0612**	**0.0000**	**381.9471**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**29.43**	**0.00**	**16.57**	**42.01**	**0.00**	**13.35**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	8-1-2018	10-31-2018	1.1219	1.1219

2	**11-1-2018**	**1-31-2019**	0.9876	0.9876
3	**2-1-2019**	**4-30-2019**	0.8913	0.8913
4	**5-1-2019**	**7-31-2019**	0.9177	0.9177
5	**8-1-2019**	**9-30-2019**	0.6458	0.6458
		Highest	1.1219	1.1219

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7353	0.0209	1.2911	1.1000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	9.0917	9.0917	2.1700e-003	1.3000e-004	9.1842
Energy	0.0123	0.1060	0.0513	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	249.7040	249.7040	0.0151	4.8800e-003	251.5363
Mobile	0.2168	1.4164	2.3347	8.3400e-003	0.6262	8.2700e-003	0.6345	0.1683	7.7800e-003	0.1761	0.0000	768.6378	768.6378	0.0347	0.0000	769.5049
Stationary	0.0145	0.0406	0.0370	7.0000e-005		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	6.7401	6.7401	9.4000e-004	0.0000	6.7637
Waste						0.0000	0.0000		0.0000	0.0000	20.5021	0.0000	20.5021	1.2116	0.0000	50.7931
Water						0.0000	0.0000		0.0000	0.0000	3.7493	11.6994	15.4487	0.3863	9.3300e-003	27.8870
Total	**0.9789**	**1.5839**	**3.7141**	**9.1900e-003**	**0.6262**	**0.0265**	**0.6527**	**0.1683**	**0.0260**	**0.1943**	**24.2514**	**1,045.8729**	**1,070.1243**	**1.6508**	**0.0143**	**1,115.6691**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7353	0.0209	1.2911	1.1000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	9.0917	9.0917	2.1700e-003	1.3000e-004	9.1842
Energy	0.0123	0.1060	0.0513	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	249.7040	249.7040	0.0151	4.8800e-003	251.5363
Mobile	0.2168	1.4164	2.3347	8.3400e-003	0.6262	8.2700e-003	0.6345	0.1683	7.7800e-003	0.1761	0.0000	768.6378	768.6378	0.0347	0.0000	769.5049
Stationary	0.0145	0.0406	0.0370	7.0000e-005		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	6.7401	6.7401	9.4000e-004	0.0000	6.7637
Waste						0.0000	0.0000		0.0000	0.0000	20.5021	0.0000	20.5021	1.2116	0.0000	50.7931
Water						0.0000	0.0000		0.0000	0.0000	3.7493	11.6994	15.4487	0.3863	9.3300e-003	27.8870
Total	**0.9789**	**1.5839**	**3.7141**	**9.1900e-003**	**0.6262**	**0.0265**	**0.6527**	**0.1683**	**0.0260**	**0.1943**	**24.2514**	**1,045.8729**	**1,070.1243**	**1.6508**	**0.0143**	**1,115.6691**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	8/1/2018	8/28/2018	5	20	
2	Site Preparation	Site Preparation	8/29/2018	9/4/2018	5	5	
3	Grading	Grading	9/5/2018	9/14/2018	5	8	

5	Building Construction	Building Construction	10/13/2018	8/30/2019	5	230	
6	Paving	Paving	8/31/2019	9/25/2019	5	18	
7	Architectural Coating	Architectural Coating	9/26/2019	10/21/2019	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 300,073; Residential Outdoor: 100,024; Non-Residential Indoor: 2,700; Non-Residential Outdoor: 900; Striped

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	99.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	1,504.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	147.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	29.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Water Unpaved Roads

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0107	0.0000	0.0107	1.6200e-003	0.0000	1.6200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1241	35.1241	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**	**0.0107**	**0.0194**	**0.0301**	**1.6200e-003**	**0.0181**	**0.0197**	**0.0000**	**35.1241**	**35.1241**	**9.6800e-003**	**0.0000**	**35.3660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0162	2.6800e-003	4.0000e-005	8.4000e-004	6.0000e-005	9.0000e-004	2.3000e-004	6.0000e-005	2.9000e-004	0.0000	3.8687	3.8687	2.0000e-004	0.0000	3.8738
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	4.9300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.1207	1.1207	4.0000e-005	0.0000	1.1216
Total	**1.1000e-003**	**0.0167**	**7.6100e-003**	**5.0000e-005**	**2.0300e-003**	**7.0000e-005**	**2.0900e-003**	**5.5000e-004**	**7.0000e-005**	**6.1000e-004**	**0.0000**	**4.9894**	**4.9894**	**2.4000e-004**	**0.0000**	**4.9954**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.6000e-004	0.0000	9.6000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0372	0.3832	0.2230	3.9000e-004		0.0194	0.0194		0.0181	0.0181	0.0000	35.1240	35.1240	9.6800e-003	0.0000	35.3660
Total	**0.0372**	**0.3832**	**0.2230**	**3.9000e-004**	**9.6000e-004**	**0.0194**	**0.0204**	**1.5000e-004**	**0.0181**	**0.0182**	**0.0000**	**35.1240**	**35.1240**	**9.6800e-003**	**0.0000**	**35.3660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.7000e-004	0.0162	2.6800e-003	4.0000e-005	8.4000e-004	6.0000e-005	9.0000e-004	2.3000e-004	6.0000e-005	2.9000e-004	0.0000	3.8687	3.8687	2.0000e-004	0.0000	3.8738
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	4.9300e-003	1.0000e-005	1.1900e-003	1.0000e-005	1.1900e-003	3.2000e-004	1.0000e-005	3.2000e-004	0.0000	1.1207	1.1207	4.0000e-005	0.0000	1.1216
Total	**1.1000e-003**	**0.0167**	**7.6100e-003**	**5.0000e-005**	**2.0300e-003**	**7.0000e-005**	**2.0900e-003**	**5.5000e-004**	**7.0000e-005**	**6.1000e-004**	**0.0000**	**4.9894**	**4.9894**	**2.4000e-004**	**0.0000**	**4.9954**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1205	0.0562	1.0000e-004		6.4400e-003	6.4400e-003		5.9300e-003	5.9300e-003	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576
Total	**0.0114**	**0.1205**	**0.0562**	**1.0000e-004**	**0.0452**	**6.4400e-003**	**0.0516**	**0.0248**	**5.9300e-003**	**0.0308**	**0.0000**	**8.6900**	**8.6900**	**2.7100e-003**	**0.0000**	**8.7576**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.4800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3362	0.3362	1.0000e-005	0.0000	0.3365
Total	**1.9000e-004**	**1.5000e-004**	**1.4800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3362**	**0.3362**	**1.0000e-005**	**0.0000**	**0.3365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0600e-003	0.0000	4.0600e-003	2.2300e-003	0.0000	2.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0114	0.1205	0.0562	1.0000e-004		6.4400e-003	6.4400e-003		5.9300e-003	5.9300e-003	0.0000	8.6900	8.6900	2.7100e-003	0.0000	8.7576
Total	**0.0114**	**0.1205**	**0.0562**	**1.0000e-004**	**4.0600e-003**	**6.4400e-003**	**0.0105**	**2.2300e-003**	**5.9300e-003**	**8.1600e-003**	**0.0000**	**8.6900**	**8.6900**	**2.7100e-003**	**0.0000**	**8.7576**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.4800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3362	0.3362	1.0000e-005	0.0000	0.3365
Total	**1.9000e-004**	**1.5000e-004**	**1.4800e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3362**	**0.3362**	**1.0000e-005**	**0.0000**	**0.3365**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0269	0.0000	0.0269	0.0136	0.0000	0.0136	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1227	0.0663	1.2000e-004		6.2100e-003	6.2100e-003		5.7100e-003	5.7100e-003	0.0000	10.8428	10.8428	3.3800e-003	0.0000	10.9271
Total	**0.0111**	**0.1227**	**0.0663**	**1.2000e-004**	**0.0269**	**6.2100e-003**	**0.0331**	**0.0136**	**5.7100e-003**	**0.0193**	**0.0000**	**10.8428**	**10.8428**	**3.3800e-003**	**0.0000**	**10.9271**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.1600e-003	0.2458	0.0407	6.1000e-004	0.0127	9.3000e-004	0.0137	3.5000e-003	8.9000e-004	4.3900e-003	0.0000	58.7724	58.7724	3.1000e-003	0.0000	58.8498
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	2.0000e-004	1.9700e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4483	0.4483	1.0000e-005	0.0000	0.4486
Total	**7.4100e-003**	**0.2460**	**0.0427**	**6.1000e-004**	**0.0132**	**9.3000e-004**	**0.0141**	**3.6300e-003**	**8.9000e-004**	**4.5200e-003**	**0.0000**	**59.2207**	**59.2207**	**3.1100e-003**	**0.0000**	**59.2985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.4200e-003	0.0000	2.4200e-003	1.2200e-003	0.0000	1.2200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0111	0.1227	0.0663	1.2000e-004		6.2100e-003	6.2100e-003		5.7100e-003	5.7100e-003	0.0000	10.8427	10.8427	3.3800e-003	0.0000	10.9271
Total	**0.0111**	**0.1227**	**0.0663**	**1.2000e-004**	**2.4200e-003**	**6.2100e-003**	**8.6300e-003**	**1.2200e-003**	**5.7100e-003**	**6.9300e-003**	**0.0000**	**10.8427**	**10.8427**	**3.3800e-003**	**0.0000**	**10.9271**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.1600e-003	0.2458	0.0407	6.1000e-004	0.0127	9.3000e-004	0.0137	3.5000e-003	8.9000e-004	4.3900e-003	0.0000	58.7724	58.7724	3.1000e-003	0.0000	58.8498
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	2.0000e-004	1.9700e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4483	0.4483	1.0000e-005	0.0000	0.4486
Total	**7.4100e-003**	**0.2460**	**0.0427**	**6.1000e-004**	**0.0132**	**9.3000e-004**	**0.0141**	**3.6300e-003**	**8.9000e-004**	**4.5200e-003**	**0.0000**	**59.2207**	**59.2207**	**3.1100e-003**	**0.0000**	**59.2985**

3.6 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0750	0.6549	0.4923	7.5000e-004		0.0420	0.0420		0.0395	0.0395	0.0000	66.5748	66.5748	0.0163	0.0000	66.9826
Total	**0.0750**	**0.6549**	**0.4923**	**7.5000e-004**		**0.0420**	**0.0420**		**0.0395**	**0.0395**	**0.0000**	**66.5748**	**66.5748**	**0.0163**	**0.0000**	**66.9826**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7600e-003	0.1019	0.0233	2.1000e-004	4.9600e-003	7.3000e-004	5.6900e-003	1.4400e-003	7.0000e-004	2.1300e-003	0.0000	20.2759	20.2759	1.3000e-003	0.0000	20.3084
Worker	0.0173	0.0135	0.1351	3.4000e-004	0.0325	2.4000e-004	0.0328	8.6600e-003	2.2000e-004	8.8800e-003	0.0000	30.7522	30.7522	9.6000e-004	0.0000	30.7763
Total	**0.0210**	**0.1155**	**0.1584**	**5.5000e-004**	**0.0375**	**9.7000e-004**	**0.0385**	**0.0101**	**9.2000e-004**	**0.0110**	**0.0000**	**51.0282**	**51.0282**	**2.2600e-003**	**0.0000**	**51.0847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0750	0.6549	0.4923	7.5000e-004		0.0420	0.0420		0.0395	0.0395	0.0000	66.5748	66.5748	0.0163	0.0000	66.9825
Total	**0.0750**	**0.6549**	**0.4923**	**7.5000e-004**		**0.0420**	**0.0420**		**0.0395**	**0.0395**	**0.0000**	**66.5748**	**66.5748**	**0.0163**	**0.0000**	**66.9825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7600e-003	0.1019	0.0233	2.1000e-004	4.9600e-003	7.3000e-004	5.6900e-003	1.4400e-003	7.0000e-004	2.1300e-003	0.0000	20.2759	20.2759	1.3000e-003	0.0000	20.3084
Worker	0.0173	0.0135	0.1351	3.4000e-004	0.0325	2.4000e-004	0.0328	8.6600e-003	2.2000e-004	8.8800e-003	0.0000	30.7522	30.7522	9.6000e-004	0.0000	30.7763
Total	**0.0210**	**0.1155**	**0.1584**	**5.5000e-004**	**0.0375**	**9.7000e-004**	**0.0385**	**0.0101**	**9.2000e-004**	**0.0110**	**0.0000**	**51.0282**	**51.0282**	**2.2600e-003**	**0.0000**	**51.0847**

3.6 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2054	1.8339	1.4933	2.3400e-003		0.1122	0.1122		0.1055	0.1055	0.0000	204.5407	204.5407	0.0498	0.0000	205.7864
Total	**0.2054**	**1.8339**	**1.4933**	**2.3400e-003**		**0.1122**	**0.1122**		**0.1055**	**0.1055**	**0.0000**	**204.5407**	**204.5407**	**0.0498**	**0.0000**	**205.7864**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.3004	0.0665	6.5000e-004	0.0154	1.9200e-003	0.0174	4.4600e-003	1.8400e-003	6.3000e-003	0.0000	62.5715	62.5715	3.8600e-003	0.0000	62.6679
Worker	0.0484	0.0369	0.3730	1.0300e-003	0.1011	7.2000e-004	0.1018	0.0269	6.6000e-004	0.0276	0.0000	92.7576	92.7576	2.6500e-003	0.0000	92.8237
Total	**0.0590**	**0.3373**	**0.4394**	**1.6800e-003**	**0.1166**	**2.6400e-003**	**0.1192**	**0.0314**	**2.5000e-003**	**0.0339**	**0.0000**	**155.3291**	**155.3291**	**6.5100e-003**	**0.0000**	**155.4916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2054	1.8339	1.4933	2.3400e-003		0.1122	0.1122		0.1055	0.1055	0.0000	204.5404	204.5404	0.0498	0.0000	205.7861
Total	**0.2054**	**1.8339**	**1.4933**	**2.3400e-003**		**0.1122**	**0.1122**		**0.1055**	**0.1055**	**0.0000**	**204.5404**	**204.5404**	**0.0498**	**0.0000**	**205.7861**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.3004	0.0665	6.5000e-004	0.0154	1.9200e-003	0.0174	4.4600e-003	1.8400e-003	6.3000e-003	0.0000	62.5715	62.5715	3.8600e-003	0.0000	62.6679
Worker	0.0484	0.0369	0.3730	1.0300e-003	0.1011	7.2000e-004	0.1018	0.0269	6.6000e-004	0.0276	0.0000	92.7576	92.7576	2.6500e-003	0.0000	92.8237
Total	**0.0590**	**0.3373**	**0.4394**	**1.6800e-003**	**0.1166**	**2.6400e-003**	**0.1192**	**0.0314**	**2.5000e-003**	**0.0339**	**0.0000**	**155.3291**	**155.3291**	**6.5100e-003**	**0.0000**	**155.4916**

3.7 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1148	0.1108	1.7000e-004		6.4800e-003	6.4800e-003		5.9700e-003	5.9700e-003	0.0000	15.0501	15.0501	4.6300e-003	0.0000	15.1658
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0114**	**0.1148**	**0.1108**	**1.7000e-004**		**6.4800e-003**	**6.4800e-003**		**5.9700e-003**	**5.9700e-003**	**0.0000**	**15.0501**	**15.0501**	**4.6300e-003**	**0.0000**	**15.1658**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.2000e-004	5.2500e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3055	1.3055	4.0000e-005	0.0000	1.3065
Total	**6.8000e-004**	**5.2000e-004**	**5.2500e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3055**	**1.3055**	**4.0000e-005**	**0.0000**	**1.3065**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1148	0.1108	1.7000e-004		6.4800e-003	6.4800e-003		5.9700e-003	5.9700e-003	0.0000	15.0501	15.0501	4.6300e-003	0.0000	15.1658
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0114**	**0.1148**	**0.1108**	**1.7000e-004**		**6.4800e-003**	**6.4800e-003**		**5.9700e-003**	**5.9700e-003**	**0.0000**	**15.0501**	**15.0501**	**4.6300e-003**	**0.0000**	**15.1658**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.8000e-004	5.2000e-004	5.2500e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.3055	1.3055	4.0000e-005	0.0000	1.3065
Total	**6.8000e-004**	**5.2000e-004**	**5.2500e-003**	**1.0000e-005**	**1.4200e-003**	**1.0000e-005**	**1.4300e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3055**	**1.3055**	**4.0000e-005**	**0.0000**	**1.3065**

3.8 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0634					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0165	0.0166	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.2979	2.2979	1.9000e-004	0.0000	2.3028
Total	**1.0658**	**0.0165**	**0.0166**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.2979**	**2.2979**	**1.9000e-004**	**0.0000**	**2.3028**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9000e-004	7.5000e-004	7.6100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.8930	1.8930	5.0000e-005	0.0000	1.8944
Total	**9.9000e-004**	**7.5000e-004**	**7.6100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.8930**	**1.8930**	**5.0000e-005**	**0.0000**	**1.8944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.0634					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4000e-003	0.0165	0.0166	3.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003	0.0000	2.2979	2.2979	1.9000e-004	0.0000	2.3028
Total	**1.0658**	**0.0165**	**0.0166**	**3.0000e-005**		**1.1600e-003**	**1.1600e-003**		**1.1600e-003**	**1.1600e-003**	**0.0000**	**2.2979**	**2.2979**	**1.9000e-004**	**0.0000**	**2.3028**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.9000e-004	7.5000e-004	7.6100e-003	2.0000e-005	2.0600e-003	1.0000e-005	2.0800e-003	5.5000e-004	1.0000e-005	5.6000e-004	0.0000	1.8930	1.8930	5.0000e-005	0.0000	1.8944
Total	**9.9000e-004**	**7.5000e-004**	**7.6100e-003**	**2.0000e-005**	**2.0600e-003**	**1.0000e-005**	**2.0800e-003**	**5.5000e-004**	**1.0000e-005**	**5.6000e-004**	**0.0000**	**1.8930**	**1.8930**	**5.0000e-005**	**0.0000**	**1.8944**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2168	1.4164	2.3347	8.3400e-003	0.6262	8.2700e-003	0.6345	0.1683	7.7800e-003	0.1761	0.0000	768.6378	768.6378	0.0347	0.0000	769.5049
Unmitigated	0.2168	1.4164	2.3347	8.3400e-003	0.6262	8.2700e-003	0.6345	0.1683	7.7800e-003	0.1761	0.0000	768.6378	768.6378	0.0347	0.0000	769.5049

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	648.75	622.80	570.90	1,464,110	1,464,110
High Turnover (Sit Down Restaurant)	122.42	152.62	127.04	210,151	210,151
Unenclosed Parking Structure	0.00	0.00	0.00		
Total	771.17	775.42	697.94	1,674,261	1,674,261

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3
High Turnover (Sit Down Restaurant)	9.50	7.30	7.30	8.50	72.50	19.00	54	25	21
Unenclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unenclosed Parking Structure	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
High Turnover (Sit Down Restaurant)	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Apartments Mid Rise	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	127.9458	127.9458	0.0128	2.6500e-003	129.0545
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	127.9458	127.9458	0.0128	2.6500e-003	129.0545
NaturalGas Mitigated	0.0123	0.1060	0.0513	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	121.7582	121.7582	2.3300e-003	2.2300e-003	122.4818
NaturalGas Unmitigated	0.0123	0.1060	0.0513	6.7000e-004		8.5000e-003	8.5000e-003		8.5000e-003	8.5000e-003	0.0000	121.7582	121.7582	2.3300e-003	2.2300e-003	122.4818

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.97905e+006	0.0107	0.0912	0.0388	5.8000e-004		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	105.6095	105.6095	2.0200e-003	1.9400e-003	106.2371
High Turnover (Sit Down Restaurant)	302616	1.6300e-003	0.0148	0.0125	9.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	16.1487	16.1487	3.1000e-004	3.0000e-004	16.2447
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0123**	**0.1060**	**0.0513**	**6.7000e-004**		**8.5000e-003**	**8.5000e-003**		**8.5000e-003**	**8.5000e-003**	**0.0000**	**121.7582**	**121.7582**	**2.3300e-003**	**2.2400e-003**	**122.4818**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.97905e+006	0.0107	0.0912	0.0388	5.8000e-004		7.3700e-003	7.3700e-003		7.3700e-003	7.3700e-003	0.0000	105.6095	105.6095	2.0200e-003	1.9400e-003	106.2371
High Turnover (Sit Down Restaurant)	302616	1.6300e-003	0.0148	0.0125	9.0000e-005		1.1300e-003	1.1300e-003		1.1300e-003	1.1300e-003	0.0000	16.1487	16.1487	3.1000e-004	3.0000e-004	16.2447
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0123**	**0.1060**	**0.0513**	**6.7000e-004**		**8.5000e-003**	**8.5000e-003**		**8.5000e-003**	**8.5000e-003**	**0.0000**	**121.7582**	**121.7582**	**2.3300e-003**	**2.2400e-003**	**122.4818**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	782200	102.8921	0.0103	2.1300e-003	103.7837
High Turnover (Sit Down Restaurant)	52650	6.9257	6.9000e-004	1.4000e-004	6.9857
Unenclosed Parking Structure	137812	18.1280	1.8100e-003	3.8000e-004	18.2851
Total		**127.9458**	**0.0128**	**2.6500e-003**	**129.0545**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	782200	102.8921	0.0103	2.1300e-003	103.7837
High Turnover (Sit Down Restaurant)	52650	6.9257	6.9000e-004	1.4000e-004	6.9857
Unenclosed Parking Structure	137812	18.1280	1.8100e-003	3.8000e-004	18.2851

Total		**127.9458**	**0.0128**	**2.6500e-003**	**129.0545**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7353	0.0209	1.2911	1.1000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	9.0917	9.0917	2.1700e-003	1.3000e-004	9.1842
Unmitigated	0.7353	0.0209	1.2911	1.1000e-004		7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	9.0917	9.0917	2.1700e-003	1.3000e-004	9.1842

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1063					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5892					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.1000e-004	6.0400e-003	2.5700e-003	4.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	6.9910	6.9910	1.3000e-004	1.3000e-004	7.0325
Landscaping	0.0391	0.0149	1.2886	7.0000e-005		7.1000e-003	7.1000e-003		7.1000e-003	7.1000e-003	0.0000	2.1007	2.1007	2.0400e-003	0.0000	2.1517
Total	**0.7353**	**0.0209**	**1.2911**	**1.1000e-004**		**7.5900e-003**	**7.5900e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**9.0917**	**9.0917**	**2.1700e-003**	**1.3000e-004**	**9.1842**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1063					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5892					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	7.1000e-004	6.0400e-003	2.5700e-003	4.0000e-005		4.9000e-004	4.9000e-004		4.9000e-004	4.9000e-004	0.0000	6.9910	6.9910	1.3000e-004	1.3000e-004	7.0325
Landscaping	0.0391	0.0149	1.2886	7.0000e-005		7.1000e-003	7.1000e-003		7.1000e-003	7.1000e-003	0.0000	2.1007	2.1007	2.0400e-003	0.0000	2.1517
Total	**0.7353**	**0.0209**	**1.2911**	**1.1000e-004**		**7.5900e-003**	**7.5900e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**9.0917**	**9.0917**	**2.1700e-003**	**1.3000e-004**	**9.1842**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	15.4487	0.3863	9.3300e-003	27.8870
Unmitigated	15.4487	0.3863	9.3300e-003	27.8870

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.2716 / 7.10604	14.8704	0.3684	8.9100e-003	26.7348
High Turnover (Sit Down Restaurant)	0.546361 / 0.0348741	0.5783	0.0178	4.3000e-004	1.1521
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**15.4487**	**0.3863**	**9.3400e-003**	**27.8870**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	11.2716 / 7.10604	14.8704	0.3684	8.9100e-003	26.7348
High Turnover (Sit Down Restaurant)	0.546361 / 0.0348741	0.5783	0.0178	4.3000e-004	1.1521
Unenclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**15.4487**	**0.3863**	**9.3400e-003**	**27.8870**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	20.5021	1.2116	0.0000	50.7931
Unmitigated	20.5021	1.2116	0.0000	50.7931

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	79.58	16.1540	0.9547	0.0000	40.0209
High Turnover (Sit Down Restaurant)	21.42	4.3481	0.2570	0.0000	10.7722
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**20.5021**	**1.2116**	**0.0000**	**50.7931**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	79.58	16.1540	0.9547	0.0000	40.0209
High Turnover (Sit Down Restaurant)	21.42	4.3481	0.2570	0.0000	10.7722
Unenclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Total		**20.5021**	**1.2116**	**0.0000**	**50.7931**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0	50	354	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					

Emergency Generator - Diesel (300 - 600 HP)	0.0145	0.0406	0.0370	7.0000e-005		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	6.7401	6.7401	9.4000e-004	0.0000	6.7637
Total	**0.0145**	**0.0406**	**0.0370**	**7.0000e-005**		**2.1400e-003**	**2.1400e-003**		**2.1400e-003**	**2.1400e-003**	**0.0000**	**6.7401**	**6.7401**	**9.4000e-004**	**0.0000**	**6.7637**

11.0 Vegetation

1940 Webster Existing

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Bank (with Drive-Through)	6.00	1000sqft	0.14	6,000.00	0
Medical Office Building	15.00	1000sqft	0.34	15,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - PG&E future 2020 rate

Land Use - Based on land uses in traffic trip generation

Construction Phase - no construction

Vehicle Trips - Bank = 39.67, 23.11,8.54 MOB = 19.47,4.83,0.83

Table Name	Column Name	Default Value	New Value
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2018	2021
tblVehicleTrips	DV_TP	26.00	48.00
tblVehicleTrips	DV_TP	30.00	33.00
tblVehicleTrips	PB_TP	47.00	0.00
tblVehicleTrips	PB_TP	10.00	0.00
tblVehicleTrips	PR_TP	27.00	52.00
tblVehicleTrips	PR_TP	60.00	67.00
tblVehicleTrips	ST_TR	86.32	23.11
tblVehicleTrips	ST_TR	8.96	4.83
tblVehicleTrips	SU_TR	31.90	8.54
tblVehicleTrips	SU_TR	1.55	0.83
tblVehicleTrips	WD_TR	148.15	39.67
tblVehicleTrips	WD_TR	36.13	19.47

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Area	0.0930	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004
Energy	2.3700e-003	0.0216	0.0181	1.3000e-004		1.6400e-003	1.6400e-003		1.6400e-003	1.6400e-003	0.0000	54.7691	54.7691	3.5800e-003	1.0800e-003	55.1797
Mobile	0.1147	0.7378	1.1869	4.1500e-003	0.3077	4.1200e-003	0.3118	0.0827	3.8700e-003	0.0866	0.0000	382.3482	382.3482	0.0179	0.0000	382.7968
Waste						0.0000	0.0000		0.0000	0.0000	34.0213	0.0000	34.0213	2.0106	0.0000	84.2863
Water						0.0000	0.0000		0.0000	0.0000	0.6726	1.7411	2.4136	0.0693	1.6700e-003	4.6417
Total	**0.2100**	**0.7594**	**1.2052**	**4.2800e-003**	**0.3077**	**5.7600e-003**	**0.3135**	**0.0827**	**5.5100e-003**	**0.0882**	**34.6939**	**438.8587**	**473.5526**	**2.1014**	**2.7500e-003**	**526.9049**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0930	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004
Energy	2.3700e-003	0.0216	0.0181	1.3000e-004		1.6400e-003	1.6400e-003		1.6400e-003	1.6400e-003	0.0000	54.7691	54.7691	3.5800e-003	1.0800e-003	55.1797
Mobile	0.1147	0.7378	1.1869	4.1500e-003	0.3077	4.1200e-003	0.3118	0.0827	3.8700e-003	0.0866	0.0000	382.3482	382.3482	0.0179	0.0000	382.7968
Waste						0.0000	0.0000		0.0000	0.0000	34.0213	0.0000	34.0213	2.0106	0.0000	84.2863
Water						0.0000	0.0000		0.0000	0.0000	0.6726	1.7411	2.4136	0.0693	1.6700e-003	4.6417
Total	**0.2100**	**0.7594**	**1.2052**	**4.2800e-003**	**0.3077**	**5.7600e-003**	**0.3135**	**0.0827**	**5.5100e-003**	**0.0882**	**34.6939**	**438.8587**	**473.5526**	**2.1014**	**2.7500e-003**	**526.9049**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/5/2017	10/5/2017	5	1	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0192	0.0192	0.0000	0.0000	0.0192
Total	**1.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0192**	**0.0192**	**0.0000**	**0.0000**	**0.0192**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.3000e-004	5.2600e-003	2.1800e-003	0.0000		2.4000e-004	2.4000e-004		2.2000e-004	2.2000e-004	0.0000	0.4534	0.4534	1.4000e-004	0.0000	0.4569
Total	**4.3000e-004**	**5.2600e-003**	**2.1800e-003**	**0.0000**	**2.7000e-004**	**2.4000e-004**	**5.1000e-004**	**3.0000e-005**	**2.2000e-004**	**2.5000e-004**	**0.0000**	**0.4534**	**0.4534**	**1.4000e-004**	**0.0000**	**0.4569**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0192	0.0192	0.0000	0.0000	0.0192

Total	**1.0000e-005**	**1.0000e-005**	**9.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0192**	**0.0192**	**0.0000**	**0.0000**	**0.0192**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1147	0.7378	1.1869	4.1500e-003	0.3077	4.1200e-003	0.3118	0.0827	3.8700e-003	0.0866	0.0000	382.3482	382.3482	0.0179	0.0000	382.7968
Unmitigated	0.1147	0.7378	1.1869	4.1500e-003	0.3077	4.1200e-003	0.3118	0.0827	3.8700e-003	0.0866	0.0000	382.3482	382.3482	0.0179	0.0000	382.7968

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Bank (with Drive-Through)	238.02	138.66	51.24	341,931	341,931
Medical Office Building	292.05	72.45	12.45	480,743	480,743
Total	530.07	211.11	63.69	822,674	822,674

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Bank (with Drive-Through)	9.50	7.30	7.30	6.60	74.40	19.00	52	48	0
Medical Office Building	9.50	7.30	7.30	29.60	51.40	19.00	67	33	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Bank (with Drive-Through)	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Medical Office Building	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.2741	31.2741	3.1300e-003	6.5000e-004	31.5451
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	31.2741	31.2741	3.1300e-003	6.5000e-004	31.5451
NaturalGas Mitigated	2.3700e-003	0.0216	0.0181	1.3000e-004		1.6400e-003	1.6400e-003		1.6400e-003	1.6400e-003	0.0000	23.4950	23.4950	4.5000e-004	4.3000e-004	23.6346

NaturalGas Unmitigated	2.3700e-003	0.0216	0.0181	1.3000e-004		1.6400e-003	1.6400e-003		1.6400e-003	1.6400e-003	0.0000	23.4950	23.4950	4.5000e-004	4.3000e-004	23.6346

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Bank (with Drive-Through)	148980	8.0000e-004	7.3000e-003	6.1300e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	7.9501	7.9501	1.5000e-004	1.5000e-004	7.9974
Medical Office Building	291300	1.5700e-003	0.0143	0.0120	9.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	15.5449	15.5449	3.0000e-004	2.8000e-004	15.6373
Total		**2.3700e-003**	**0.0216**	**0.0181**	**1.3000e-004**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**23.4950**	**23.4950**	**4.5000e-004**	**4.3000e-004**	**23.6346**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Bank (with Drive-Through)	148980	8.0000e-004	7.3000e-003	6.1300e-003	4.0000e-005		5.6000e-004	5.6000e-004		5.6000e-004	5.6000e-004	0.0000	7.9501	7.9501	1.5000e-004	1.5000e-004	7.9974
Medical Office Building	291300	1.5700e-003	0.0143	0.0120	9.0000e-005		1.0900e-003	1.0900e-003		1.0900e-003	1.0900e-003	0.0000	15.5449	15.5449	3.0000e-004	2.8000e-004	15.6373
Total		**2.3700e-003**	**0.0216**	**0.0181**	**1.3000e-004**		**1.6500e-003**	**1.6500e-003**		**1.6500e-003**	**1.6500e-003**	**0.0000**	**23.4950**	**23.4950**	**4.5000e-004**	**4.3000e-004**	**23.6346**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	46200	6.0772	6.1000e-004	1.3000e-004	6.1299
Medical Office Building	191550	25.1968	2.5200e-003	5.2000e-004	25.4152
Total		**31.2741**	**3.1300e-003**	**6.5000e-004**	**31.5451**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Bank (with Drive-Through)	46200	6.0772	6.1000e-004	1.3000e-004	6.1299
Medical Office Building	191550	25.1968	2.5200e-003	5.2000e-004	25.4152
Total		**31.2741**	**3.1300e-003**	**6.5000e-004**	**31.5451**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0930	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004
Unmitigated	0.0930	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0110					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0820					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004
Total	**0.0930**	**0.0000**	**1.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.0000**	**4.0000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0110					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0820					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	1.9000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.8000e-004	3.8000e-004	0.0000	0.0000	4.0000e-004
Total	**0.0930**	**0.0000**	**1.9000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.8000e-004**	**3.8000e-004**	**0.0000**	**0.0000**	**4.0000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			

Mitigated	2.4136	0.0693	1.6700e-003	4.6417
Unmitigated	2.4136	0.0693	1.6700e-003	4.6417

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.237738 / 0.14571	0.3117	7.7700e-003	1.9000e-004	0.5620
Medical Office Building	1.88221 / 0.358516	2.1019	0.0615	1.4800e-003	4.0798
Total		**2.4136**	**0.0693**	**1.6700e-003**	**4.6417**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Bank (with Drive-Through)	0.237738 / 0.14571	0.3117	7.7700e-003	1.9000e-004	0.5620
Medical Office Building	1.88221 / 0.358516	2.1019	0.0615	1.4800e-003	4.0798
Total		**2.4136**	**0.0693**	**1.6700e-003**	**4.6417**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	34.0213	2.0106	0.0000	84.2863
Unmitigated	34.0213	2.0106	0.0000	84.2863

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			

Bank (with Drive-Through)	5.6	1.1368	0.0672	0.0000	2.8163
Medical Office Building	162	32.8845	1.9434	0.0000	81.4701
Total		**34.0213**	**2.0106**	**0.0000**	**84.2863**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Bank (with Drive-Through)	5.6	1.1368	0.0672	0.0000	2.8163
Medical Office Building	162	32.8845	1.9434	0.0000	81.4701
Total		**34.0213**	**2.0106**	**0.0000**	**84.2863**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

TABLE 3: VEHICLE TRIP GENERATION

Land Use	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Project Trip Generation								
Apartments[2]	173 DU	1,180	18	71	89	73	40	113
High-Turnover (Sit-Down) Restaurant[3]	1.8 KSF	230	11	9	20	11	7	18
Proposed Project Raw Trip Generation		***1,410***	***29***	***80***	***109***	***84***	***47***	***131***
Pass-By Trips - Restaurant (21% Daily, 43% PM)[4]		*-50*	*--*	*--*	*--*	*-5*	*-3*	*-8*
Subtotal		***1,360***	***29***	***80***	***109***	***79***	***44***	***123***
Non-Auto Adjustment[5]		*-640*	*-14*	*-37*	*-51*	*-37*	*-21*	*-58*
Proposed Project Vehicle Trip Generation		***720***	***15***	***43***	***58***	***42***	***23***	***65***
Existing Trip Generation								
Walk-In Bank[6]	6.0 KSF[7]	590	--	--	--	32	41	73
Medical-Office Building[8]	15.0 KSF[7]	550	28	8	36	15	39	54
Existing Raw Trip Generation		***1,140***	***28***	***8***	***36***	***47***	***80***	***127***
Pass-By Trips - Bank (24% Daily, 47% PM)[9]		*-140*	*--*	*--*	*--*	*-15*	*-19*	*-34*
Subtotal		***1,000***	***28***	***8***	***36***	***32***	***61***	***93***
Non-Auto Adjustment[5]		*-470*	*-13*	*-4*	*-17*	*-15*	*-29*	*-44*
Existing Vehicle Trip Generation		***530***	***15***	***4***	***19***	***17***	***32***	***49***
Net-New Vehicle Trip Generation		***190***	***0***	***39***	***39***	***25***	***-9***	***16***

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):
   Daily: T = 6.06*(X)+123.56
   AM Peak Hour: T = 0.49*(X)+3.73 (20% in, 80% out)
   PM Peak Hour: T = 0.55*(X)+17.65 (65% in, 35% out)
3. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover (Sit-Down) Restaurant):
   Daily: T = 127.15*(X)
   AM Peak Hour: T = 10.81*(X) (55% in, 45% out)

PM Peak Hour: T = 9.85*(X) (60% in, 40% out)

4. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 932 is 43%. Half (21%) is applied to the daily trips.
5. The 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment within 0.5 miles of a BART Station.
6. ITE Trip Generation (9th Edition) land use category 911 (Walk-In Bank):
   Daily: (PM Peak Hour Trips)*8
   No daily rates are provided in ITE. The bank is open 8 hours on weekdays. This analysis assumes each hour generates the same number of trips as the PM peak hour.
   AM Peak Hour: The bank is closed during the AM peak period (7:00AM-9:00AM)
   PM Peak Hour: T = 12.13*(X) (44% in, 56% out)
7. Existing land uses' square footage is approximated based on site visits and information provided by the applicant.
8. ITE Trip Generation (9^{th} Edition) land use category 720 (Medical-Office Building):
   Daily: T = 36.1*(X)
   AM Peak Hour: T = 2.39*(X) (79% in, 21% out)
   PM Peak Hour: T = 3.57*(X) (28% in, 72% out)
9. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition) data for Drive-In Banks. The weekday PM peak hour average pass-by rates for land use category 912 is 47%. Half (24%) is applied to the daily trips.

Source: Fehr & Peers, 2017.

Attachment 3: Health Impact Evaluation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[14] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[15] This HRA used the recent 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[16] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs are calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency of exposure, and the exposure duration. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day). As recommended by the BAAQMD, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways).

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity that would have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR \times A \times (EF/365) \times 10^{-6}$

Where:

14 OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
15 CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
16 BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. January 2016.

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child		Adult
	Age Range →	3rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day)$^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	631	572	261
Inhalation Absorption Factor		1	1	1	1	1
Averaging Time (years)		70	70	70	70	70
Exposure Duration (years)		0.25	2	14	14	14
Exposure Frequency (days/year)		350	350	350	350	350
Age Sensitivity Factor		10	10	3	3	1
Fraction of Time at Home		0.85-1.0	0.85-1.0	0.72-1.0	0.72-1.0	0.73

* 95th percentile breathing rates for 3rd trimester and infants and 80th percentile for children and adults

Non-Cancer Hazards

Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

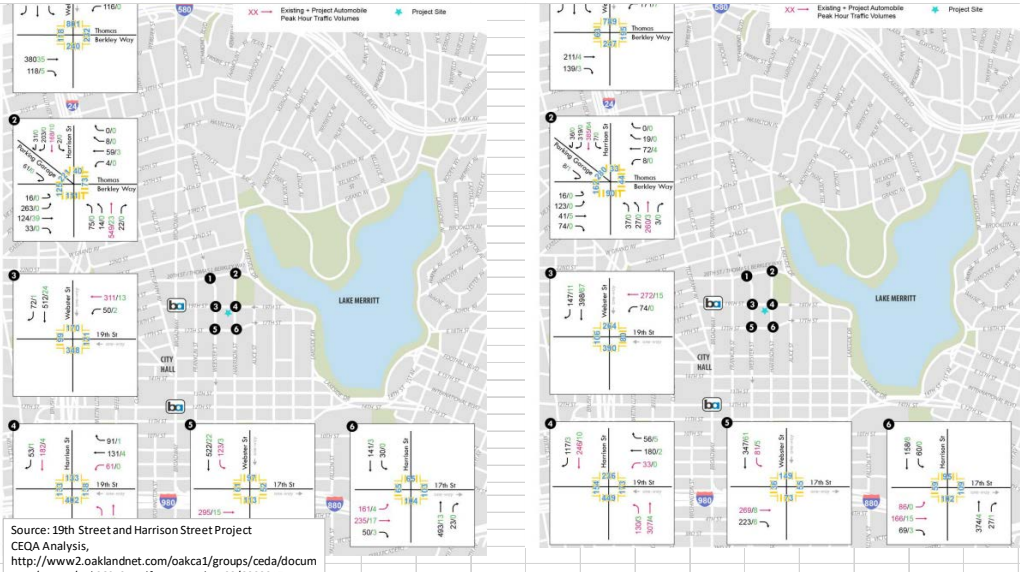
Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 4: Roadway Screening Calculator Results

Webster Street and Thomas Berkeley Way (#1)				
Thomas Berkeley Way/20th				270ft
	EB	WB		
AM	248	438		
PM	435	379	8,140	
Harrison and 17th (#4 and #6)				
Harrison	NB	SB	ADT	190ft
AM	363	363		
PM	593	235	8,280	
17th				620ft
AM	321			
PM	446		4,460	
Franklin and 20th (see below)				
Franklin	NB	SB	ADT	380ft
AM	339			
PM	659		6,590	
Broadway from Oakland traffic counts				750ft
		ADT =	13,800	
See http://maps.kittelson.com/OaklandCounts.				



Existing Plus Project - AM													
Northbou	Eastbounc	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Franklin S	21st Stree	11	155	77				9	145			59	29
Webster S	21st Street				105	348	48		127	88	45	64	
Franklin S	20th Stree	36	199	104				36	251			234	84
Webster S	20th Street				64	320	97		191	159	204	216	
Existing Plus Project - PM													
Northbou	Eastbounc	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Franklin S	21st Stree	25	356	137				16	117			86	91
Webster S	21st Street				50	387	38		148	102	53	139	
Franklin S	20th Stree	62	360	237				43	257			244	107
Webster S	20th Street				46	364	106		382	116	89	249	
from 2044 Franklin Project													

Bay Area Air Quality Management District

Roadway Screening Analysis Calculator

County specific tables containing estimates of risk and hazard impacts from roadways in the Bay Area.

INSTRUCTIONS:

Input the site-specific characteristics of your project by using the drop down menu in the "Search Parameter" box. We recommend that this analysis be used for roadways with 10,000 AADT and above.

- County: Select the County where the project is located. The calculator is only applicable for projects within the nine Bay Area counties.
- Roadway Direction: Select the orientation that best matches the roadway. If the roadway orientation is neither clearly north-south nor east-west, use the highest values predicted from either orientation.
- Side of the Roadway: Identify on which side of the roadway the project is located.
- Distance from Roadway: Enter the distance in feet from the nearest edge of the roadway to the project site. The calculator estimates values for distances greater than 10 feet and less than 1000 feet. For distances greater than 1000 feet, the user can choose to extrapolate values using a distribution curve or apply 1000 feet values for greater distances.
- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

When the user has completed the data entries, the screening level PM2.5 annual average concentration and the cancer risk results will appear in the Results Box on the right. Please note that the roadway tool is not applicable for California State Highways and the District refers the user to the Highway Screening Analysis Tool at: http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx.

Notes and References listed below the Search Boxes

Search Parameters

County	Alameda
Roadway Direction	North-South
Side of the Roadway	East
Distance from Roadway	25 feet
Annual Average Daily Traffic (ADT)	5,840

Results

Alameda County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average: 0.108 ($\mu g/m^3$)

Cancer Risk: 5.50 (per million)

Webster

Data for Alameda County based on meteorological data collected from Pleasanton in 2005

Adjusted for 2015 OEHHA and EMFAC2014 for 2018: 3.78 (per million)

Note that EMFAC2014 predicts DSL PM2.5 aggragate rates in 2018 that are 46% of EMFAC2011 for 2014. TOG gasoline rates are 56% of EMFAC2011 year 2014 rates. This is for light- and medium-duty vehciles traveling at 30 mph for Bay Area

Notes and References:

1. Emissions were developed using EMFAC2011 for fleet mix in 2014 assuming 10,000 AADT and includes impacts from diesel and gasoline vehicle exhaust, brake and tire wear, and resuspended dust.
2. Roadways were modeled using ~~CALINE4~~ Cal3qhcr air dispersion model assuming a source length of one kilometer. Meteorological data used to estimate the screening values are noted at the bottom of the "Results" box.
3. Cancer risks were estimated for 70 year lifetime exposure starting in 2014 that includes sensitivity values for early life exposures and OEHHA toxicity values adopted in 2013.

Attachment 5: Stationary Source Screening Calculations

Table B: Stationary Sources within 1,000 feet of Receptor that say "Contact District Staff"

Table B Section 1: Requestor fills out these columns based on Google Earth data | Table B Section 2: BAAQMD returns form with additional information in these columns as needed

Distance from Receptor (feet)	Plant # or Gas Dispensary #	Facility Name	Street Address	2011 Screening Level Cancer Risk (1)	2011 Screening Level Hazard Index (1)	2011 Screening Level PM2.5 (1)	Adjusted 2015 Cancer Risk	Source Type	Distance Multiplier	Cancer Risk at Receptor	PM2.5 Level at Receptor	Comments
140	14711	Verizon Business (Generator)	1999 Harrison Street	19.69, used beta cal = 5.69	0.007, used beta cal =	0.009, used beta cal = 0.007		Generator	0.58	9.16	0.00	consider using attached emissions data with beta calculator.
250	011408	Kaiser Permanente	1950 Franklin Street	na	na	na	CLOSED					Closed. No risk
140	19997	Oakland Property, LLC	1999 Harrison Street	no data	no data	no data	17.87	RDF	0.54	3.68	0.00	
150	20248	CIM Group Properties	1901 Harrison Street	no data, used beta cal = 28.2	no data, used beta cal = 0.00	no data, used beta cal = 0.0079		Generator	0.60	14.08	0.02	consider using attached emissions data with beta calculator.
250ft (roof)	14579	Pacific Bell and Electric	1919 Webster Street	28.99, used beta cal = 9.47	0.01, used beta cal =	0.012, used beta cal = 0.007		Generator	0.81	1.70	0.00	
500	08332	Kaiser Foundation Health Plan	410 19th Street	na	na	na						Closed. No risk
670	18579	Douglas Fielding Electric	1721 Webster Street	No Data	No Data	No Data						Closed. No risk
870	14682	AC Transit General Office	1600 Franklin Street	45.12	0.016	0.079	77.68	Generator	0.39	8.68	0.01	consider using attached emissions data with beta calculator.
900	13494	Pacific Bell/AT&T	1647 Franklin Street	516.64, used beta cal = 67.6	0.183, used beta cal = 0.002	0.459, used beta cal = 0.06		Generator	0.39	8.68	0.00	consider using attached emissions data with beta calculator.
1000	19614	Oakland Center 21	2101 Webster	84.7	0.018	0.018	76.16		0.04	8.05	0.00	
400	18668	AT&T Corp	444 20th St west	69.84, used beta cal = 4.65	0.018	0.015		Generator	0.58	0.71	0.00	

Plant 18668

Standby Emergency Generator Impacts

Rating:

Operating Hours per Unit:

Load

Units

Standby Emergency Generator Emissions **(PER UNIT)**

Criteria Pollutants

	ROG	NOX	CO	SOX	PM10	PM2.5	CO2e
Average annual lbs/day					0.003	0.003	

from BAAQMD report for Plant 20248

Community Risk

		Worst Location		
Cancer Risk at Source =	4.45E-06			
at closest unit and constr. MEI		7.120E-07	400ft	
Annual PM2.5 at Source	0.0059			
at closest unit and constr. MEI		0.000942255		

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: JUN 8, 2017

DETAIL POLLUTANTS - ABATED

MOST RECENT P/O APPROVED (2017)

AT&T Corp (P# 18668)

S# SOURCE NAME

MATERIAL SOURCE CODE

THROUGHPUT DATE POLLUTANT CODE LBS/DAY

---

1 Standby Emergency Diesel Generator Set

C22BG098

Benzene 41 1.84E-04

Formaldehyde 124 1.52E-05

Organics (other, including 990 1.09E-03

Arsenic (all) 1030 1.60E-07

Beryllium (all) pollutant 1040 9.41E-08

Cadmium 1070 4.01E-07

Chromium (hexavalent) 1095 8.30E-09

Lead (all) pollutant 1140 3.40E-07

Manganese 1160 5.34E-07

Nickel pollutant 1180 6.49E-06

Mercury (all) pollutant 1190 1.13E-07

Diesel Engine Exhaust Part 1350 3.05E-03

PAH's (non-speciated) 1840 8.47E-07

Nitrous Oxide (N2O) 2030 4.94E-05

Nitrogen Oxides (part not 2990 1.43E-01

Sulfur Dioxide (SO2) 3990 6.02E-05

Carbon Monoxide (CO) pollu 4990 1.13E-01

Carbon Dioxide, non-biogen 6960 6.17E+00

Methane (CH4) 6970 2.47E-04

Plant 14711

Standby Emergency Generator Impacts

Rating:

Operating Hours per Unit:

Load

Units

Standby Emergency Generator Emissions **(PER UNIT)**

Criteria Pollutants

ROG	NOX	CO	SOX	PM10	PM2.5	CO2e
Average annual lbs/day				0.004	0.004	

from BAAQMD report for Plant 20248

Community Risk

		Worst Location	
Cancer Risk at Source =	5.47E-06		
at closest unit and constr. MEI		1.696E-06	250ft
Annual PM2.5 at Source	0.0072		
at closest unit and constr. MEI		0.002244613	

S# SOURCE NAME

MATERIAL SOURCE CODE

THROUGHPUT DATE POLLUTANT CODE LBS/DAY

---

1 Diesel Engine, Hercules model 400090203, emergency standby

C2250098

Benzene 41 3.90E-04
Formaldehyde 124 3.23E-05
Organics (other, including 990 1.89E-02
Arsenic (all) 1030 3.40E-07
Beryllium (all) pollutant 1040 1.99E-07
Cadmium 1070 8.50E-07
Chromium (hexavalent) 1095 1.76E-08
Lead (all) pollutant 1140 7.21E-07
Manganese 1160 1.13E-06
Nickel pollutant 1180 1.38E-05
Mercury (all) pollutant 1190 2.40E-07
Diesel Engine Exhaust Part 1350 3.75E-03
PAH's (non-speciated) 1840 1.79E-06
Nitrous Oxide (N2O) 2030 1.05E-04
Nitrogen Oxides (part not 2990 2.75E-01
Sulfur Dioxide (SO2) 3990 1.28E-04
Carbon Monoxide (CO) pollu 4990 5.98E-02
Carbon Dioxide, non-biogen 6960 1.31E+01
Methane (CH4) 6970 5.23E-04

Plant 14711

Standby Emergency Generator Impacts

Rating:

Operating Hours per Unit:

Load

Units

Standby Emergency Generator Emissions **(PER UNIT)**

Criteria Pollutants

ROG	NOX	CO	SOX	PM10	PM2.5	CO2e
Average annual lbs/day				0.004	0.004	

from BAAQMD report for Plant 20248

Community Risk

		Worst Location	
Cancer Risk at Source =	5.49E-06		
at closest unit and constr. MEI		3.182E-06	140ft
Annual PM2.5 at Source	0.0073		
at closest unit and constr. MEI		0.004210798	

`

DETAIL POLLUTANTS - ABATED

MOST RECENT P/O APPROVED (2017)

Verizon Business - OKMFCA (P# 14711)

S# SOURCE NAME

MATERIAL SOURCE CODE

THROUGHPUT DATE POLLUTANT CODE LBS/DAY

---

1 Diesel Engine, Caterpillar model 3406C, emergency standby

C22AG098

Benzene 41 5.51E-04
Formaldehyde 124 4.56E-05
Organics (other, including 990 2.45E-02
Arsenic (all) 1030 4.80E-07
Beryllium (all) pollutant 1040 2.81E-07
Cadmium 1070 1.20E-06
Chromium (hexavalent) 1095 2.48E-08
Lead (all) pollutant 1140 1.02E-06
Manganese 1160 1.60E-06
Nickel pollutant 1180 1.94E-05
Mercury (all) pollutant 1190 3.39E-07
Diesel Engine Exhaust Part 1350 3.76E-03
PAH's (non-speciated) 1840 2.53E-06
Nitrous Oxide (N2O) 2030 1.48E-04
Nitrogen Oxides (part not 2990 1.73E-01
Sulfur Dioxide (SO2) 3990 1.80E-04
Carbon Monoxide (CO) pollu 4990 2.13E-01
Carbon Dioxide, non-biogen 6960 1.85E+01
Methane (CH4) 6970 7.38E-04

Plant 1394

Standby Emergency Generator Impacts

Rating:

Operating Hours per Unit:

Load

Units

Standby Emergency Generator Emissions **(PER UNIT)**

Criteria Pollutants

	ROG	NOX	CO	PM10	PM2.5
Average annual lbs/day				0.046	0.046

from BAAQMD report for Plant 20248

Community Risk

		Worst Location	
Cancer Risk at Source =	6.76E-05		
at closest unit and constr. MEI		3.378E-06	900ft
Annual PM2.5 at Source	0.0894		
at closest unit and constr. MEI		0.004469918	

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: JAN 23, 2017

DETAIL POLLUTANTS - ABATED

MOST RECENT P/O APPROVED (2017)

CIM Group Properties (P# 20248)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: JAN 23, 2017

DETAIL POLLUTANTS - ABATED

MOST RECENT P/O APPROVED (2017)

Pacific Bell (P# 13494)

S# SOI James Reyff

MATERIAL SOURCE CODE

THROU 707-794-0400x24

----

1 Standby Generator

C22BG098

1940 Webster Street

Formaldehyde	124	1.81E-05
Organics (other, including	990	1.06E-02
Arsenic (all)	1030	1.91E-07
Beryllium (all) pollutant	1040	1.12E-07
Cadmium	1070	4.77E-07
Chromium (hexavalent)	1095	9.86E-09
Lead (all) pollutant	1140	4.04E-07
Manganese	1160	6.35E-07
Nickel pollutant	1180	7.71E-06
Mercury (all) pollutant	1190	1.35E-07
Diesel Engine Exhaust Part	1350	2.10E-03
PAH's (non-speciated)	1840	1.01E-06
Nitrous Oxide (N2O)	2030	5.87E-05
Nitrogen Oxides (part not	2990	1.54E-01
Sulfur Dioxide (SO2)	3990	7.15E-05
Beryllium (all) pollutant	1040	6.46E-07
Cadmium	1070	2.75E-06
Chromium (hexavalent)	1095	5.70E-08
Lead (all) pollutant	1140	2.34E-06
Manganese	1160	3.66E-06
Nickel pollutant	1180	4.45E-05
Mercury (all) pollutant	1190	7.78E-07
Diesel Engine Exhaust Part	1350	1.22E-02
PAH's (non-speciated)	1840	5.81E-06
Nitrous Oxide (N2O)	2030	3.39E-04
Nitrogen Oxides (part not	2990	8.90E-01
Sulfur Dioxide (SO2)	3990	4.13E-04
Carbon Monoxide (CO) pollu	4990	1.94E-01
Carbon Dioxide, non-biogen	6960	4.24E+01
Methane (CH4)	6970	1.69E-03

3 Standby Generator

C22BG098

Benzene	41	2.26E-03
Formaldehyde	124	1.87E-04
Organics (other, including	990	1.09E-01
Arsenic (all)	1030	1.97E-06
Beryllium (all) pollutant	1040	1.15E-06
Cadmium	1070	4.92E-06
Chromium (hexavalent)	1095	1.02E-07
Lead (all) pollutant	1140	4.17E-06
Manganese	1160	6.55E-06
Nickel pollutant	1180	7.96E-05
Mercury (all) pollutant	1190	1.39E-06
Diesel Engine Exhaust Part	1350	2.17E-02
PAH's (non-speciated)	1840	1.04E-05
Nitrous Oxide (N2O)	2030	6.05E-04
Nitrogen Oxides (part not	2990	1.59E+00
Sulfur Dioxide (SO2)	3990	7.38E-04
Carbon Monoxide (CO) pollu	4990	3.46E-01
Carbon Dioxide, non-biogen	6960	7.57E+01
Methane (CH4)	6970	3.03E-03

4 Standby Generator

C2240098

Benzene	41	1.08E-03
Formaldehyde	124	8.91E-05
Organics (other, including	990	5.20E-02
Arsenic (all)	1030	9.38E-07
Beryllium (all) pollutant	1040	5.50E-07
Cadmium	1070	2.34E-06
Chromium (hexavalent)	1095	4.85E-08
Lead (all) pollutant	1140	1.99E-06
Manganese	1160	3.12E-06
Nickel pollutant	1180	3.79E-05
Mercury (all) pollutant	1190	6.63E-07
Diesel Engine Exhaust Part	1350	1.03E-02
PAH's (non-speciated)	1840	4.95E-06
Nitrous Oxide (N2O)	2030	2.88E-04
Nitrogen Oxides (part not	2990	7.58E-01
Sulfur Dioxide (SO2)	3990	3.52E-04
Carbon Monoxide (CO) pollu	4990	1.65E-01
Carbon Dioxide, non-biogen	6960	3.61E+01
Methane (CH4)	6970	1.44E-03

PLANT TOTAL:

lbs/day	Pollutant
4.20E-06	Arsenic (all) (1030)
4.82E-03	Benzene (41)
2.46E-06	Beryllium (all) pollutant (1040)
1.05E-05	Cadmium (1070)
1.61E+02	Carbon Dioxide, non-biogenic CO2 (6960)
7.38E-01	Carbon Monoxide (CO) pollutant (4990)
2.17E-07	Chromium (hexavalent) (1095)
4.63E-02	Diesel Engine Exhaust Particulate Matter (1350)
3.99E-04	Formaldehyde (124)
8.90E-06	Lead (all) pollutant (1140)
1.40E-05	Manganese (1160)
2.97E-06	Mercury (all) pollutant (1190)
6.45E-03	Methane (CH4) (6970)
1.70E-04	Nickel pollutant (1180)
3.39E+00	Nitrogen Oxides (part not spec elsewhere) (2990)
1.29E-03	Nitrous Oxide (N2O) (2030)
2.33E-01	Organics (other, including CH4) (990)
2.21E-05	PAH's (non-speciated) (1840)
1.57E-03	Sulfur Dioxide (SO2) (3990)

Plant 20248									BAY AREA AIR QUALITY MANAGEMENT DISTRICT Printed: JAN 23,
Standby Emergency Generator Impacts									DETAIL POLLUTANTS - ABATED
									MOST RECENT P/O APPROVED (2017)
Rating:									
									CIM Group Properties (P# 20248)
Operating Hours per Unit:									
									S# SOUR James Reyff
Load									MATERIAL SOURCE CODE
	Standby Emergency Generator Emissions **(PER UNIT)**								THROUG 707-794-0400x24
Units	Criteria Pollutants								----------
	ROG	**NOX**	**CO**	**SOX**	**PM10**	**PM2.5**	**CO2e**		1 Emergency Standby Diesel Generator Set
									C22AG098
									1940 Webster Street
									Arsenic (all) 1030 2.54E-07
									Beryllium (all) pollutant 1040 1.49E-07
									Cadmium 1070 6.36E-07
									Chromium (hexavalent) 1095 1.32E-08
Average annual lbs/day					0.019	0.019			Lead (all) pollutant 1140 5.39E-07
from BAAQMD report for Plant 20248									Manganese 1160 8.46E-07
Community Risk									Nickel pollutant 1180 1.03E-05
		Worst Location							Mercury (all) pollutant 1190 1.80E-07
Cancer Risk at Source =	2.82E-05								Diesel Engine Exhaust Part 1350 1.93E-02
at closest unit and constr. MEI		1.408E-05	150ft						PAH's (non-speciated) 1840 1.34E-06
									Nitrous Oxide (N2O) 2030 7.82E-05
Annual PM2.5 at Source	0.0373								Nitrogen Oxides (part not 2990 2.72E-01
at closest unit and constr. MEI		0.018632703							Sulfur Dioxide (SO2) 3990 9.53E-05
									Carbon Monoxide (CO) pollu 4990 5.86E-02
									Carbon Dioxide, non-biogen 6960 9.78E+00

Refined Stationary Source Modeling

1700 Webster Street, Oakland, CA - AERMOD Modeling Parameters
Off-Site Project Emergency Generator (Plant No. 20248)

DPM Emission Rates			
	Annual	DPM Emissions	
	Operation	Ave. Daily*	Annual*
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	-	0.0193	7.04

* From BAAQMD emission inventory for Plant No. 20248

** Calculated based on average daily emissions and 365 days per year.

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various - minimum distance to generator = 35 feet	
Receptor Spacing	variable - in residential areas	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	26	6 ft stack on 20 foot building
Stack Diameter (ft)	0.5	
Stack Exit Velocity (ft/sec)*	164	
Exhaust Temperature (F)*	656	
Annual Emission Rate (lb/year)	7.04	
Hourly Emission Rate (lb/hr)	8.04E-04	

* BAAQMD default generator parameters

1940 Webster Street, Oakland, CA - DPM Cancer Risks at Project Site
Off-Site Project Emergency Generator (Plant No. 20248)
Off-Site Residential Receptors

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

MEI Cancer Risk From: Off-Site Project Emergency Generator (Plant No. 20248)
5th Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.00143	0.02
2	1 - 2	10	0.00143	0.47
14	3 - 16	3	0.00143	0.52
14	17 - 30	1	0.00143	0.06
Total Increased Cancer Risk				**1.06**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
Off-Site Project Emergency Generator (Plant No. 20248)

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
2nd	5.4	0.00143	1.06
3rd	8.4	0.00238	1.77
4th	11.5	0.00373	2.78
5th	14.6	0.00376	2.80
6th	17.8	0.00288	2.14

Attachment 6: On-site and Off-Site Project Generator Risk Modeling

1940 Webster							
Standby Emergency Generator Impacts							
Rating:	230	kW					
	354	HP					
Operating Hours per Unit:	1	hours/day					
	50	hours/year					
Load	0.74	from CARB OFFROAD					
	Standby Emergency Generator Emissions **(PER UNIT)**						
Units	Criteria Pollutants						
	ROG	**NOX**	**CO**	**SOX**	**PM10**	**PM2.5**	**CO2e**
tons/yr (from CalEEMod)	**0.01**	**0.04**	**0.04**		**0.0021**	**0.0021**	
metric tons/yr	—	—	—	—	—	—	6
g/HP-hr	*0.62*	*2.05*	*2.05*	*0.00*	*0.110*	*0.110*	
lbs/hr	0.48	1.60	1.60	0.00	0.086	0.086	
lbs/yr	24.00	80.00	80.00	0.00	4.280	4.280	
Average annual lbs/day	0.07	0.22	0.22	0.00	0.012	0.012	
Community Risk							
		Worst Location					
Cancer Risk at Source =	1.71E-05						
at closest unit and constr. MEI		1.711E-05	50ft				
			130 ft	to 10 in one million			
		2.74E-06	400ft	closest Sensitive Receptor			
Annual PM2.5 at Source	0.0226						
at closest unit and constr. MEI		0.0226412					
		0.003622592	400ft	closest Sensitive Receptor			

1940 Webster Street, Oakland, CA - AERMOD Modeling Parameters
On-Site Project Emergency Generator

DPM Emission Rates			
	Annual Operation	DPM Emissions	
		Ave. Daily	Annual*
Source Type	(hr)	(lb/day)	(lb/yr)
Generator	50	0.0117	4.28

* Calculated using CalEEMod and engine operation of 50 hours per year.

Modeling Information	
Model:	AERMOD
Source	230 kW Emergency Diesel Generator
Source Type	Point
Receptor Spacing	5.5 meters (18 feet) in residential areas
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data
Point Source Stack Parameters	
Generator engine size (hp)*	354
Stack Height (ft)	10
Stack Diameter (ft)*	0.5
Stack Exit Flow Rate (acfm)*	1,176
Stack Exit Velocity (ft/sec)	99.8
Exhaust Temperature (F)*	1,110
Annual Emission Rate (lb/year)	4.28
Hourly Emission Rate (lb/hr)	4.89E-04

* Based on manufacturer information for representative 230 kW generator (Cummins model DSHAD)

1940 Webster Street, Oakland, CA - DPM Cancer Risks at Project Site
On-Site Project Emergency Generator
On-Site Residential Receptors

Cancer Risk Calculation Method

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant/Child			Adult
Age -->	3rd Trimester	0 - <2	2 - <16	16 - 30
Parameter				
ASF	10	10	3	1
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
ED =	0.25	2	14	14
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

MEI Cancer Risk From: On-Site Project Emergency Generator
2nd Floor Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.09023	1.23
2	1 - 2	10	0.09023	29.64
14	3 - 16	3	0.09023	32.66
14	17 - 30	1	0.09023	3.63
Total Increased Cancer Risk				**67.2**

* Third trimester of pregnancy

Maximum Cancer Risk by Floor Level
On-Site Project Emergency Generator

Floor Level	Receptor Height (m)	DPM Annual Conc (ug/m3)	Maximum DPM Cancer Risk (per million)
2nd	5.4	0.09023	67.16
3rd	8.4	0.05957	44.34
4th	11.5	0.01731	12.88
5th	14.6	0.00762	5.67
6th	17.8	0.00376	2.80

Attachment C: Transportation Impact Study

FEHR PEERS

MEMORANDUM

Date: September 1, 2017

To: Bruce Kaplan; Lamphier-Gregory

From: Natalie Chyba and Sam Tabibnia; Fehr & Peers

Subject: 1940 Webster Preliminary Transportation Impact Report

OK17-0201

This memorandum summarizes the vehicle miles travelled (VMT) screening for the proposed 1940 Webster Street development (Project) in Oakland and our initial assessment of vehicle trip generation and preliminary site plan analysis.

We estimate that the proposed 173 residential units and approximately 1,800 square-feet of commercial space would not have a significant impact on VMT.

The Project would generate approximately 190 daily, 39 AM peak hour, and 16 PM peak hour net-new vehicle trips on a typical weekday. Trip generation estimates were developed in accordance with the City of Oakland's *Transportation Impact Review Guidelines* (TIRG, April 2017). According to the guidelines, a detailed Transportation Impact Report (TIR) is required if a project is expected to generate 50 or more peak hour vehicle trips. Since the Project is estimated to generate fewer than 50 net-new peak hour trips, a TIR may not be required. However, the ultimate decision to conduct a TIR and the potential content of that report rests with City of Oakland staff.

The remainder of this memorandum presents our VMT screening, trip generation, and site plan analysis in more detail.

PROJECT DESCRIPTION

The proposed Project is located on the east side of Webster Street between 20th and 19th Streets in Downtown Oakland. The building would consist of 173 apartment units and approximately 1,800 square-feet of commercial space, which this memorandum conservatively assumes to be a restaurant.

The Project proposes to replace an existing two-story building that consists of a walk-in bank and medical offices, as well as the adjacent surface parking lot currently used by bank customers. The Project proposes a one-level, below grade parking garage with 131 parking spaces, accessible through a driveway on Webster Street. In addition, 63 long-term and 12 short-term bicycle spaces would be provided.

VMT SCREENING

On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's California Environmental Quality Act (CEQA) Thresholds of Significance Guidelines related to transportation impacts in order to implement the direction from Senate Bill 743 (Steinberg 2013) to modify local environmental review processes by removing automobile delay, as described solely by level of service (LOS) 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 draft proposed guidance from the Governor's Office of Planning and Research and the City's approach to transportation impact analysis, with adopted plans and policies related to transportation that promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diverse set of land uses. Consistent with the Planning Commission direction and the Senate Bill 743 requirements, the City of Oakland published the revised TIRG on April 14, 2017 to guide the evaluation of the transportation impacts associated with land use development projects.

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 vehicle travel compared to

development located in urban areas, where a higher density of development, a mix of land uses, and non-single occupancy vehicle travel options are available.

Given these travel behavior factors, most of Oakland has lower VMT per capita and VMT per worker ratios than the nine-county San Francisco Bay Area region. Further, within the City of Oakland, some neighborhoods may have lower VMT ratios than others.

VMT Estimate

Neighborhoods within Oakland are expressed geographically in transportation analysis zones, or TAZs, which are used in transportation planning models for transportation analysis and other planning purposes. The Metropolitan Transportation Commission (MTC) Travel Model includes 116 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 neighborhoods.

The MTC Travel Model is a model that assigns all predicted trips within, across, or to/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 particular scenario.

The travel behavior from MTC Travel Model is modeled based on the following inputs:

- Socioeconomic data developed by the Association of Bay Area Governments (ABAG)
- Population data created using the 2000 US Census and modified using the open source PopSyn software
- Zonal accessibility measurements for destinations of interest
- Travel characteristics and vehicle ownership rates derived from the 2000 Bay Area Travel Survey (BATS)
- Observed vehicle counts and transit boardings

The daily VMT output from the MTC Travel Model for residential and office 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 of the VMT for an individual resident or employee 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. All the stops and trips within her day form her "tour". The tour-based approach would add up the total number of miles driven over the course of her tour and assign it as her daily VMT.

Based on the MTC Travel Model, the regional average daily VMT per capita is 15.0 under 2020 conditions and 13.8 under 2040 conditions.

Thresholds of Significance for VMT

According to the City of Oakland's latest TIRG, the following are thresholds of significance related to substantial additional VMT:

- For residential projects, a project would cause substantial additional VMT if it exceeds existing regional household VMT per capita minus 15-percent.
- For office projects, a project would cause substantial additional VMT if it exceeds the existing regional VMT per worker minus 15-percent.
- For retail projects, a project would cause substantial additional VMT if it results in a net increase in total VMT.

Screening Criteria

VMT impacts would 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 one-half mile of a Major Transit Corridor or Stop[1] 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 more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site),
    - and is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the MTC).

Impact Analysis

The proposed Project satisfies the Low-VMT Area (#2) and Near Transit Stations (#3) criteria as described below.

Criterion #1: Small Projects

The Project would generate more than 100 vehicle trips per day and therefore does not meet criterion #1.

Criterion #2: Low-VMT Area

Table 1 shows the estimated 2020 and 2040 VMT per capita for TAZ 945, 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 1, the 2020 and 2040 estimated average daily VMT per capita in the project TAZ is less than the regional averages minus 15-percent.

According to the TIRG, commercial space less than 80,000 square-feet is considered local serving and is not expected to contribute to an increase in VMT. Therefore, it is presumed that the proposed Project would not result in substantial additional VMT and project impacts with respect to VMT would be less than significant.

[1] "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.

TABLE 1: DAILY VEHICLE MILES TRAVELED PER CAPITA

Land Use	Bay Area				TAZ 945	
	2020		2040			
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%	2020	2040
Residential (VMT per Capita)1	15.0	12.8	13.8	11.7	5.3	4.5

1. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita and accessed in August 2017.

Source: Fehr & Peers, 2017.

Criterion #3: Near Transit Stations

The Project would be located about 0.2 miles from the 19th Street BART Station and within 0.5 miles of frequent bus service along Broadway (Route 51A with 10-minute peak headways), and Thomas L. Berkeley Way (20th Street) (Routes 72/72M/72R with 10- to 12-minute peak headways, and Route 6 with 10-minute peak headways). The Project meets the three conditions necessary to satisfy Criterion #3:

- The proposed Project would have an FAR greater than 0.75.
- The Project would include 131 parking spaces for Project residents, which corresponds to 0.76 parking spaces per unit, and no commercial parking. The Project would not designate any spaces for Project visitors or retail employees. The City of Oakland *Planning Code* (Section 17.116.060) has no parking minimum requirement and allows a maximum of 1.25 spaces per unit for multi-family residential developments in the CBD-C zone. The number of parking spaces provided by the proposed Project would be below the maximum parking supply allowed by the *Planning Code*. Therefore, the Project would not provide more parking for use by residents, customers, or employees than other typical nearby uses, nor would it provide more parking than required by City Code.
- The Project is located within the Downtown Priority Development Area (PDA) as defined by Plan Bay Area, and is therefore consistent with the region's Sustainable Communities Strategy.

VMT Screening Conclusion

The proposed Project would satisfy the Low-VMT Area (#2) and the Near Transit Stations (#3) criteria and is therefore presumed to have a less than significant impact on VMT.

PROJECT TRIP GENERATION

Trip generation is the process of estimating the number of vehicles that would likely access the Project on any given day. Trip generation data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual* (Ninth Edition) was used as a starting point to estimate the vehicle trip generation. The existing site's trip generation is applied as a reduction to the trip generation estimates of the Project. **Table 2** summarizes the trip generation for the proposed Project.

The ITE data is based on data collected at mostly single-use suburban sites where the automobile is often the only travel mode. However, the Project site is in a dense, mixed-use urban environment where many trips are walk, bike, or transit trips. Since the proposed Project is about 0.2 miles from the 19th Street BART Station, the City of Oakland's TIRG recommends a 46.9-percent reduction from the ITE-based trip generation to account for non-automobile trips. This reduction is based on 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 areas less than 0.5-miles from a BART Station is about 46.9-percent.

Trip Generation for the residential land use was estimated using the ITE land use category "Apartments" (land use code 201). The commercial land use was estimated using the ITE land use category "High-Turnover (Sit-Down) Restaurant" (land use code 932). Exact uses for the commercial component of the Project have not been determined; this analysis conservatively assumes that the commercial component will be a restaurant. Trip generation from existing land uses was estimated using the ITE land use category "Walk-In Bank" (land use code 911) and land use category "Medical-Office Building" (land use code 720).

Pass-by trips are trips attracted to a site from adjacent roadways as an intermediate stop on the way to a final destination. Pass-by trips alter travel patterns in the immediate study area, but do not add new vehicle trips to the roadway network, and should therefore be excluded from trip generation estimates. Pass-by rates for the proposed restaurant and existing bank were estimated based on data provided in the *Trip Generation Handbook* (Third Edition).

As summarized in Table 2**,** the net trip generation for the proposed development is approximately 190 daily, 39 AM peak hour, and 16 PM peak hour trips.

TABLE 2: VEHICLE TRIP GENERATION

Land Use	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Proposed Project Trip Generation								
Apartments[2]	173 DU	1,180	18	71	89	73	40	113
High-Turnover (Sit-Down) Restaurant[3]	1.8 KSF	230	11	9	20	11	7	18
Proposed Project Raw Trip Generation		***1,410***	***29***	***80***	***109***	***84***	***47***	***131***
Pass-By Trips - Restaurant (21% Daily, 43% PM)[4]		*-50*	*--*	*--*	*--*	*-5*	*-3*	*-8*
Subtotal		***1,360***	***29***	***80***	***109***	***79***	***44***	***123***
Non-Auto Adjustment[5]		*-640*	*-14*	*-37*	*-51*	*-37*	*-21*	*-58*
Proposed Project Vehicle Trip Generation		***720***	***15***	***43***	***58***	***42***	***23***	***65***
Existing Trip Generation								
Walk-In Bank[6]	6.0 KSF[7]	590	--	--	--	32	41	73
Medical-Office Building[8]	15.0 KSF[7]	550	28	8	36	15	39	54
Existing Raw Trip Generation		***1,140***	***28***	***8***	***36***	***47***	***80***	***127***
Pass-By Trips - Bank (24% Daily, 47% PM)[9]		*-140*	*--*	*--*	*--*	*-15*	*-19*	*-34*
Subtotal		***1,000***	***28***	***8***	***36***	***32***	***61***	***93***
Non-Auto Adjustment[5]		*-470*	*-13*	*-4*	*-17*	*-15*	*-29*	*-44*
Existing Vehicle Trip Generation		***530***	***15***	***4***	***19***	***17***	***32***	***49***
Net-New Vehicle Trip Generation		***190***	***0***	***39***	***39***	***25***	***-9***	***16***

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):

Daily: T = 6.06*(X)+123.56
AM Peak Hour: T = 0.49*(X)+3.73 (20% in, 80% out)
PM Peak Hour: T = 0.55*(X)+17.65 (65% in, 35% out)

3. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover (Sit-Down) Restaurant):
   Daily: T = 127.15*(X)
   AM Peak Hour: T = 10.81*(X) (55% in, 45% out)
   PM Peak Hour: T = 9.85*(X) (60% in, 40% out)
4. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 932 is 43%. Half (21%) is applied to the daily trips.
5. The 46.9% reduction is based on the City of Oakland's *Transportation Impact Review Guidelines* for development in an urban environment within 0.5 miles of a BART Station.
6. ITE Trip Generation (9th Edition) land use category 911 (Walk-In Bank):
   Daily: (PM Peak Hour Trips)*8
   No daily rates are provided in ITE. The bank is open 8 hours on weekdays. This analysis assumes each hour generates the same number of trips as the PM peak hour.
   AM Peak Hour: The bank is closed during the AM peak period (7:00AM-9:00AM)
   PM Peak Hour: T = 12.13*(X) (44% in, 56% out)
7. Existing land uses' square footage is approximated based on site visits and information provided by the applicant.
8. ITE Trip Generation (9th Edition) land use category 720 (Medical-Office Building):
   Daily: T = 36.1*(X)
   AM Peak Hour: T = 2.39*(X) (79% in, 21% out)
   PM Peak Hour: T = 3.57*(X) (28% in, 72% out)
9. PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition) data for Drive-In Banks. The weekday PM peak hour average pass-by rates for land use category 912 is 47%. Half (24%) is applied to the daily trips.

Source: Fehr & Peers, 2017.

SITE PLAN REVIEW

This section evaluates access and circulation of all travel modes for the proposed Project, based on the site plan dated June 8, 2017.

Vehicle Access and On-Site Circulation

Residents would access the site through a driveway on Webster Street, about 300 feet north of 19th Street. The driveway would provide access to a secured lower-level parking garage, providing 131 parking spaces, consisting of 127 three-tiered mechanical lift parking spaces, one car-share space, and three ADA spaces. The parking garage would provide adequate internal circulation for vehicles, with a 21-foot drive aisle and turnaround space at the end of the driveway.

Project Driveway Sight Distance

The driveway on Webster Street is sloped to provide access to the lower-level parking garage. The grade and width of the driveway may limit sight distance between motorists exiting the driveway and pedestrians on the adjacent sidewalk. Adequate sight distance is defined as a clear line-of-

sight between a motorist 10 feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway.

> **Recommendation 1**: Ensure that the driveway design (width and grade) provide adequate sight distance between pedestrians on the adjacent sidewalk and vehicles exiting the parking garage. If adequate sight distance cannot be provided, install mirrors on both sides of the driveway to aid drivers' and pedestrians' visibility and install flashing lights to alert pedestrians when a vehicle is exiting the driveway.

Vehicles parked on Webster Street on the north side of the driveway may block sight distance between vehicles exiting the driveway and vehicles travelling southbound on Webster Street. The proposed tree on the north side of the driveway may also affect visibility of exiting vehicles if the tree canopy is lower than six feet from the ground.

> **Recommendation 2**: Ensure that on-street parking on the north side of the Project driveway on Webster Street would not restrict sight distance for exiting vehicles by providing at least 10 feet of red curb on north side of the driveway.

Bicycle Parking, Access and On-Site Circulation

Table 3 shows bicycle parking requirements for the Project. The Project would consist of 173 dwelling units and about 1,800 square-feet of commercial space, requiring 46 long-term spaces and 11 short-term spaces. The Project would provide 63 long-term spaces, meeting the *Planning Code* requirements. The Project would provide 12 short-term spaces for use by both the residential and commercial spaces, meeting the requirements for short-term spaces as defined in the *Planning Code*.

The Project would provide long-term bicycle parking for residents in a secured bicycle storage room accessible off Webster Street just north of the Project driveway. The short-term parking would be located on the sidewalk along the building frontage on Webster Street.

TABLE 3: BICYCLE PARKING REQUIREMENTS

Land Use	Size[1]	Long-Term		Short-Term	
		Spaces per Unit[2]	Spaces	Spaces per Unit[2]	Spaces
Apartments	173 DU	1:4 DU	44	1:20 DU	9
Commercial	1.8 KSF	Min. 2	2	Min. 2	2
Total Required Bicycle Spaces			**46**		**11**
Total Bicycle Parking Provided			**63**		**12**
Bicycle Parking Deficit			**Meets Requirements**		**Meets Requirements**

Notes:
1. DU = Dwelling Units; KSF = 1,000 square-feet
2. Based on City of Oakland *Planning Code* Section 17.117.090.

Source: Fehr & Peers, 2017.

Pedestrian Access and On-Site Circulation

Pedestrian access to the residential component of the Project would be provided through a staircase and two elevators in the building lobby. Two additional staircases on the north and south sides of the Project would provide emergency exits for the building. The building lobby would be accessible through the main entrance on Webster Street and through the Project garage. The commercial component of the Project would be accessible through a separate entrance along Webster Street.

The existing sidewalk width of 12 feet meets the City of Oakland *Pedestrian Master Plan* (2012) guidelines for sidewalk widths along arterials. The Project does not propose any changes to adjacent pedestrian facilities, and would continue to maintain the existing 12-foot sidewalk width along the Project frontage on Webster Street.

Transit Access

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

BART provides regional rail service throughout the East Bay and across the Bay. The nearest BART station to project site is the 19th Street BART Station, about 0.2 miles west of the Project. The proposed Project would not modify access between the Project site and the BART Station.

AC Transit is the primary bus service provider in the City of Oakland. AC Transit operates several routes in the vicinity of the Project, with a major transit hub located along Thomas L. Berkeley Way at Broadway approximately 0.3 miles northwest of the Project. The nearest bus stops to the Project are located on 20th Street, east of Webster Street, approximately 300 feet north of the Project. The 33, 611, NL, and 805 routes serve these stops and benches, trash receptacles, and bus signs are provided.

No changes to the bus routes operating in the vicinity of the Project are planned and the proposed Project would not modify access between the Project site and transit facilities.

Parking Requirements

The City of Oakland *Planning Code* (Sections 17.116.060 and 17.116.080) has no minimum parking requirement for both the residential and commercial components of the Project and allows a maximum of 1.25 automobile parking spaces per dwelling unit and a maximum of one space per 300 square-feet of ground floor commercial space. All residential parking must be unbundled and for projects that include between 50 and 200 dwelling units, one car-share space is required. The Project would provide a secured parking garage with a two-way drive aisle and a total of 131 spaces, including 127 three-tiered mechanical lift parking spaces, one surface car-share space, and three ADA spaces.

Table 4 summarizes the required and proposed parking for the Project. The *Planning Code* would limit parking to a maximum of 216 off-street residential parking spaces and 6 off-street commercial parking spaces for the Project. Based on the site plan dated June 8, 2017, the Project would provide 131 spaces (corresponding to 0.76 spaces per unit), meeting Code requirements.

TABLE 4: REQUIRED MAXIMUM AND PROPOSED PARKING

Land Use	Size[1]	Required Parking Supply[2]		Parking Supply	Within Range?
		Minimum	Maximum		
Apartments	173 DU	0	216	131	Yes
Retail	1.8 KSF	0	6	0	Yes
Total		**0**	**222**	**131**	**Yes**

Notes:
1. DU = Dwelling Units; KSF = 1,000 square feet
2. Based on City of Oakland *Planning Code* Sections 17.116.060 and 17.116.080.

Source: Fehr & Peers, 2017.

Loading Requirements

The City of Oakland *Planning Code* Section 17.116.120 specifies loading requirements for residential and commercial land uses. Per Code, the Project is required to provide one loading berth for its residential uses and no loading berths for its commercial uses, as the commercial space is less than 25,000 square-feet. The Project proposes one loading berth to be located in the parking garage, meeting Code requirements.

Please contact Sam or Natalie with questions or comments.

Attachment D: Preliminary Geotechnical Investigation

REVISED
PRELIMINARY GEOTECHNICAL INVESTIGATION
1940 Webster Street
Oakland, California

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REVISED PRELIMINARY GEOTECHNICAL INVESTIGATION
1940 Webster Street
Oakland, California

1.0 INTRODUCTION

This report presents the results of our revised preliminary geotechnical investigation for the proposed development at 1940 Webster Street in Oakland, California. The location of the site is shown on Figure 1. The site is rectangular in shape and measures approximately 170 by 150 feet in plan dimension, as shown on Figure 2. Previously, we performed preliminary geotechnical evaluations for the project and submitted our findings in a letter dated 20 April 2016 and in a report dated 17 June 2016. We understand the proposed development has changed since issuing our previous letter and report. The previous plans included construction of a 12- or 15-story building with two basement levels or a 23-story building at grade.

We understand current plans are to build a seven-story residential building, including a two-story concrete podium and five stories of wood-frame construction. The building will likely be at grade except for deepened parking stacker pits in some locations. The stacker pits will be as deep as 10 feet below the existing ground surface, not including the foundation.

Information regarding structural loads for the proposed building is not yet available. For the purpose of this study, we have assumed the dead plus live loads for the proposed building will be on the order of 140 pounds per square foot (psf) per building story and 40 psf for the roof, based on our experience on similar projects.

2.0 SCOPE OF SERVICES

Our preliminary geotechnical investigation was performed in general accordance with our proposal dated 24 March 2016. The scope of our services consisted of conducting a subsurface exploration, performing engineering analyses, and developing geotechnical design criteria for the proposed development.

Data acquired during our subsurface exploration, laboratory testing results, and engineering analyses were used to develop geotechnical conclusions and recommendations regarding:

- soil and groundwater conditions at the site
- site seismicity and seismic hazards, including evaluation of liquefaction potential

- mitigation of seismic hazards, if appropriate
- appropriate foundation type(s) for the proposed building
- preliminary design criteria for the appropriate foundation type(s)
- estimates of total and differential settlement of new foundations
- floor slabs
- below-grade utilities
- excavation and temporary cut slopes
- site grading, including criteria for fill quality and compaction
- 2016 California Building Code (CBC) seismic design criteria
- corrosion potential of near-surface soil
- construction considerations

Our services also included preparation of a Phase 1 environmental site assessment and an environmental site characterization, the results of which were submitted in separate reports.

3.0 FIELD INVESTIGATION AND LABORATORY TESTING

For this preliminary evaluation, we explored subsurface conditions at the site by drilling three borings, designated B-1 through B-3. Originally, we planned to drill four borings at the site; however, due to access constraints and time limitations, only three of the borings were drilled. Prior to performing our investigation, we obtained a drilling permit from the Alameda County Public Works Agency (ACPWA), notified Underground Service Alert (USA), and retained a private underground utility locating service to check that the boring locations were clear of existing utilities.

3.1 Borings

The three borings, designated B-1 through B-3, were drilled on 6 through 8 April 2016 using a truck-mounted rotary-wash drill rig operated by Pitcher Drilling Company. The approximate locations of the borings are shown on Figure 2. The borings were drilled to about 96½ feet below the existing ground surface (bgs) under the direction of our field engineer who logged the soil encountered and obtained representative samples for visual classification and

laboratory testing. Logs of the borings are presented on Figures A-1 through A-3 in Appendix A. The soil encountered in the borings was classified in accordance with the Classification Chart presented on Figure A-4 in Appendix A.

Soil samples were obtained using two different types of driven split-barrel samplers:

- Sprague & Henwood (S&H) split-barrel sampler with a 3.0-inch outside diameter and 2.5-inch inside diameter, lined with steel tubes with an inside diameter of 2.43 inches
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and 1.5-inch inside diameter, without liners

The sampler types were chosen on the basis of soil type being sampled and desired sample quality for laboratory testing. In general, the S&H sampler was used to obtain samples in cohesive soil and the SPT sampler was used to evaluate the relative density of cohesionless soil.

The SPT and S&H samplers were driven with a 140-pound, above-ground, automatic safety hammer falling 30 inches. The samplers were driven up to 18 inches and the hammer blows required to drive the samplers every six inches of penetration were recorded and are presented on the boring logs. A "blow count" is defined as the number of hammer blows per six inches of penetration or 50 blows for six inches or less of penetration. The blow counts required to drive the S&H and SPT samplers were converted to approximate SPT N-values using factors of 0.7 and 1.2, respectively, to account for sampler type and hammer energy and are shown on the boring logs. The blow counts used for this conversion were 1) the last two blow counts if the sampler was driven more than 12 inches and 2) the last one blow count if the sampler was driven more than six inches but less than 12 inches.

Upon completion, the boreholes were backfilled with grout consisting of cement and water in accordance with the requirements of the ACPWA. The soil cuttings and drilling fluid from the borings were placed in 55-gallon drums which were stored temporarily at the site, tested, and transported off-site for proper disposal.

3.2 Laboratory Testing

Soil samples obtained from the borings were examined in the office to confirm the field classifications and representative samples were selected for geotechnical laboratory testing. Laboratory tests were selected to correlate and evaluate engineering properties of the soil at the site. Samples were tested to measure moisture content, dry density, fines content,

plasticity, shear strength, and consolidation characteristics. Results of the laboratory tests are shown on the boring logs and are included in Appendix B.

3.3 Soil Corrosivity Testing

Corrosive soil can adversely affect underground utilities and below-grade foundations. To measure the corrosion potential of the soil, laboratory testing was performed on a composite sample of material from 0 to 5 feet bgs from borings B-1, B-2, and B-3. The corrosivity of the soil samples was evaluated by Cerco Analytical of Concord, California, using ASTM test methods. The laboratory corrosion test results and corrosivity evaluation are presented in Appendix C.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Site Conditions

The site is bound by Webster Street on the west, a one-story building on the south, a parking garage on the east, and a four-story building on the north. The site is relatively level with ground surface elevations ranging from about 18 feet[1] on the northwest corner of the site to about 22 feet on the southwest and southeast corners. The southern portion of the site is occupied by a two-story bank building and the northern portion by an asphalt-paved parking area. The bank building is at grade; it is not known at this time whether the neighboring buildings have basements.

4.2 Subsurface Conditions

The results of our borings indicate the site is underlain by about 3 to 4½ feet of fill consisting of loose to medium dense sand with variable silt and clay content and medium stiff to stiff clay with variable sand content. The parking lot asphalt pavement was measured at the borings to be about 4 to 5 inches thick and underlain by about 3 to 5 inches of aggregate base.

The fill is underlain by medium dense to very dense sand, clayey sand, silty sand, and sand with silt that extends to depths of about 9½ to 13 feet below existing grade. Beneath the sand is stiff to hard, moderately compressible clay, clay with sand, and sandy clay to the maximum depth explored. The clay is interbedded with occasional layers of sand with variable gravel and clay content. The sand layers are generally dense to very dense except for a 2½-foot thick layer of medium dense clayey sand at a depth of about 29 feet bgs in boring B-1, a 1½-foot-thick

[1] Elevations are referenced to North American Vertical Datum of 1988 (NAVD88) and are based on a topographic survey performed by BKF Engineers, dated 10 March 2016.

layer of loose clayey sand at a depth of about 31½ feet bgs in boring B-1, and a 1-foot-thick layer of medium dense sand with gravel at a depth of about 20 feet bgs in boring B-2.

Boring B-3 was left open overnight so that a relatively stabilized groundwater measurement could be obtained. Groundwater was measured in this boring at a depth of about 13.3 feet bgs one day after start of drilling. We anticipate the groundwater level will be affected by local variations in subsurface conditions and seasonal variations in rainfall. For preliminary design we recommend a design groundwater level of 12 feet bgs.

5.0 REGIONAL SEISMICITY AND FAULTING

The major active faults in the area are the Hayward, San Andreas, San Gregorio, and Calaveras faults. These and other faults of the region are shown on Figure 3. For each of the active faults within 50 kilometers (km), the distance from the site and estimated mean characteristic Moment magnitude[2] (M_w) [2007 Working Group on California Earthquake Probabilities (WGCEP) (2008) and Cao et al. (2003)] are summarized in Table 1.

TABLE 1
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Fault (km)	Direction from Site	Mean Characteristic Moment Magnitude
Total Hayward	5.1	East	7.00
Total Hayward-Rodgers Creek	5.1	East	7.33
Mount Diablo Thrust	21	East	6.70
Total Calaveras	23	East	7.03
N. San Andreas - Peninsula	24	West	7.23
N. San Andreas (1906 event)	24	West	8.05
Green Valley Connected	26	East	6.80
N. San Andreas - North Coast	27	West	7.51
San Gregorio Connected	30	West	7.50
Rodgers Creek	35	Northwest	7.07
Greenville Connected	39	East	7.00
West Napa	40	North	6.70
Monte Vista-Shannon	41	South	6.50
Great Valley 5, Pittsburg Kirby Hills	44	East	6.70

Figure 3 also shows the earthquake epicenters for events with magnitude greater than 5.0 from January 1800 through August 2014. Since 1800, four major earthquakes have been recorded on

[2] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

the San Andreas fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale (Figure 4) occurred east of Monterey Bay on the San Andreas fault (Toppozada and Borchardt 1998). The estimated Moment magnitude, M_w, for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to a M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), a M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The Loma Prieta Earthquake occurred on 17 October 1989, in the Santa Cruz Mountains with a M_w of 6.9, approximately 92 km from the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably a M_w of about 6.5) was reported on the Calaveras fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake (M_w = 6.2). The most recent earthquake to affect the Bay Area occurred on 24 August 2014 and was located on the West Napa fault, approximately 46 kilometers north of the site, with a M_w of 6.0.

The 2014 Working Group for California Earthquake Probabilities (WGCEP) at the U.S. Geologic Survey (USGS) predicted a 72 percent chance of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area in 30 years (WGCEP 2015). More specific estimates of the probabilities for different faults in the Bay Area are presented in Table 2.

TABLE 2
WGCEP (2015) Estimates of 30-Year Probability (2014 to 2043)
of a Magnitude 6.7 or Greater Earthquake

Fault	Probability (percent)
Hayward-Rodgers Creek	32
N. San Andreas	33
Calaveras	25
Green Valley	7
San Gregorio	6
Greenville	6
Mount Diablo Trust	4

6.0 SEISMIC HAZARDS

The site is in a seismically active area and will be subject to strong shaking during a major earthquake on a nearby fault. Strong shaking during an earthquake can result in ground failure such as that associated with soil liquefaction[3], lateral spreading[4], seismic densification[5], and fault rupture. Each of these conditions has been evaluated based on our literature review, field investigation, and studies, and is discussed in this section.

6.1 Fault Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act and no known active or potentially active faults exist on the site. Therefore, we conclude the risk of surface faulting and consequent secondary ground failure is low.

6.2 Liquefaction and Lateral Spreading

When a saturated, cohesionless soil liquefies during an earthquake, it experiences a temporary loss of shear strength due to a transient rise in excess pore water pressure generated by strong ground motion. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures, and sand boils are evidence of excess pore pressure generation and liquefaction. The site borders a liquefaction hazard zone, as designated on a map prepared by the California Geological Survey (CGS), dated 14 February 2003 (Figure 5).

The level of ground shaking used in our liquefaction evaluation was based on the Risk-Target Maximum Considered Earthquake (MCE_R) mapped values. A peak geometric mean ground acceleration (PGA_M) of 0.683g was used in our analyses. This PGA_M was obtained from mapped values specified in the provisions of the 2016 California Building Code (CBC) for the MCE_R, using site class D. We assumed an earthquake magnitude of 7.33, which is the maximum

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[3] Liquefaction is a transformation of soil from a solid to a liquefied state during which saturated soil temporarily loses strength resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits.

[4] 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 blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[5] Seismically-induced densification, also known as differential compaction, is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing differential settlement.

Moment magnitude for the Hayward fault, located 5.1 km from the site, as shown on Table 1. A groundwater level of 13 feet bgs was used in the analyses.

The liquefaction analyses were performed in accordance with the methodology presented in the publication titled Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils prepared by Youd et al. (2001) using the results of the borings drilled at the site. Based on the results of our liquefaction analyses, we preliminarily conclude that one or two thin (each 1 to 2½ feet thick), isolated, and discontinuous cohesionless layers encountered beneath the groundwater level in borings B-1 and B-2 are susceptible to liquefaction during a major earthquake on a nearby fault. These layers occur between depths of about 20 and 33 feet bgs.

We preliminarily estimate ground surface settlements of up to 1 inch could occur at the site as a result of liquefaction during a major earthquake. Because the liquefiable soil does not appear to be continuous across the site and considering the range of calculated settlements, we preliminarily conclude that differential liquefaction-induced settlement equivalent to the total liquefaction-induced settlement (1 inch) could occur at the site.

Since the liquefiable layers encountered at the site are not continuous and the site is relatively level, we conclude the potential for lateral spreading at the site is low.

6.3 Seismic Densification

Seismic densification (also referred to as differential compaction) can occur during strong ground shaking in loose, clean granular deposits above the water table, resulting in ground surface settlement. We evaluated the potential for differential compaction to occur at the site using methodology presented in Tokimatsu and Seed (1984). Based on this method we preliminarily estimate ground surface settlements associated with seismic densification on the order of ¼ inch or less as a result of strong shaking during a major earthquake on a nearby fault.

7.0 DISCUSSION AND CONCLUSIONS

We conclude the planned development is feasible from a geotechnical standpoint. The primary geotechnical concerns for the project are the presence of: 1) undocumented fill at the site, 2) adjacent buildings with unknown basement and foundation conditions, 3) thin layers at the site that have the potential to liquefy and settle during a major earthquake on a nearby fault, and 4) selection of an appropriate foundation system to support anticipated building loads.

Our conclusions and recommendations regarding these and other geotechnical issues are discussed in this section.

7.1 Foundation Design and Settlement

Factors influencing the selection of a safe, economical foundation system with adequate capacities are:

- the presence of undocumented fill at the site
- concerns regarding total and differential settlement if building loads are imposed on the fill and underlying moderately compressible clays
- the anticipated total and differential ground surface settlements resulting from seismically-induced liquefaction and densification

We anticipate the at-grade portions of the ground floor will be underlain by about 3 to 5 feet of fill consisting of clay, silty sand, and clayey sand. It is not known whether the fill was placed in a controlled (compacted) manner. The parking stacker pits will likely be underlain by dense clayey sand, dense silty sand, or very stiff sandy clay. We considered conventional isolated spread footings for support of the building; however, we calculated total static settlements on the order of 2 inches for footings based on the estimated building loads and available subsurface data. This settlement is in addition to the estimated seismically-induced settlement previously discussed; we estimate total static and seismically-induced differential settlements could be on the order of 2 inches between columns, if supported on isolated footings. Therefore, we preliminarily conclude the building should be supported on a mat foundation, provide the estimated settlements discussed below are tolerable; the mat should be rigid enough to reduce differential settlements to a tolerable limit.

Building loads were not available at the time this preliminary report was prepared. For a seven-story concrete and wood-framed structure, we estimate average static (dead plus live) mat pressures will be on the order of 1,000 pounds per square foot (psf). We estimate static settlement of a properly-constructed mat bearing on the existing fill and very stiff clay and dense sand will be on the order of 1½ inches, with up to ¾ inch of differential settlement between building columns, based on an average static mat pressure of 1,000 psf; these settlements do not include the rigidity of the mat. The majority of the settlement is likely to occur during construction. Preliminary recommendations for design of mat foundations are provided in Section 8.2.

7.2 Excavation and Temporary Shoring

We anticipate construction of the proposed parking stacker pits will require excavations extending on the order of 10 to 12 feet below the existing ground surface. Excavations that will be deeper than five feet and will be entered by workers should be shored or sloped, where space permits, in accordance with the Occupational Safety and Health Administration (OSHA) standards (29 CFR Part 1926). The soil below the site consists mainly of sand and clay that can likely be excavated with conventional earth-moving equipment such as large excavators. However, portions of the existing building foundations, grade beams, and possibly elevator pit walls and slab may need hoe-rams or jack hammers to remove them.

The excavation will need to be shored to protect the surrounding improvements. The adjacent 1- to 4-story buildings and parking garage were constructed to the property lines. It is not currently known whether these buildings are supported on shallow or deep foundations. If the buildings are supported on shallow foundations, such as spread footings or mats, bearing above the depth of the proposed excavation, surcharge pressures associated with these buildings will need to be considered in the design of the temporary shoring system, or the buildings will need to be underpinned. Final selection of a temporary shoring system will depend on the foundation conditions of the adjacent buildings and whether these buildings have basements. Recommendations for design of temporary shoring should be provided in the final geotechnical investigation report; potential options for shoring systems are discussed in the remainder of this section.

There are several key considerations in selecting suitable shoring systems. Those we consider of primary concern are:

- protection of surrounding improvements, including buildings, roads, and utilities
- the ability of the shoring system to reduce potential for ground movement
- the ability of the shoring system to minimize the inflow of groundwater and required dewatering
- cost

Several methods of shoring are available; we have qualitatively evaluated the following systems:

- sheet piles
- conventional soldier pile and lagging.

We considered sheet piles, but we judge this system is not appropriate because of: 1) the difficulty of driving them through dense sand layers encountered in the soil; 2) sheet pile installation generates significant vibrations that could densify the medium dense near-surface sand, causing settlement of the ground surface and adjacent offsite improvements such as buildings on shallow foundations, streets, and utilities; and 3) sheet piles are not sufficiently rigid to limit vertical and lateral movements of the adjacent improvements.

For excavations on the order of 10 to 12 feet deep, we judge a soldier pile and lagging system could be used for temporary excavation support. A soldier pile and lagging system usually consists of steel beams and concrete placed in predrilled holes extending below the bottom of the excavation. Drilling of the holes for the soldier piles would require specialty equipment (such as a soil-cement mixing drill rig), casing, or the use of drilling slurry to prevent caving of granular soil layers below the groundwater level. Wood lagging is then placed between the soldier beams as the excavation proceeds.

The type of shoring system should be evaluated by a shoring engineer. Grouted tiebacks or internal bracing may be required to provide lateral support, depending on the final depth of excavation and if any surcharge pressures from adjacent building loads need to be supported. The selection of tiebacks or internal bracing depends on whether encroachment permits can be obtained to drill beneath the adjacent city streets and adjacent properties, if needed. Tiebacks are drilled through the wall adjacent to beams, or internal bracing is used as the excavation proceeds.

Groundwater has been encountered at the site at a depth of about 13.3 feet bgs. We preliminarily conclude the high groundwater level at the site should be assumed to be about 12 feet bgs. If the excavation will extend deeper than 12 feet, dewatering may be required.

7.3 Corrosion Potential

The near surface soil was determined to be corrosive. Below grade improvements, such as foundation and utilities, should be designed for the corrosive conditions encountered at the site. The results of the tests and more specific commentary are presented in Appendix C.

8.0 RECOMMENDATIONS

From a geotechnical standpoint, we conclude the proposed development is feasible. Our preliminary recommendations for earthwork, foundation design, seismic design, and other geotechnical aspects of the project are discussed in this section.

8.1 Earthwork

The site should be prepared and grading performed in accordance with the preliminary recommendations provided in this section.

8.1.1 Site Demolition

All concrete and asphalt pavements and other existing improvements at the site should be removed during site demolition. Any buried remnants of previous buildings and structures that interfere with the construction should be excavated and removed from the site. Underground utilities should be removed to the property line or service connections and properly capped or plugged with concrete. Where existing utility lines will not interfere with the proposed construction, they may be abandoned in place provided the lines are filled with lean concrete or cement grout to the project limits.

Excavations made during site preparation to remove utilities, old foundations, tanks, or other improvements should be filled with controlled density fill or properly compacted engineered fill, as recommended in Section 8.1.4.

From a geotechnical standpoint, concrete and asphalt generated by demolition may be crushed and reused on-site as fill provided it is free of organic material and rocks or lumps greater than three inches in greatest dimension. The acceptability of using crushed asphalt at the site should be verified by the architect. Where crushed asphalt and concrete pavement materials are used as fill, particles between 1-1/2 and 3 inches in greatest dimension should comprise no more than 30 percent of the fill by weight.

8.1.2 Temporary Excavation and Shoring

We anticipate excavations on the site will be made to construct parking stacker pits and to install underground utilities. We anticipate the proposed excavation can be made using conventional earth moving equipment. Removal of existing on-site improvements, including the foundations of the existing building, may require equipment capable of breaking concrete. The excavation contractor should note that previous foundations, building debris, and other obstructions may be encountered during shoring installation and excavation. These obstructions may have to be partially removed before the shoring can be installed.

Excavations deeper than five feet that will be entered by workers should be shored or sloped for safety in accordance with the Occupational Safety and Health Administration (OSHA) standards (29 CFR Part 1926). Inclinations of temporary slopes should not exceed those specified in local, state or federal safety regulations. Unsupported temporary slopes in fill or native sand should be less than 10 feet high and no steeper than 1½:1 (horizontal to vertical); deeper cuts or cuts where there is insufficient space for a sloped excavation should be shored.

Temporary slopes should not be open for an extended period of time. If temporary slopes are open for extended periods of time, exposure to weathering and rain could result in sloughing and erosion. All vehicles and other surcharge loads should be kept at least 10 feet away from the top of temporary slopes. The slopes should be protected from excessive saturation during construction.

We preliminarily recommend temporary cantilever shoring be designed using an active pressure corresponding to equivalent fluid weight of 35 pounds per cubic foot (pcf). If the shoring needs to be designed to resist surcharge pressures from adjacent footings or the excavation is adjacent to improvements sensitive to movements, the shoring should be designed using an at-rest pressure corresponding to an equivalent fluid weight of 55 pcf plus the surcharge pressures from adjacent footings. Additional recommendations for shoring should be provided in the final geotechnical investigation report.

8.1.3 Subgrade Preparation

We recommend areas to receive fill or other improvements, including at-grade portions of the mat, be scarified to a depth of at least 12 inches, moisture-conditioned to above the optimum moisture content, and compacted to at least 95 percent relative compaction.[6]

We preliminarily conclude the mat for the below-grade parking stacker pits may bear on native soil. Although the excavation will generally be above the design groundwater table, the soil at subgrade level will likely be near saturation. To protect the subgrade, we recommend heavy construction equipment (such as scrapers) not be allowed within two feet of subgrade and that final excavation be made with an excavator equipped with a smooth bucket. The soil subgrade should be firm and unyielding, and kept moist until it is covered with fill or other improvements.

8.1.4 Engineered Fill

All fill, including on-site soil, should be free of organic matter or other deleterious or hazardous materials, have a low corrosion potential, contain no rocks, bricks, or lumps larger than four inches in greatest dimension, and have a low expansion potential (defined by a liquid limit of less than 40 and plasticity index lower than 12). Most of the on-site fill and native soil encountered during our investigation can generally be re-used as engineered fill and backfill, provided any oversized debris is removed.

General fill should be placed in lifts not exceeding eight inches in loose thickness, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. However, all clean[7] sand (including native sand and clean sand within the existing fill) and gravel should also be compacted to at least 95 percent relative compaction.

Bulk samples of proposed fill materials should be submitted to the geotechnical engineer for approval at least three business days prior to use at the site.

8.1.5 Utilities

Utility trenches should be excavated a minimum of four inches below the bottom of pipes or conduits and have clearances of at least four inches on both sides. Where necessary, trench excavations should be shored and braced to prevent cave-ins and/or in accordance with safety regulations.

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[6] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

[7] Clean material is defined as material with less than 10 percent fines (material passing the No. 200 sieve) by dry weight of soil.

To provide uniform support, pipes or conduits should be bedded on a minimum of four inches of sand or fine gravel. After pipes and conduits are tested, inspected (if required), and approved, they should be covered to a depth of six inches with sand or fine gravel, which should then be compacted to at least 95 percent relative compaction. The overlying utility trench backfill should be compacted as described above for general fill. Jetting of trench backfill should not be permitted. Special care should be taken when backfilling utility trenches in pavement areas. Poor compaction may cause excessive settlements resulting in damage to the pavement section.

8.2 Mat Foundation

As discussed in Section 7.1, we anticipate the at-grade portions of the ground floor will likely be underlain by up to about 3 to 5 feet of fill consisting of clay, silty sand, and clayey sand. It is not known whether the fill was placed in a controlled (compacted) manner. The parking stacker pits will likely be underlain by dense clayey sand, dense silty sand, or very stiff sandy clay. We preliminarily conclude the building can be supported on a mat bearing on fill, dense sand, or very stiff clay. Where existing fill is present at mat subgrade, we recommend the upper 12 inches of the fill be scarified a depth of 12 inches, moisture conditioned, and recompacted, as recommended in Section 8.1.3, to provide a uniform bearing condition. The mat for the parking stacker pits may bear on native soil provided the subgrade is firm and unyielding.

For design of the mat using the vertical modulus of subgrade reaction method, we preliminarily recommend using an initial vertical modulus of subgrade reaction equal to 8 kips per cubic foot under static loads; this modulus is appropriate for dead plus live mat bearing pressures on the order of 1,000 psf. The structural engineer should design the mat foundation to effectively spread the building loads to limit total and differential settlements.

At the parking pits, the mat should be designed to resist hydrostatic pressure based on the design groundwater level at 12 feet bgs. If the mat will extend below the design groundwater level, we recommend the base and sides of the mat be waterproofed. The waterproofing should be designed by a waterproofing consultant and placed in accordance with the manufacturer's specifications.

If the weight of the building and mat are not sufficient to resist uplift loads, additional uplift resistance may be provided using tiedown anchors. Tiedowns consist of relatively small-diameter, drilled, grout-filled shafts with steel bars or tendons embedded in the grout. We can provide recommendations for tiedowns in the final geotechnical report, if needed.

Lateral forces can be resisted by a combination of passive resistance against the vertical face of the mat foundation and friction along the base of the mat. We preliminarily recommend passive resistance acting on the sides of the mat be calculated using a uniform pressure (rectangular distribution) of 2,000 psf. The upper foot of soil should be ignored in computing passive resistance unless it is confined by a slab or pavement. Friction along the bottom of the mat should be computed using a friction coefficient of 0.30, except where the mat is waterproofed. Where waterproofing is used, the frictional resistance should not exceed 0.15 times the dead load. A lower friction factor may be required if a bentonite-based waterproofing system is used; in this case, the waterproofing manufacturer should be consulted to confirm the friction resistance. These preliminary passive resistance and friction values include a factor of safety of 1.5 and may be used in combination without reduction.

Where the mat is above the design groundwater level, moisture is likely to condense on the underside of the mat. A moisture barrier beneath the mat should be considered if moisture transmission through the mat would be detrimental to its intended use. A typical moisture barrier consists of a capillary moisture break and a water vapor retarder. A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The vapor retarder should meet the requirements for Class C vapor retarders stated in ASTM E1745. The vapor retarder should be placed in accordance with the requirements of ASTM E1643. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder. The particle size of the gravel/crushed rock should meet the gradation requirements presented in Table 3.

TABLE 3
Gradation Requirements for Capillary Moisture Break

Sieve Size	Percentage Passing Sieve
Gravel or Crushed Rock	
1 inch	90 – 100
¾ inch	30 – 100
½ inch	5 – 25
3/8 inch	0 – 6

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and results in excessive vapor transmission through the slab. Therefore, concrete for the floor slab should have a low w/c ratio - less than 0.45. The slab should be properly cured. Before the floor covering is placed, the contractor should check that

the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer's requirements.

We should observe mat subgrade prior to placement of reinforcing steel. The excavation for the mat should be smooth, non-yielding, and free of standing water, debris, and disturbed materials prior to placing concrete. Final recommendations for design of mat foundations and preparation of mat subgrade should be presented in the final geotechnical investigation report.

8.3 Permanent Below-Grade Wall Design

We preliminarily recommend below-grade walls for the parking stacker pits be designed using at-rest pressures corresponding to equivalent fluid weights of 55 pcf above the design groundwater level (12 feet bgs) and 85 pcf below the groundwater level. Walls that are within 10 feet of vehicular traffic should be designed for an additional lateral pressure of 100 psf in the upper 10 feet. In addition, the walls should be designed for surcharge loads associated with the adjacent buildings.

Because the site is in a seismically active area, the design should be checked for static and seismic conditions to evaluate the governing condition. The recommended design pressure for the static condition is presented above. For the seismic condition, the below-grade wall pressure consists of the combination of an active earth pressure and a seismic increment. We preliminarily recommend active earth pressure be calculated using equivalent fluid weights of 35 pcf above the design groundwater level (12 feet bgs) and 80 pcf below the design groundwater level. The seismic increments for the Design Earthquake (DE) should be determined using equivalent fluid weights (triangular distribution) equal to 31 pcf and 16 pcf above and below the design groundwater level, respectively. The walls should be designed for the more critical of at-rest pressures or active plus seismic increment.

To protect against moisture migration, below-grade walls should be waterproofed and water stops should be placed across all construction joints. The waterproofing should be placed directly against the backside of the walls.

The lateral earth pressures given assume the walls are properly backdrained above the water table to prevent the buildup of hydrostatic pressure. One acceptable method for backdraining the walls is to place a prefabricated drainage panel against the back side of the wall. The drainage panel should extend to a perforated pipe at the base of the wall. The pipe should drain to a suitable outlet. We should check the manufacturer's specifications for the proposed drainage panel material to verify it is appropriate for its intended use.

8.4 Seismic Design

Although some potentially liquefiable soil is present at the site, we judge it will occur in thin, isolated, and discontinuous layers. Therefore we preliminarily conclude the site should be classified as a "stiff soil profile" in accordance with the provisions of the 2016 California Building Code (CBC). We preliminarily recommend using the following seismic design parameters in accordance with the 2016 CBC:

- Site Class D
- Risk Targeted Maximum Considered Earthquake (MCE_R) S_S and S_1 of 1.768g and 0.704g, respectively
- Site Coefficients F_a and F_v of 1.0 and 1.5, respectively
- Maximum Considered Earthquake (MCE) spectral response acceleration parameters at short periods, S_{MS}, and at one-second period, S_{M1}, of 1.768g and 1.056g, respectively
- Design Earthquake (DE) spectral response acceleration parameters at short period, S_{DS}, and at one-second period, S_{D1}, of 1.179g and 0.704g, respectively
- PGA_M of 0.683g

9.0 ADDITIONAL GEOTECHNICAL SERVICES

The conclusions and recommendations contained in this report are preliminary and result from limited engineering studies based on our interpretation of the existing geotechnical conditions based on available subsurface data. No additional subsurface exploration was performed as part of our studies. Prior to final design, we should be contacted to prepare a final geotechnical investigation report for the project, which should include drilling additional borings and/or advancing cone penetration tests at the site.

We appreciate the opportunity to provide services on this project. If you have any questions, please call.

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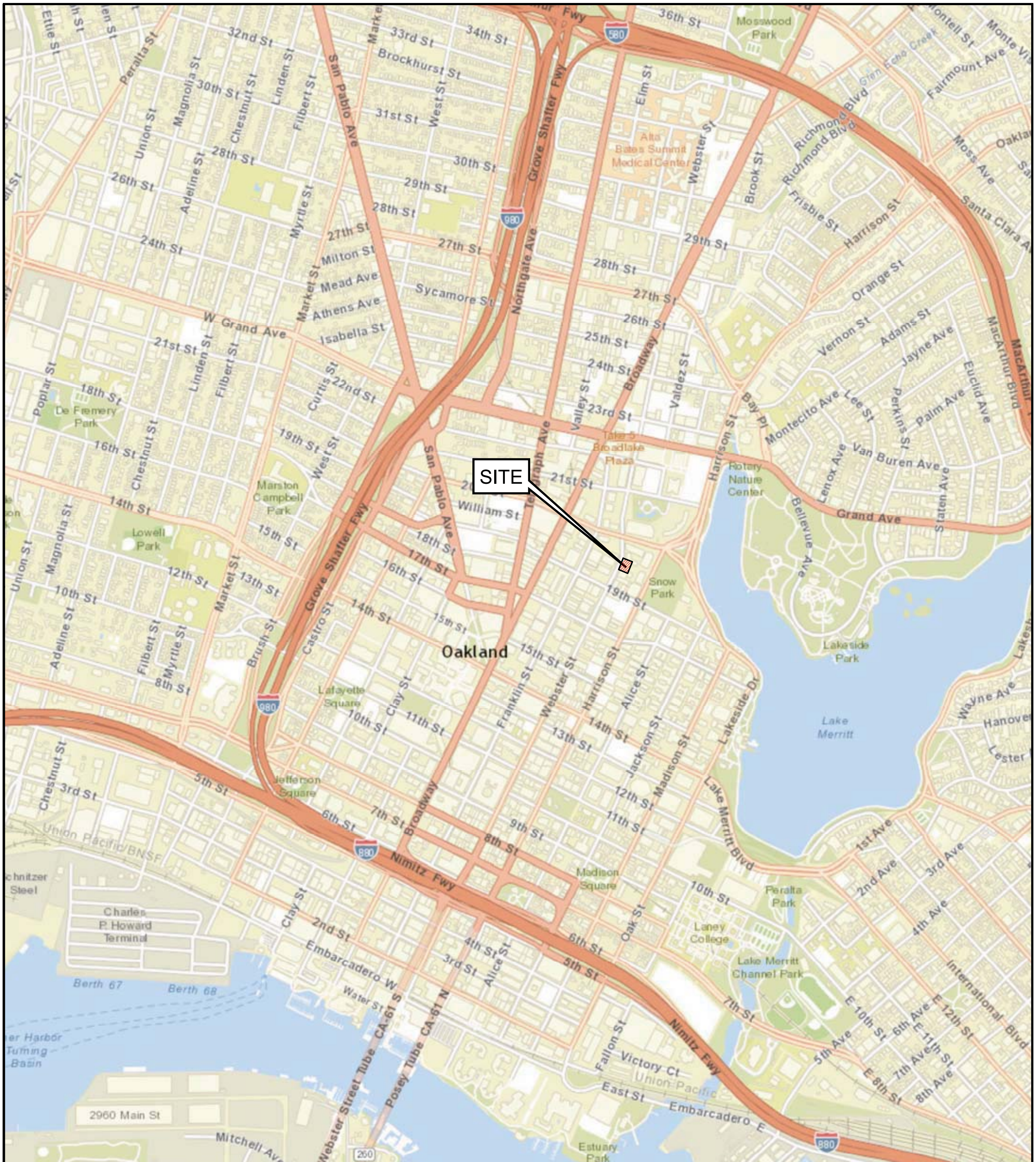
FIGURES



NOTES:

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online.
Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN.

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1940 WEBSTER STREET
Oakland, California

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SITE LOCATION MAP

Date 04/27/17	Project No. 770629701	Figure 1

EXPLANATION

B-1 Approximate location of geotechnical boring by Langan Treadwell Rollo, April 2016

Site Boundary

N

0 40 Feet

Approximate scale

Reference: Nearmap aerial imagery

1940 WEBSTER STREET
Oakland, California

SITE PLAN

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure 2

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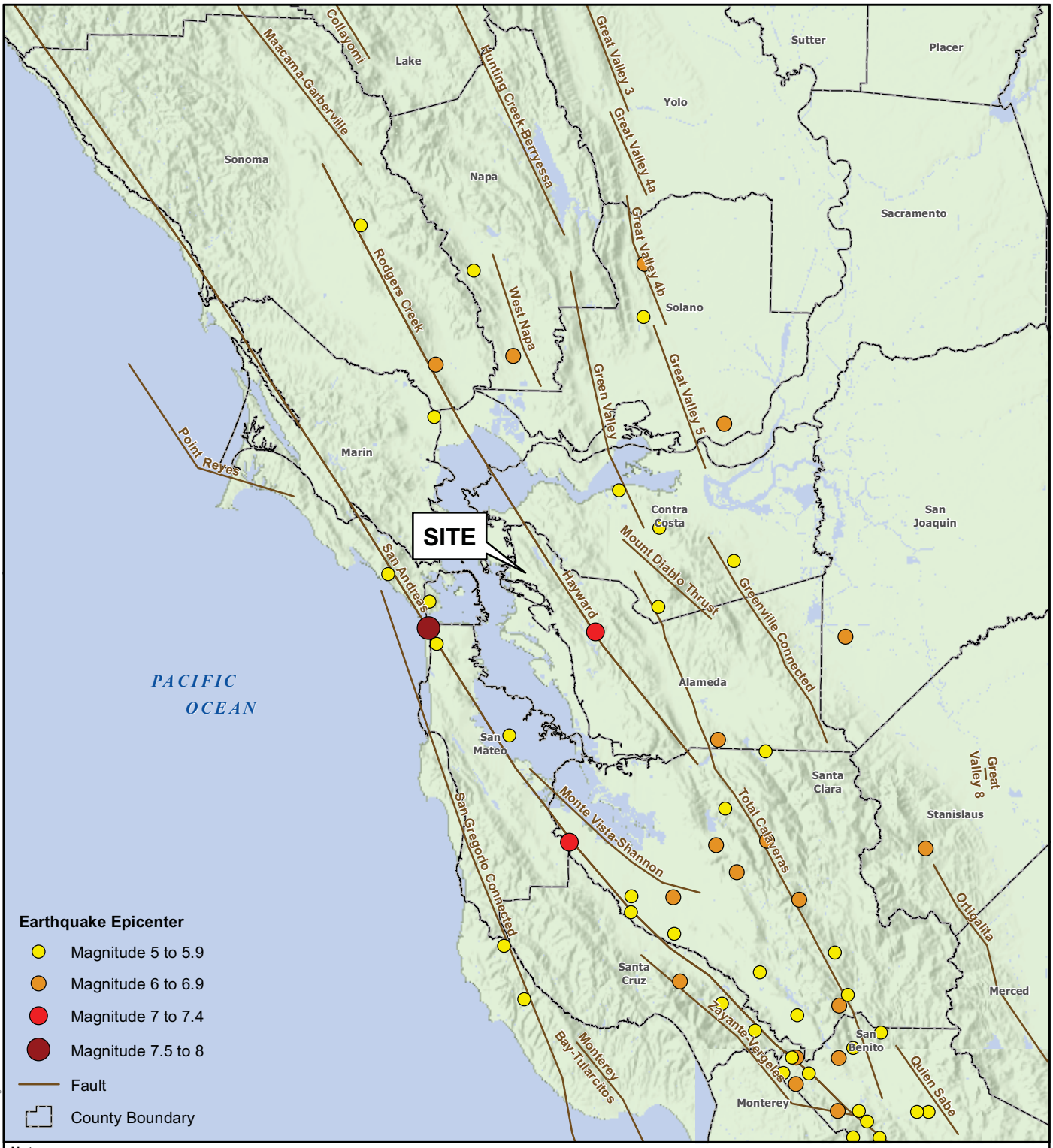

Notes:

1. Quaternary fault data displayed are based on a generalized version of USGS Quaternary Fault and fold database, 2010. For cartographic purposes only.
2. The Earthquake Epicenter (Magnitude) data is provided by the U.S Geological Survey (USGS) and is current through 08/26/2014.
3. Basemap hillshade and County boundaries provided by USGS and California Department of Transportation.
4. Map displayed in California State Coordinate System, California (Teale) Albers, North American Datum of 1983 (NAD83), Meters.

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Miles

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1940 WEBSTER STREET
Oakland, California

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MAP OF MAJOR FAULTS AND EARTHQUAKE EPICENTERS IN THE SAN FRANCISCO BAY AREA

Date 04/27/17	Project No. 770629701	Figure 3

I **Not felt by people, except under especially favorable circumstances. However, dizziness or nausea may be experienced.**
Sometimes birds and animals are uneasy or disturbed. Trees, structures, liquids, bodies of water may sway gently, and doors may swing very slowly.

II **Felt indoors by a few people, especially on upper floors of multi-story buildings, and by sensitive or nervous persons.**
As in Grade I, birds and animals are disturbed, and trees, structures, liquids and bodies of water may sway. Hanging objects swing, especially if they are delicately suspended.

III **Felt indoors by several people, usually as a rapid vibration that may not be recognized as an earthquake at first. Vibration is similar to that of a light, or lightly loaded trucks, or heavy trucks some distance away. Duration may be estimated in some cases.**
Movements may be appreciable on upper levels of tall structures. Standing motor cars may rock slightly.

IV **Felt indoors by many, outdoors by a few. Awakens a few individuals, particularly light sleepers, but frightens no one except those apprehensive from previous experience. Vibration like that due to passing of heavy, or heavily loaded trucks. Sensation like a heavy body striking building, or the falling of heavy objects inside.**
Dishes, windows and doors rattle; glassware and crockery clink and clash. Walls and house frames creak, especially if intensity is in the upper range of this grade. Hanging objects often swing. Liquids in open vessels are disturbed slightly. Stationary automobiles rock noticeably.

V **Felt indoors by practically everyone, outdoors by most people. Direction can often be estimated by those outdoors. Awakens many, or most sleepers. Frightens a few people, with slight excitement; some persons run outdoors.**
Buildings tremble throughout. Dishes and glassware break to some extent. Windows crack in some cases, but not generally. Vases and small or unstable objects overturn in many instances, and a few fall. Hanging objects and doors swing generally or considerably. Pictures knock against walls, or swing out of place. Doors and shutters open or close abruptly. Pendulum clocks stop, or run fast or slow. Small objects move, and furnishings may shift to a slight extent. Small amounts of liquids spill from well-filled open containers. Trees and bushes shake slightly.

VI **Felt by everyone, indoors and outdoors. Awakens all sleepers. Frightens many people; general excitement, and some persons run outdoors.**
Persons move unsteadily. Trees and bushes shake slightly to moderately. Liquids are set in strong motion. Small bells in churches and schools ring. Poorly built buildings may be damaged. Plaster falls in small amounts. Other plaster cracks somewhat. Many dishes and glasses, and a few windows break. Knickknacks, books and pictures fall. Furniture overturns in many instances. Heavy furnishings move.

VII **Frightens everyone. General alarm, and everyone runs outdoors.**
People find it difficult to stand. Persons driving cars notice shaking. Trees and bushes shake moderately to strongly. Waves form on ponds, lakes and streams. Water is muddied. Gravel or sand stream banks cave in. Large church bells ring. Suspended objects quiver. Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary buildings; considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Plaster and some stucco fall. Many windows and some furniture break. Loosened brickwork and tiles shake down. Weak chimneys break at the roofline. Cornices fall from towers and high buildings. Bricks and stones are dislodged. Heavy furniture overturns. Concrete irrigation ditches are considerably damaged.

VIII **General fright, and alarm approaches panic.**
Persons driving cars are disturbed. Trees shake strongly, and branches and trunks break off (especially palm trees). Sand and mud erupts in small amounts. Flow of springs and wells is temporarily and sometimes permanently changed. Dry wells renew flow. Temperatures of spring and well waters varies. Damage slight in brick structures built especially to withstand earthquakes; considerable in ordinary substantial buildings, with some partial collapse; heavy in some wooden houses, with some tumbling down. Panel walls break away in frame structures. Decayed pilings break off. Walls fall. Solid stone walls crack and break seriously. Wet grounds and steep slopes crack to some extent. Chimneys, columns, monuments and factory stacks and towers twist and fall. Very heavy furniture moves conspicuously or overturns.

IX **Panic is general.**
Ground cracks conspicuously. Damage is considerable in masonry structures built especially to withstand earthquakes; great in other masonry buildings - some collapse in large part. Some wood frame houses built especially to withstand earthquakes are thrown out of plumb, others are shifted wholly off foundations. Reservoirs are seriously damaged and underground pipes sometimes break.

X **Panic is general.**
Ground, especially when loose and wet, cracks up to widths of several inches; fissures up to a yard in width run parallel to canal and stream banks. Landsliding is considerable from river banks and steep coasts. Sand and mud shifts horizontally on beaches and flat land. Water level changes in wells. Water is thrown on banks of canals, lakes, rivers, etc. Dams, dikes, embankments are seriously damaged. Well-built wooden structures and bridges are severely damaged, and some collapse. Dangerous cracks develop in excellent brick walls. Most masonry and frame structures, and their foundations are destroyed. Railroad rails bend slightly. Pipe lines buried in earth tear apart or are crushed endwise. Open cracks and broad wavy folds open in cement pavements and asphalt road surfaces.

XI **Panic is general.**
Disturbances in ground are many and widespread, varying with the ground material. Broad fissures, earth slumps, and land slips develop in soft, wet ground. Water charged with sand and mud is ejected in large amounts. Sea waves of significant magnitude may develop. Damage is severe to wood frame structures, especially near shock centers, great to dams, dikes and embankments, even at long distances. Few if any masonry structures remain standing. Supporting piers or pillars of large, well-built bridges are wrecked. Wooden bridges that "give" are less affected. Railroad rails bend greatly and some thrust endwise. Pipe lines buried in earth are put completely out of service.

XII **Panic is general.**
Damage is total, and practically all works of construction are damaged greatly or destroyed. Disturbances in the ground are great and varied, and numerous shearing cracks develop. Landslides, rock falls, and slumps in river banks are numerous and extensive. Large rock masses are wrenched loose and torn off. Fault slips develop in firm rock, and horizontal and vertical offset displacements are notable. Water channels, both surface and underground, are disturbed and modified greatly. Lakes are dammed, new waterfalls are produced, rivers are deflected, etc. Surface waves are seen on ground surfaces. Lines of sight and level are distorted. Objects are thrown upward into the air.

1940 WEBSTER STREET
Oakland, California

MODIFIED MERCALLI INTENSITY SCALE

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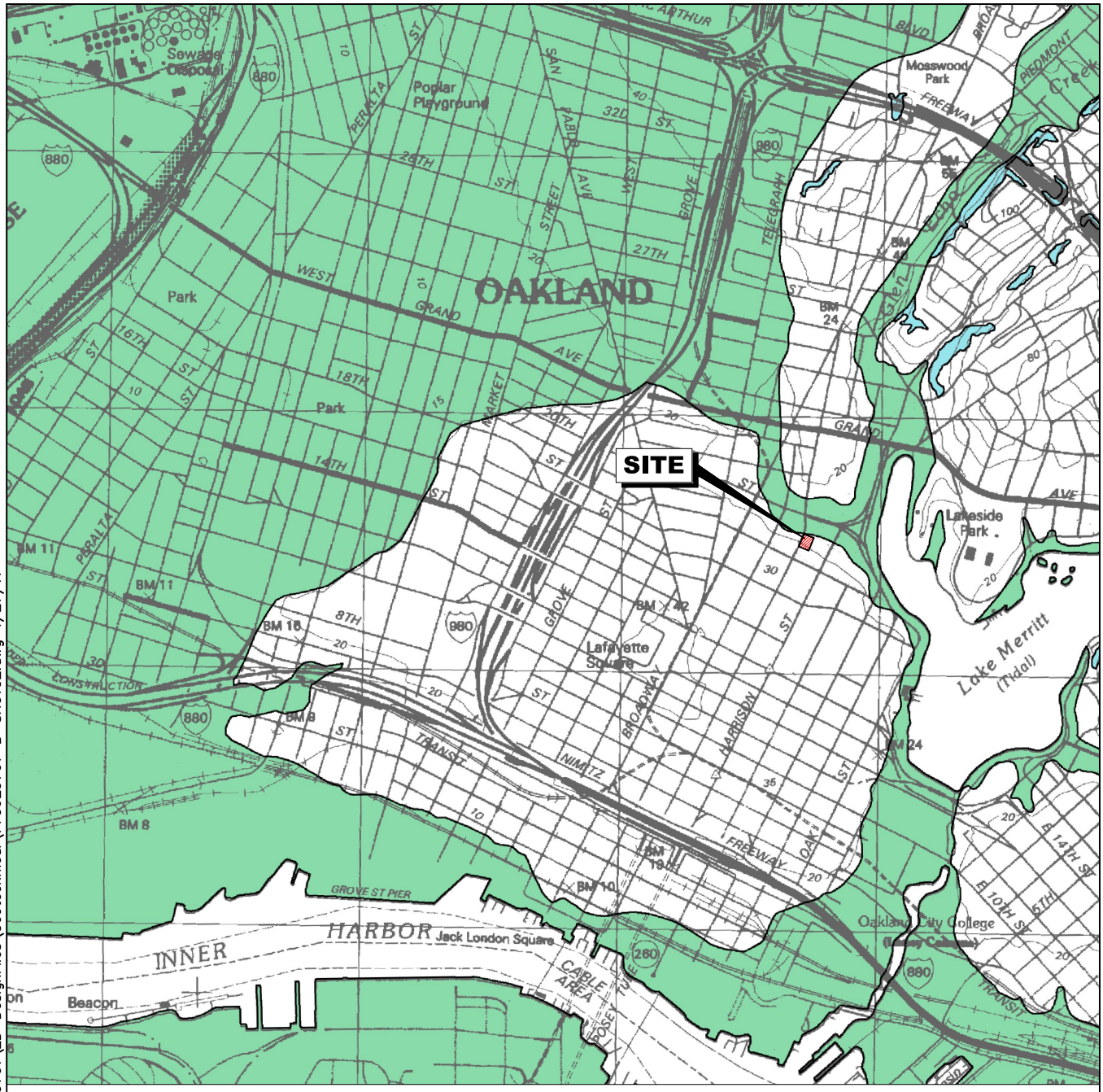
Date 04/27/17	Project No. 770629701	Figure 4



EXPLANATION

Zone of Liquefaction Hazard Potential

Zone of Earthquake-Induced Landslide Hazard Potential

N

0 2000 Feet

Approximate scale

Reference:
State of California "Seismic Hazard Zones" Oakland West Quadrangle, released on February 14, 2003.

1940 WEBSTER STREET
Oakland, California

REGIONAL SEISMIC HAZARD ZONES MAP

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Date 04/27/17	Project No. 770629701	Figure 5

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APPENDIX A

BORING LOGS

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-1

Boring location: See Figure 2
Logged by: M. Pepin
Date started: 4/8/16 Date finished: 4/8/16
Drilled By: Pitcher Drilling Co.
Drilling method: Rotary Wash
Hammer weight/drop: 140 lbs./30 inches Hammer type: Auto Safety
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 19.2 feet[2]						
1						5 inches asphalt pavement						
						4 inches aggregate base (AB)						
2	BULK				CL	SANDY CLAY (CL) dark brown, brown, and orange-brown, stiff, moist, fine- to medium-grained sand						
3	BULK					FILL						
4						CLAYEY SAND (SC) yellow-brown, medium dense, moist, fine- to medium-grained						
5												
6	SPT		2 2 8	12	SC	olive-brown				30.6	17.7	
7	SPT		5 10 23	40		dense						
8												
9												
10						SANDY CLAY (CL) olive, very stiff, moist, fine-grained sand						
11	SPT		2 5 11	19								
12	SPT		9 12 12	29								
13					CL							
14												
15	SPT		7 9 10	23		olive to yellow-brown, fine- to medium-grained sand						
16												
17						CLAY (CL) mottled olive and yellow-brown, very stiff, wet, trace fine-grained sand						
18	SPT		6 6 11	20								
19												
20												
21	S&H		9 12 19	22		TxUU Test, see Figure B-2 trace coarse-grained sand	TxUU PP	2,000	2,420 2,500		19.6	109
22												
23					CL							
24												
25						olive						
26	S&H		9 15 18	23								
27												
28												
29					SC							
30												

LANGAN

Project No.: 770629701 Figure: A-1a

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H		11 17 15	22	SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet, fine- to coarse-grained sand, trace fine-grained gravel				22.7 25.4	20.3 23.2	111
32	SPT		2 1 3	5	SC	CLAYEY SAND (SC) gray, loose, wet LL = 29, PI = 11, see Figure B-5						
34	SPT		4 9 21	36	SC	CLAYEY SAND with GRAVEL (SC) olive and red-brown, dense, wet						
36	SPT		6 35 38	88	SP-SC	SAND with CLAY and GRAVEL (SP-SC) olive-brown and red-brown, very dense, wet						
41	SPT		11 16 15	37		dense, fine- to coarse-grained sand, trace fine-grained gravel						
42					CL	SANDY CLAY (CL) mottled yellow-brown, gray-brown, and orange, hard, wet, fine- to medium-grained sand, trace fine-grained gravel						
46	SPT		25 16 27	52	SC	CLAYEY SAND (SC) olive-brown and gray-brown with orange mottling, very dense, wet, fine- to medium-grained sand, trace fine-grained gravel						
51	S&H		8 15 28	30		CLAY (CL) yellow-brown, very stiff to hard, wet, trace fine-grained sand LL = 26, PI = 8, see Figure B-5						
56	S&H		11 20 26	32	CL	olive-brown, hard, wet						

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Project No.: 770629701 | Figure: A-1b

TEST GEOTECH LOG 770629701 GEOTHECK 1940 WEBSTERST.GPJ TR.GDT 4/27/17

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-1

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	SAMPLES						LABORATORY TEST DATA					
61						CLAY (CL) (continued)						
62												
63												
64												
65	S&H		13 22 26	34	CL	olive with yellow-brown mottling						
66												
67												
68												
69												
70												
71												
72												
73						SAND with CLAY (SP-SC) olive-brown and orange-brown, very dense, wet, fine- to coarse-grained sand, trace fine-grained gravel						
74												
75	SPT		17 32 45	92	SP-SC							
76												
77												
78												
79												
80												
81						CLAY (CL) olive-brown, hard, wet, trace fine- to medium-grained sand						
82												
83												
84												
85	S&H		18 37 45	57	CL							
86												
87												
88												
89												
90												

LANGAN

Project No.: 770629701

Figure: A-1c

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-1

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91						CLAY (CL) (continued)						
92												
93					CL							
94												
95	S&H		11 25 50/ 3"	53/ 9"								
96												
97												
98												
99												
100												
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												
117												
118												
119												
120												

Boring terminated at a depth of 96.5 feet below ground surface.
Boring backfilled with grout.
Groundwater obscured by drilling method.
PP = pocket penetrometer.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations based on NAVD88 based on a topographic survey prepared by BKF Engineers dated 3/10/16..

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Project No.: 770629701
Figure: A-1d

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-2

Boring location: See Figure 2
Logged by: M. Pepin
Date started: 4/6/16 Date finished: 4/6/16
Drilled By: Pitcher Drilling Co.
Drilling method: Rotary Wash
Hammer weight/drop: 140 lbs./30 inches Hammer type: Auto Safety
Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
						Ground Surface Elevation: 20.9 feet[2]						
0						4 inches asphalt pavement						
1	BULK					3 inches aggregate base (AB)						
2					SM	SILTY SAND (SM) dark brown, loose to medium dense, moist, trace fine-grained gravel, trace clay — FILL						
3	BULK											
4					CL	CLAY with SAND (CL) olive and dark brown, medium stiff to stiff, moist						
5	BULK											
6	SPT		24 31 30	73	SP	SAND (SP) yellow-brown, very dense, moist, trace silt						
7												
8						CLAYEY SAND (SC) olive-gray, dense, moist						
9												
10					SC							
11	SPT		14 17 17	41								
12												
13						CLAY (CL) gray-brown, very stiff, moist, trace fine- to medium-grained sand, trace fine-grained gravel						
14												
15												
16	S&H		6 10 16	18	CL							
17												
18												
19						▽ (4/6/2016)						
20												
21	S&H		7 18 22	28	SP	SAND with GRAVEL (SP) yellow-brown, medium dense, wet, fine- to coarse-grained sand, trace clay						
22						CLAY (CL) olive with gray-brown mottling, very stiff, wet, trace fine-grained gravel and fine- to medium-grained sand						
23												
24												
25					CL							
26	SPT		5 8 9	20		olive-with orange-brown staining, trace fine-grained sand						
27												
28												
29					SC							
30												

LANGAN

Project No.: 770629701 Figure: A-2a

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-2

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
							LABORATORY TEST DATA					
31	S&H		16 31 47	55		CLAYEY SAND with GRAVEL (SC) mottled olive and yellow-brown, very dense, wet, fine- to coarse-grained sand, fine-grained gravel						
32												
33												
34					SC							
35	S&H		20 31 38	48		mottled red-brown, orange-brown, and gray, dense, wet, fine- to coarse-grained gravel						
36												
37												
38												
39												
40	S&H		10 16 31	33		CLAYEY SAND (SC) red-brown to yellow-brown, dense, wet, fine- to coarse-grained sand, trace fine- to coarse-grained gravel LL = 36, PI = 13, see Figure B-5				26.7	16.4	117
41					SC							
42												
43												
44												
45	S&H		12 25 28	37		CLAY (CL) olive and yellow-brown, hard, wet, trace fine-grained gravel						
46												
47												
48												
49					CL							
50	S&H		8 12 19	22		yellow-brown, stiff to very stiff, trace fine-grained sand and silt TxUU Test, see Figure B-3	TxUU PP	5,000	1,780 3,250		33.2	89
51												
52												
53												
54												
55	S&H		17 32 43	53		CLAY with SAND (CL) mottled brown, olive, and gray, hard, wet, fine- to medium-grained sand, trace fine-grained gravel						
56												
57					CL							
58												
59												
60												

LANGAN

Project No.: 770629701

Figure: A-2b

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61					CL	CLAY with SAND (CL) (continued)						
62						CLAY (CL) mottled olive, yellow-brown and gray, hard, wet, trace fine-grained sand						
63												
64												
65												
66	S&H		13 20 28	34								
67					CL							
68												
69												
70												
71												
72												
73												
74						SAND (SP) yellow-brown, very dense, wet, trace fine-grained gravel, trace silt						
75					SP							
76	S&H		25 42 50	64								
77						CLAY with SAND (CL) olive to yellow-brown, hard, wet, fine- to coarse-grained sand, trace fine- to coarse-grained gravel						
78												
79					CL							
80												
81						CLAY (CL) olive, hard, wet						
82												
83												
84												
85												
86	S&H		20 35 42	54	CL							
87												
88												
89												
90												

LANGAN

Project No.: 770629701

Figure: A-2c

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-2

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91					CL	CLAY (CL) (continued)						
92						CLAY with SAND (CL) olive, hard, wet, fine-grained sand						
93												
94					CL							
95												
96	S&H		20 29 50	55								
97												
98												
99												
100												
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												
117												
118												
119												
120												

Boring terminated at a depth of 96.5 feet below ground surface.
Boring backfilled with grout.
Groundwater measured at 19.7 feet at time of drilling.
PP = pocket penetrometer.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations based on NAVD88 based on a topographic survey prepared by BKF Engineers dated 3/10/16..

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Project No.: 770629701
Figure: A-2d

PROJECT:	**1940 WEBSTER STREET** Oakland, California	**Log of Boring B-3**

Boring location: See Figure 2

Date started: 4/7/16 Date finished: 4/8/16

Drilling method: Rotary Wash

Hammer weight/drop: 140 lbs./30 inches Hammer type: Auto Safety

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: M. Pepin
Drilled By: Pitcher Drilling Co.

Ground Surface Elevation: 20.8 feet[2]

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
0						4 inches asphalt pavement						
						5 inches aggregate base (AB)						
1	BULK				SM	SILTY SAND (SM) dark brown, medium dense, moist, trace coarse-grained sand and clay						
2						FILL						
3	BULK				SC-SM	SILTY CLAYEY SAND (SC-SM) dark brown and gray-brown, medium dense, moist, trace brick						
4												
5	BULK					SAND with SILT (SP-SM) yellow-brown to red-brown, dense, moist						
6	SPT		15 17 24	49	SP-SM	olive-brown and orange-brown						
7												
8												
9						SILTY SAND (SM) olive-gray, very dense, moist, trace clay						
10												
11	SPT		15 23 26	59	SM							
12												
13						(4/7/2016)						
14						CLAY with SAND (CL) olive with orange-brown mottling, hard, wet, trace fine-grained gravel						
15												
16	S&H		14 25 23	34								
17												
18					CL							
19												
20						olive with orange mottling, very stiff to hard, fine- to medium-grained sand TxUU Test, see Figure B-4	TxUU	2,000	4,170		18.8	110
21	S&H		7 15 24	27								
22												
23												
24						CLAY (CL) olive, hard, wet, trace fine-grained gravel						
25												
26	S&H		18 25 22	33	CL							
27												
28												
29					CL							
30												

LABORATORY TEST DATA

LANGAN

Project No.: 770629701 Figure: A-3a

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-3

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H		17 25 32	40	CL	SANDY CLAY (CL) olive-gray with orange-brown mottling, hard, wet, with fine- to coarse-grained gravel						
32					SC	CLAYEY SAND (SC) yellow-brown, dense, wet, fine- to medium-grained sand, trace fine-grained gravel				24.7	18.5	112
33												
34												
35	S&H		16 26 29	39	CL	CLAY (CL) mottled olive, yellow-brown, and orange-brown, hard, wet, trace fine- to medium-grained sand						
36												
37												
38												
39												
40	S&H		8 13 28	29	CL	CLAY with SAND (CL) olive with gray and yellow-brown mottling, very stiff, wet						
41												
42	SPT		13 19 29	58	SC	CLAYEY SAND with GRAVEL (SC) yellow-brown, red-brown, and gray, very dense, wet, fine-grained gravel						
43												
44												
45	SPT		22 38 24	74		orange-brown, fine- to coarse-grained sand and gravel						
46												
47												
48												
49						CLAY (CL) yellow-brown, very stiff, wet						
50												
51	S&H		9 13 17	21		Consolidation Test, see Figure B-1	PP		2,500		33.5	88
52												
53												
54					CL							
55												
56	S&H		10 28 41	48		olive, hard						
57												
58												
59												
60												

LANGAN

Project No.: 770629701

Figure: A-3b

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-3

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61						CLAY with SAND (CL) olive and yellow-brown, hard, wet, fine- to coarse-grained sand						
62												
63												
64												
65	S&H		7 24 33	40								
66												
67					CL							
68												
69												
70												
71												
72												
73												
74						SAND with CLAY and GRAVEL (SP-SC) brown and dark gray, very dense, wet, fine- to coarse-grained sand and gravel						
75	S&H		40 50/ 4"	35/ 4"								
76					SP- SC							
77												
78												
79						CLAY (CL) olive, hard, wet						
80												
81												
82												
83												
84					CL							
85	S&H		21 34 37	50								
86												
87												
88												
89												
90												

LANGAN

Project No.: 770629701

Figure: A-3c

PROJECT: **1940 WEBSTER STREET**
Oakland, California

Log of Boring B-3

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA: Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91												
92												
93												
94					CL							
95	S&H		18	53/		trace fine-grained sand						
96			26	9"								
97			50/									
98			3"									
99												
100												
101												
102												
103												
104												
105												
106												
107												
108												
109												
110												
111												
112												
113												
114												
115												
116												
117												
118												
119												
120												

Boring terminated at a depth of 96.5 feet below ground surface.
Boring backfilled with grout.
Groundwater encountered at 13.3 feet one day after start of drilling.
PP = pocket penetrometer.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
[2] Elevations based on NAVD88 based on a topographic survey prepared by BKF Engineers dated 3/10/16..

LANGAN

Project No.: 770629701
Figure: A-3d

TEST GEOTECH LOG 770629701 GEOTHECK 1940 WEBSTERST.GPJ TR.GDT 4/27/17

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		PT	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel	3" to No. 4	76.2 to 4.76
coarse	3" to 3/4"	76.2 to 19.1
fine	3/4" to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.075
coarse	No. 4 to No. 10	4.76 to 2.00
medium	No. 10 to No. 40	2.00 to 0.420
fine	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push or Drive sampler

SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

S&H Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

1940 WEBSTER STREET
Oakland, California

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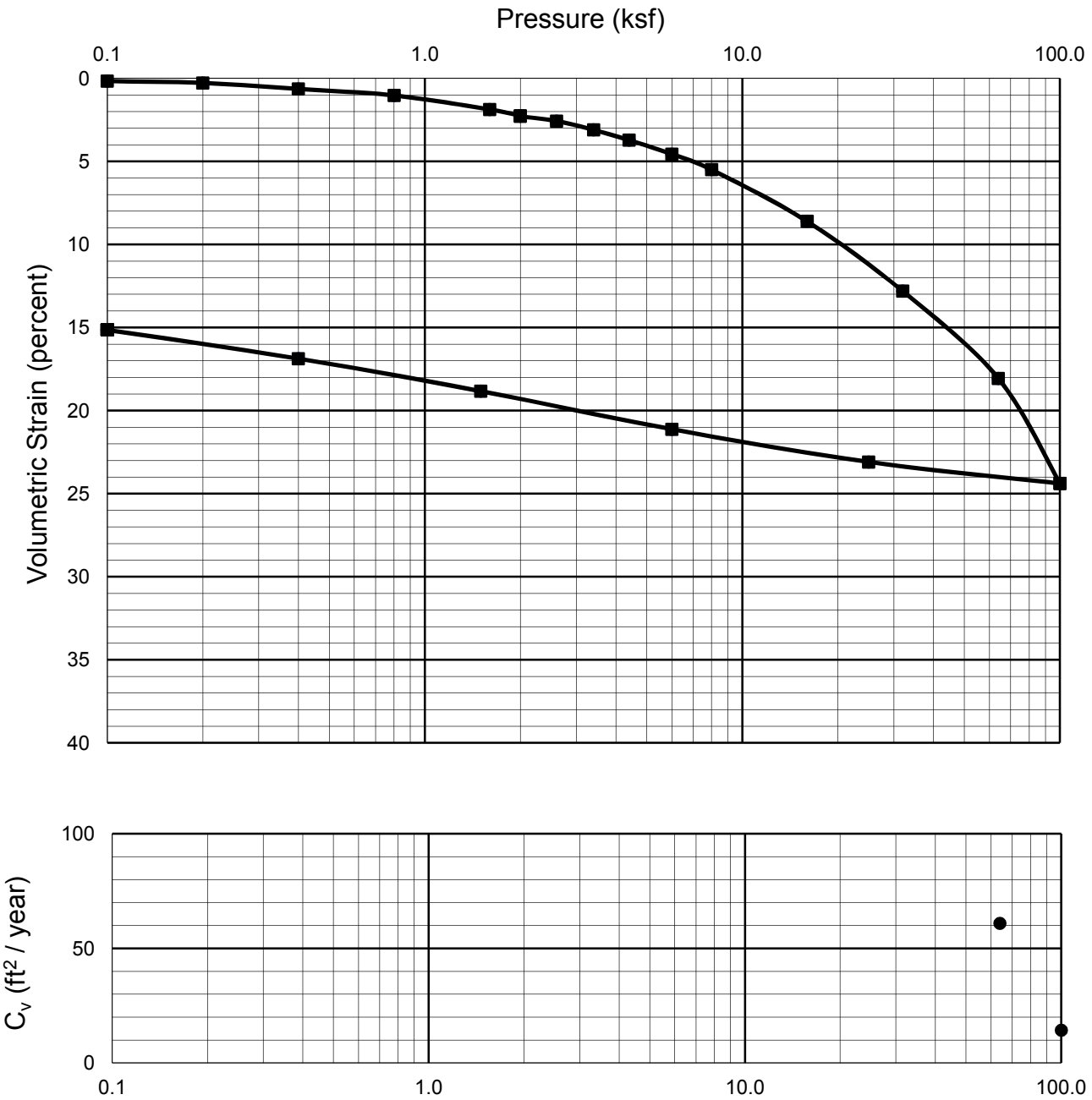
CLASSIFICATION CHART

Date 04/27/17 | Project No. 770629701 | Figure A-4

APPENDIX B

LABORATORY TEST RESULTS



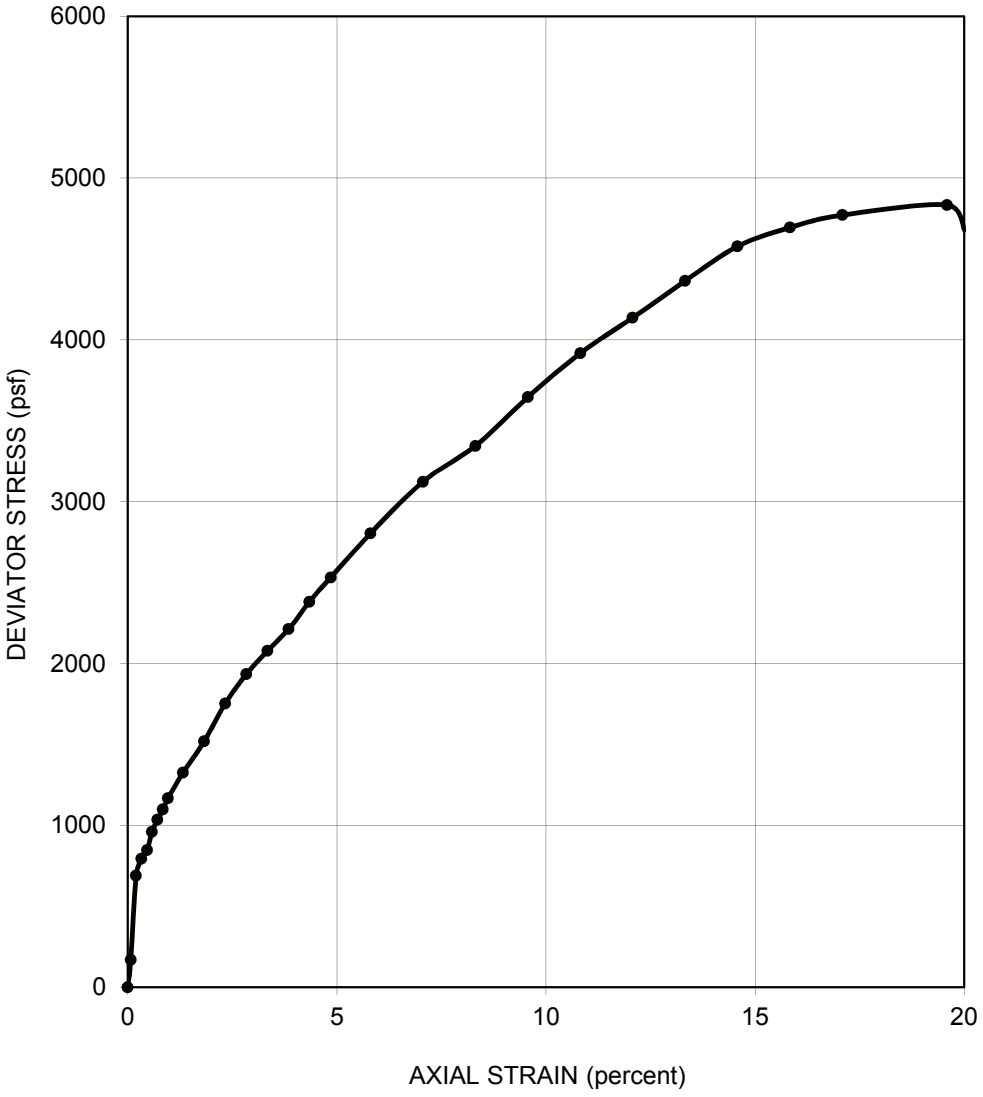
Sampler Type: Sprague and Henwood			Condition		Before Test		After Test	
Diameter (in) 2.42	Height (in) 1.00		Water Content	w_o	33.5 %	w_f	23.0 %	
Overburden Pressure, p_o	3,950	psf	Void Ratio	e_o	0.91	e_f	0.62	
Preconsol. Pressure, p_c	30,000	psf	Saturation	S_o	99 %	S_f	100 %	
Compression Ratio, $C_{\varepsilon c}$	0.36		Dry Density	γ_d	88 pcf	γ_d	104 pcf	
LL - -	PL - -		PI - -		G_s	2.70	(assumed)	
Description CLAY (CL), yellow brown			Source B-3 at 50 feet					

1940 WEBSTER STREET
Oakland, California

CONSOLIDATION TEST REPORT

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure B-1



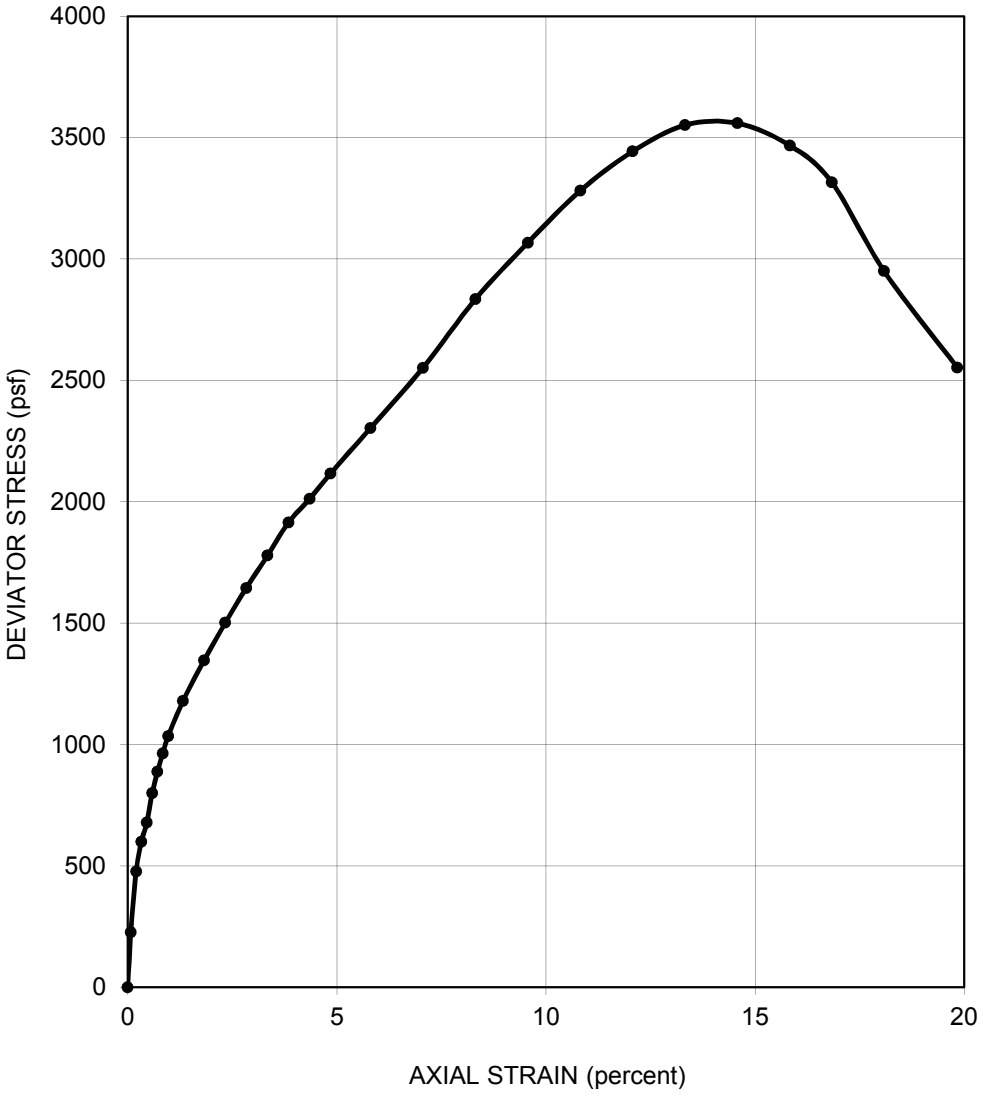
SAMPLER TYPE	Sprague and Henwood			SHEAR STRENGTH	2,420 psf
DIAMETER (in.)	2.40	HEIGHT (in.)	5.61	STRAIN AT FAILURE	19.6 %
MOISTURE CONTENT	19.6 %			CONFINING PRESSURE	2,000 psf
DRY DENSITY	109 pcf			STRAIN RATE	0.75 % / min
DESCRIPTION	CLAY (CL), mottled olive and yellow-brown			SOURCE	B-1 @ 20 feet

1940 WEBSTER STREET
Oakland, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure B-2



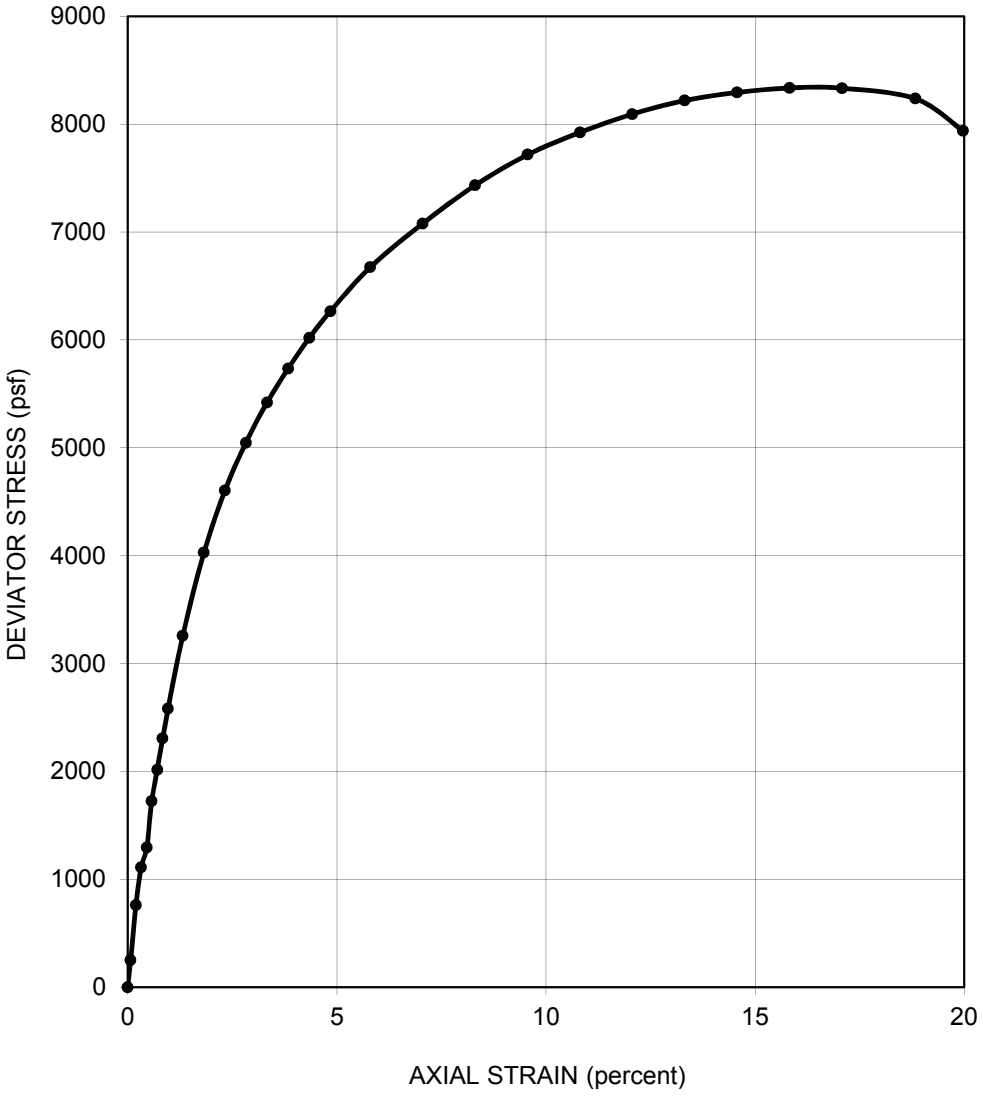
SAMPLER TYPE	Sprague and Henwood			SHEAR STRENGTH	1,780 psf
DIAMETER (in.)	2.40	HEIGHT (in.)	5.61	STRAIN AT FAILURE	14.6 %
MOISTURE CONTENT	33.2 %			CONFINING PRESSURE	5,000 psf
DRY DENSITY	89 pcf			STRAIN RATE	0.75 % / min
DESCRIPTION	CLAY (CL), yellow-brown			SOURCE	B-2 @ 50 feet

1940 WEBSTER STREET
Oakland, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure B-3



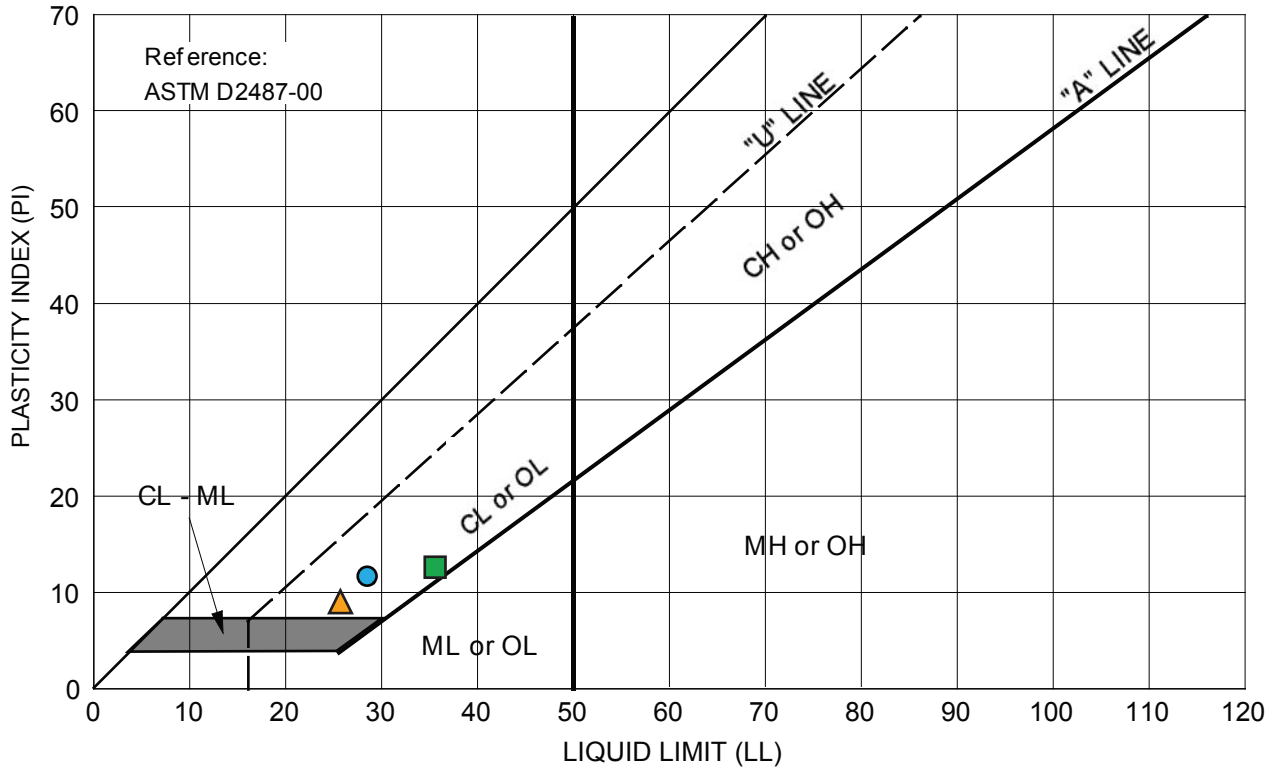
SAMPLER TYPE	Sprague and Henwood			SHEAR STRENGTH	4,170 psf
DIAMETER (in.)	2.41	HEIGHT (in.)	5.61	STRAIN AT FAILURE	15.8 %
MOISTURE CONTENT	18.8 %			CONFINING PRESSURE	2,000 psf
DRY DENSITY	110 pcf			STRAIN RATE	0.75 % / min
DESCRIPTION	CLAY with SAND (CL), olive with orange mottling			SOURCE	B-3 @ 20 feet

1940 WEBSTER STREET
Oakland, California

UNCONSOLIDATED-UNDRAINED TRIAXIAL COMPRESSION TEST

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure B-4



NP = Non Plastic

Symbol	Source	Description and Classification	Natural M.C. (%)	Liquid Limit (%)	Plasticity Index (%)	% Passing #200 Sieve
○	B-1 at 31.5 feet	CLAYEY SAND (SC), gray	23.2	29	11	25.4
△	B-1 at 50 feet	CLAY (CL), yellow-brown	--	26	8	--
□	B-2 at 40 feet	CLAYEY SAND (SC), red-brown to yellow-brown	16.4	36	13	26.7

1940 WEBSTER STREET
Oakland, California

PLASTICITY CHART

LANGAN

Date 04/27/17 | Project No. 770629701 | Figure B-5

APPENDIX C

SOIL CORROSIVITY TEST RESULTS

California State Certified Laboratory No. 2153

CERCO analytical
1100 Willow Pass Court, Suite A
Concord, CA 94520-1006
925 462 2771 Fax. 925 462 2775
www.cercoanalytical.com

27 April, 2016

Job No. 1604188
Cust. No.11308

Ms. Elena Ayers
Langan Treadwell Rollo
501 14th Street, 3rd Floor
Oakland, CA 94612

Subject: Project No.: 770626701.700.004
Project Name: 1940 Webster Street
Corrosivity Analysis – ASTM Test Methods

Dear Ms. Ayers:

Pursuant to your request, CERCO Analytical has analyzed the soil sample submitted on April 21, 2016. Based on the analytical results, a brief corrosivity evaluation is enclosed for your consideration.

Based upon the resistivity measurement, the sample is classified as "corrosive". All buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric coated steel or iron should be properly protected against corrosion depending upon the critical nature of the structure. All buried metallic pressure piping such as ductile iron firewater pipelines should be protected against corrosion.

The chloride ion concentration is none detected to 15 mg/kg.

The sulfate ion concentration is 41 mg/kg and is determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel at these locations.

The pH of the soil is 8.12, which does not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential is 420-mV which is indicative of aerobic soil conditions.

This corrosivity evaluation is based on general corrosion engineering standards and is non-specific in nature. For specific long-term corrosion control design recommendations or consultation, please call JDH Corrosion Consultants, Inc. at (925) 927-6630.

We appreciate the opportunity of working with you on this project. If you have any questions, or if you require further information, please do not hesitate to contact us.

Very truly yours,
CERCO ANALYTICAL, INC.

J. Darby Howard, Jr., P.E.
President

JDH/jdl
Enclosure

California State Certified Laboratory No. 2153

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Client: Langan Treadwell rollo
Client's Project No.: 770626701.700.400
Client's Project Name: 1940 Webster Street
Date Sampled: Not Indicated
Date Received: 21-Apr-2016
Matrix: Soil
Authorization: Signed Chain of Custody

Date of Report: 27-Apr-2016

Job/Sample No.	Sample I.D.	Redox (mV)	pH	Resistivity (As Received) (ohms-cm)	Resistivity (100% Saturation) (ohms-cm)	Sulfide (mg/kg)*	Chloride (mg/kg)*	Sulfate (mg/kg)*
1604188-001	Composite of B-1 Thru B-3 @ 0'-5'	420	8.12	-	1,700	-	N.D.	41

Method:	ASTM D1498	ASTM D4972	ASTM G57	ASTM G57	ASTM D4658M	ASTM D4327	ASTM D4327
Reporting Limit:	-	-	-	-	50	15	15
Date Analyzed:	26-Apr-2016	26-Apr-2016	-	26-Apr-2016	-	26-Apr-2016	26-Apr-2016

Cheryl McMillen
Laboratory Director

* Results Reported on "As Received" Basis
N.D. - None Detected

Quality Control Summary - **All laboratory quality control parameters were found to be within established limits**

DISTRIBUTION

1 copy: Mr. David Fiore
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San Mateo, CA 94404