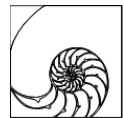


2044 Franklin St. Mixed Use Project

CEQA Analysis

Prepared for:

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



Prepared by:

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November 8, 2017

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General Project Information

- 1. Project Title:** 2044 Franklin Street Mixed Use Project
- 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:** Rebecca Lind, Planner III
(510) 238-3472
250 Frank H. Ogawa Plaza, Suite 2114
Oakland, CA 94612
rlind@oaklandnet.com
- 4. Project Location:** 2044 Franklin Street (between Franklin and Webster Streets, at 21st Street)
Assessor's Parcel No. 8-651-18-1
- 5. Project Sponsor's Name and Address:** Village Glenn Oakland 2, LLC
Attn: Randy Miller
P.O. Box 70975
Oakland, CA 94612
- 6. Existing General Plan Designations:** Central Business District (CBD)
- 7. Existing Zoning:** Central Business District Commercial (CBD-C),
Height Limit 7 (no limit)
- 8. Requested Permits:** Conditional Use Permit – Major Project (>200,000 sf)
Design Review (Planning Code §17.136.040)
Tract Map (Municipal Code §16.24.020)
- Minor Variances:**
- One Loading Dock vs. Two Required
 - Driveway from Principal Street
 - Landscape Standards for Open Space

Project Description

Existing Setting and Neighboring Land Uses

As shown in **Figure 1**, the Project site is in the Downtown area of the City of Oakland (City). The Project site is the northerly third of the block bounded by Webster Street on the east, 21st Street on the north, Franklin Street on the west and Thomas Berkeley Way on the south. East of the site, across Webster Street, is the rooftop garden atop the Kaiser Center parking garage which is considered an historic resource by the City of Oakland; to the north, across 21st Street is a 10-story office building (home of the University of Phoenix) and a 20-story building, headquarters of Pandora. To the west, across Franklin Street is the Dorola V. Haley medical office building and associated parking lot. Regional access includes Interstate 980 (I-980), approximately 0.4 miles to the west, and I-580, approximately 0.95 miles to the northeast. In addition, the 19th Street-Oakland Bay Area Rapid Transit (BART) Station is an approximately ¼-mile walk south and west of the Project site on Broadway, providing daily service between San Francisco, Fremont, Millbrae, and Richmond. The area also benefits from Alameda-Contra Costa (AC) Transit bus service along Broadway.

The dominant existing land use in the area is mid- to high-rise commercial office buildings with ground floor retail spaces for restaurants, banks and other uses, and surface parking lots. The majority of buildings in the immediate area are newer multi-story buildings of 10 – 20 stories or more. The dominant buildings in the area include the 30-story Kaiser Center and Ordway buildings; smaller scale buildings of 1 – 4 stories occupy the block between Franklin Street and Broadway. **Figure 2** shows the Project site in relation to neighboring land uses.

Existing Use

The site contains one 2-story brick and masonry building of 8,861 square feet with a height of 24 feet currently occupied by a Wells Fargo Bank branch and a 24 space surface parking lot. The building will be demolished and the parking lot redeveloped as part of the project. The current development is credited with generating 410 average daily transportation trips. More detail about how redevelopment of the site will affect transportation is shown in Table 2.

The approximately 0.59-acre Project site has site area of 25,568 sf, of which 23,832 is existing impervious surface. The Project site currently contains a total of eight street trees – two on the Franklin Street frontage and three each on 21st Street and Webster Street. The existing street trees are to be removed and replaced by two trees on Franklin Street, two trees on Webster Street and six trees on 21st Street.

The Project site is within Oakland's Central Business District under the General Plan land use designation and is zoned CBD-C. The intent of the CBD zones is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor retail, 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.

Description of Project

Table 1 summarizes the proposed Project, and **Figures 3 through 12** depict the Project site and the Project's proposed building plans.

Table 1: Project Development Summary	
Description	Amount
<u>Building 1 – Tower</u>	
Total Lot Area	25,568 sf
Total Building Footprint Area	15,550 sf
Total Floor Area	314,687 sf
Building Height	353-6" ft
Total Dwelling Units	179
Retail Space	1,400 sf
Total Open Space (including 6 th floor)	7,700 sf
Number of Parking Spaces	86
Ground Floor	
Total floor area	15,032 sf
Retail	1,400 sf
Loading berths	1
Parking Stalls	38
Usable Open Space	0
Typical Commercial Office Floors (floors 2 - 5)	
Total Office Floor Area	57,873 sf
Parking	0 sf
Usable Open Space	0
Parking stalls	0
Amenity Level (Floor 6)	
Total Floor Area	10,649 sf

Table 1: Project Development Summary	
Description	Amount
Usable Open Space	3,500 sf
Typical Residential Floor (floors 7 - 28)	
Total Floor Area	231,110 sf
Usable Open Space	2,200sf
Units per Floor	8
Total Dwelling Units	176
Penthouse Floor and Roof	
Total Floor Area	8,505 sf
Usable Open Space	2,000 sf
Penthouse Dwelling Units	3
<u>Building 2 – Low Rise</u>	
Low Rise Building Footprint Area	5,250 sf
Total Floor Area	15,840 sf
Building Height	44 ft
Total Dwelling Units	5
Retail & Restaurant Space	3,950 sf
Total Open Space	7,140 sf
Number of Parking Spaces	0

As seen in **Figure 4**, the top of the building will feature an architectural light box, emitting a soft glow during nighttime hours. The feature is created by illumination of a blank panel placed behind a translucent section of the curtain wall.

Pedestrian Access

The ground floor of the tower building will include an office lobby with an entrance on Webster Street, direct access to the retail or restaurant space at the corner of Webster and 21st Streets, and entrance to the residential lobby from 21st Street. Adjacent to the residential access is a gated entry to an at-grade open space plaza, open to the sky, separating the tower building from the low-rise townhouse building

that fronts on the western half of 21st Street and on Franklin Street. Ground floor uses in the low-rise townhouse buildings are retail or restaurant spaces, with two floors of townhouse dwelling units above. Pedestrian access to the townhouses is via unit entry door from the open space plaza that leads directly to internal stairways for the townhouses

Vehicular Access, Parking and Loading

Cars will access the off-street parking facilities from the Webster Street frontage, providing direct access to stacking devices for 38 cars on the ground floor level; internal ramps lead to an additional 48 parking devices in a basement below. The parking spaces are intended to serve the residences, not the office users. A truck loading dock is accessed from the Webster Street frontage, adjacent to the vehicle parking entry, providing direct access to the residential and commercial trash rooms and office and residential elevators.

Bicycle Parking

The building provides bike parking space for a total of 70 bikes, meeting code requirements for short- and long-term residential, office and retail bike parking. The bicycle parking for office tenants is located on the basement level, accessed either by the elevator or the internal stairs. Long-term bike parking for residents is provided on the basement level, accessed from the residential elevators. Short-term commercial and residential bike parking is located on the sidewalk in the City right-of-way. Two bike lockers for retail customers are located with the proposed retail space, with access on 21st Street.

Emergency Access

Fire Department connections are provided on each street frontage. The Fire Department connection on Webster Street is located outside and adjacent to the commercial lobby; on Franklin Street, the connection would be outside and adjacent to the trash room. The Fire Department connection along 21st Street would be outside and adjacent to the residential lobby. Egress is provided by 2 internal egress stairways - one would exit directly to the street and the other through the commercial lobby. The townhouses exit through the open plaza directly to the street. The Project includes sprinklers in compliance with National Fire Protection Association standards.

Landscape and Design

The Project site currently contains a total of eight street trees – two on the Franklin Street frontage and three each on 21st Street and Webster Street. The existing street trees are to be removed and replaced by two trees on Franklin Street, two trees on Webster Street and six trees on 21st Street.

The Project is contemporary in design, utilizing a metal panel curtain wall and curtain wall glazing at the office and residential levels. Storefront glazing with aluminum windows would face the Webster and 21st Street frontages. The Project will be GreenPoint rated in compliance with the City's Green Building Ordinance.

Population and Employment

Using a population generation rate established for the surrounding area of 1.87 persons per household, the Project generates up to 344 new residents. The approximately 58,000 square feet of office space and 5,400 square feet of retail or restaurant space would generate approximately 127 employees.¹

Utilities

Onsite utilities include gas, energy, domestic water, fire water, wastewater and storm drainage. All on-site utilities would be designed in accordance with applicable codes and current engineering practices. The Project does not require any public water infrastructure improvements but will pay applicable Sewer Mitigation Fees, which would either contribute to replacing pipes to repair the local collection system, or be used to perform inflow and infiltration rehabilitation projects off-site.

Project Construction

Schedule

Project construction would begin with the demolition of the existing 2 story bank building and 24 space parking lot on the site. Demolition would involve abating any hazards present within the building, demolishing and removing the existing structure, and removing the existing foundation slabs and underground utilities. The Project would be constructed in the following general phases:

- Demolition of existing buildings and mass excavation: approximately 50 work days;
- Construction of the mixed-use building: approximately 280 work days;
- Site improvements: approximately 40 work days;
- Commissioning, testing, and final inspection: approximately 40 work days.

Project construction is estimated to take about 24 months, estimated to begin in mid-2018, with building occupancy planned in 2020.

Depending on the construction phase, the number of onsite construction workers could range from approximately 10 to 100 workers per day. The maximum number of workers would occur during framing, rough-in, and interior finish, as well as the exterior work during the building construction phase. The minimum number of workers would occur during the grading, excavation and site preparation.

Equipment and Staging

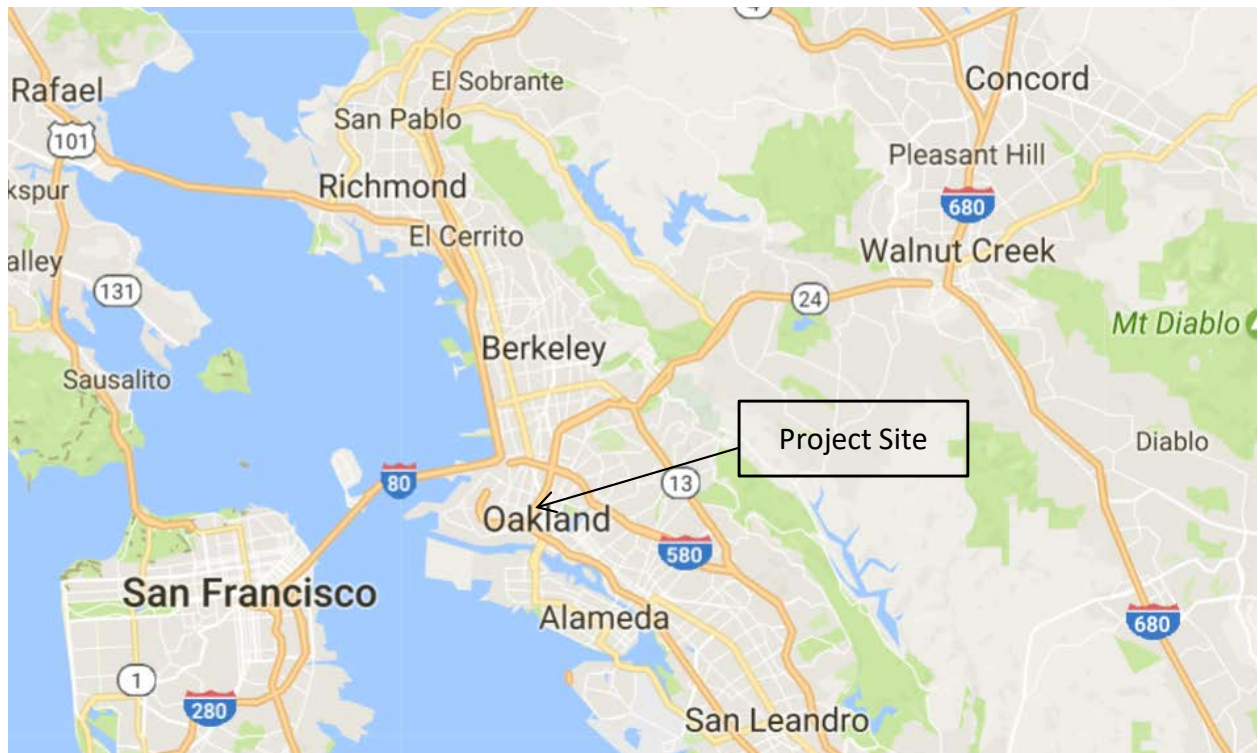
Typical equipment that would be used during construction would include an extendable forklift, generators, excavator, loader, dump trucks, tower crane, elevator man/material lift, and extendable

¹ Using a standard generation rate of 500 sf per employee.

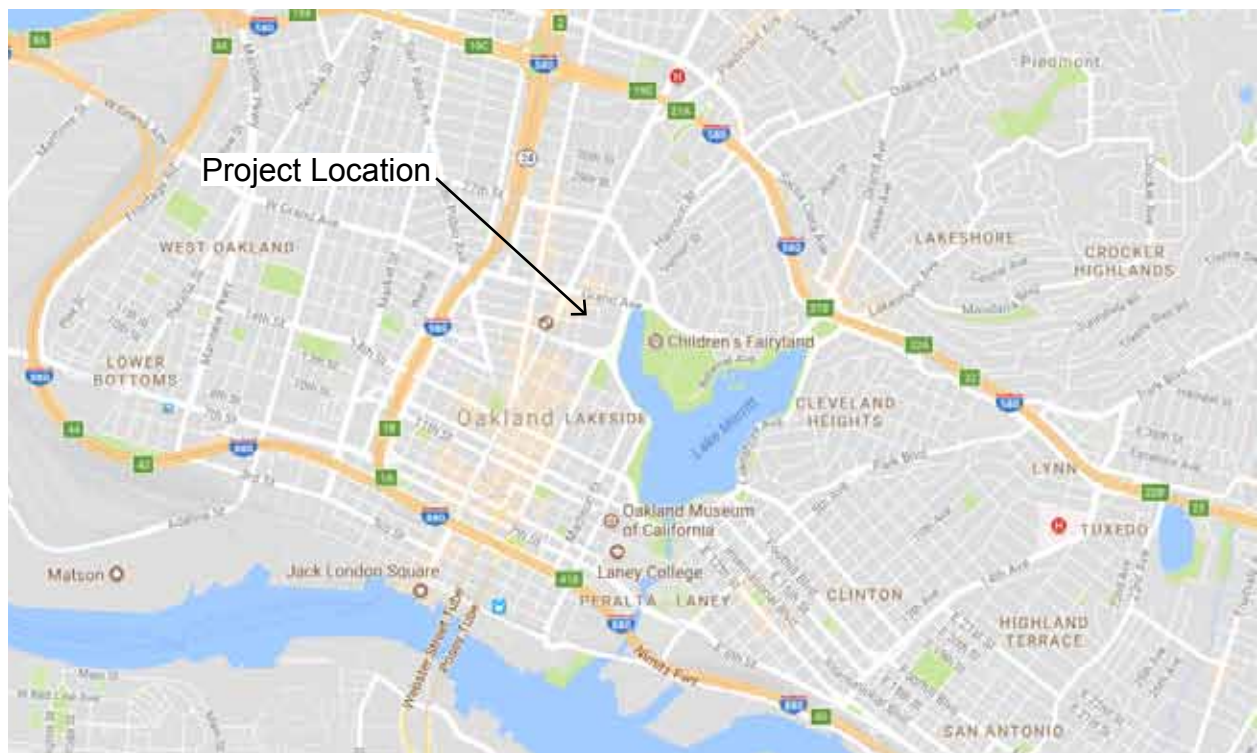
lifts. There is a potential that pile drilling will be used for the foundation support. All construction equipment, employee vehicles, and import material would be staged on site or nearby.

Spoils, Debris, and Materials

Construction would require demolition and removal of the existing building and paved parking lot; all demolition material would be disposed of off-site. Grading is expected to be limited to surface preparation, utility connections and excavation to approximately 24 feet below grade surface for the foundation, footings, utility services and sub-grade parking spaces.



Regional Location



Project Location, within City of Oakland

Figure 1
Project Location





Figure 3
Neighborhood Context



Figure 2
Project Site



Figure 4
Project Architectural Rendering

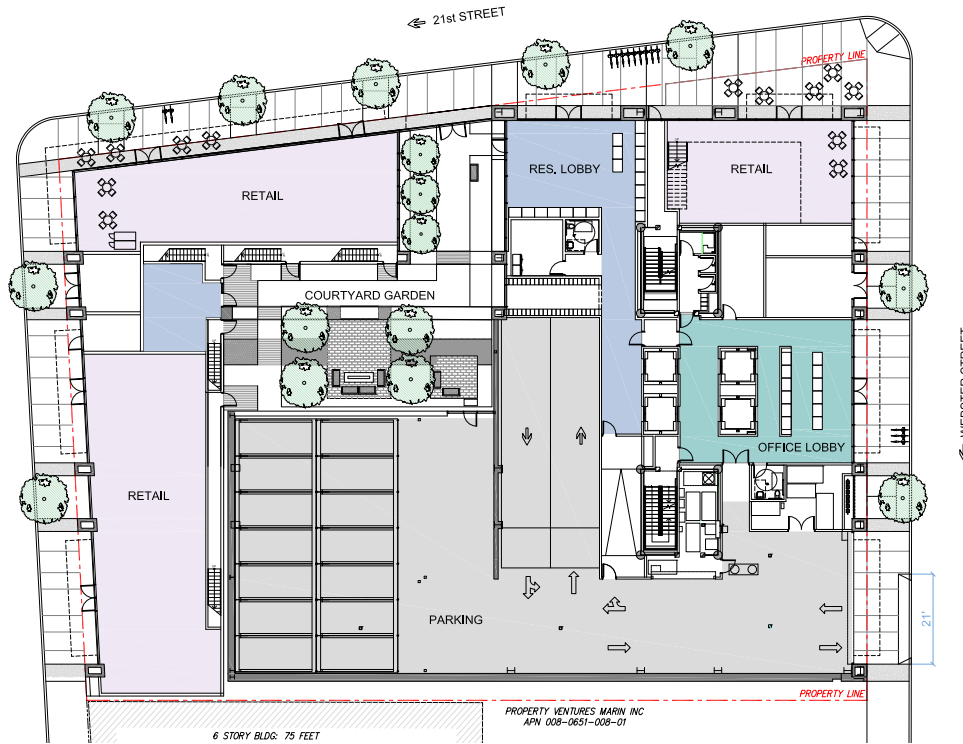


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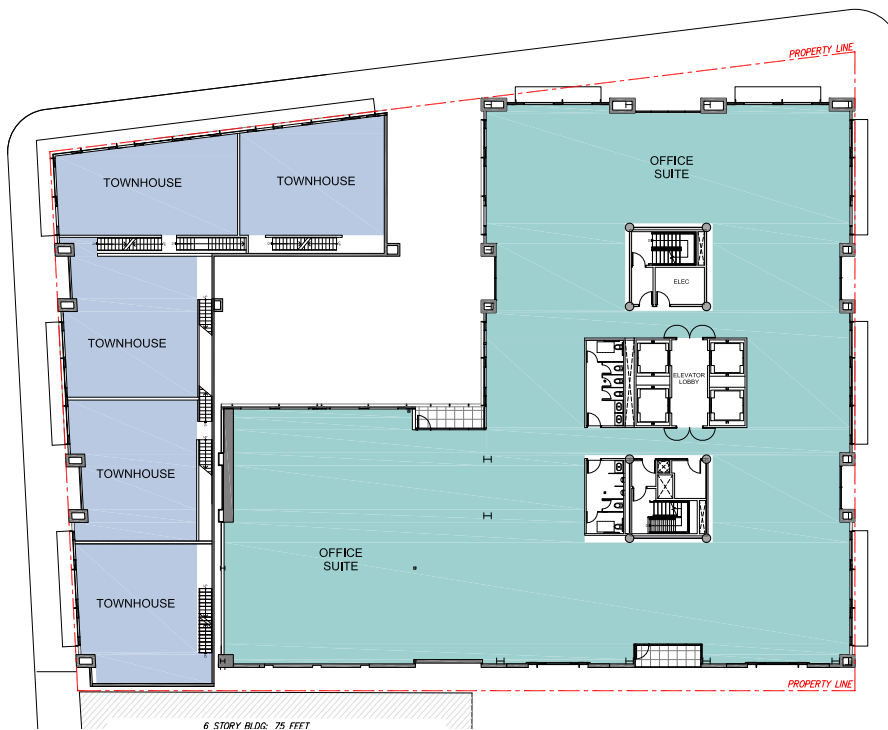


Figure 5
Site Plan

Source: RAD Build, and Pamela Burton Company (landscape)



Ground Floor Plan

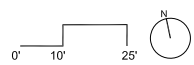
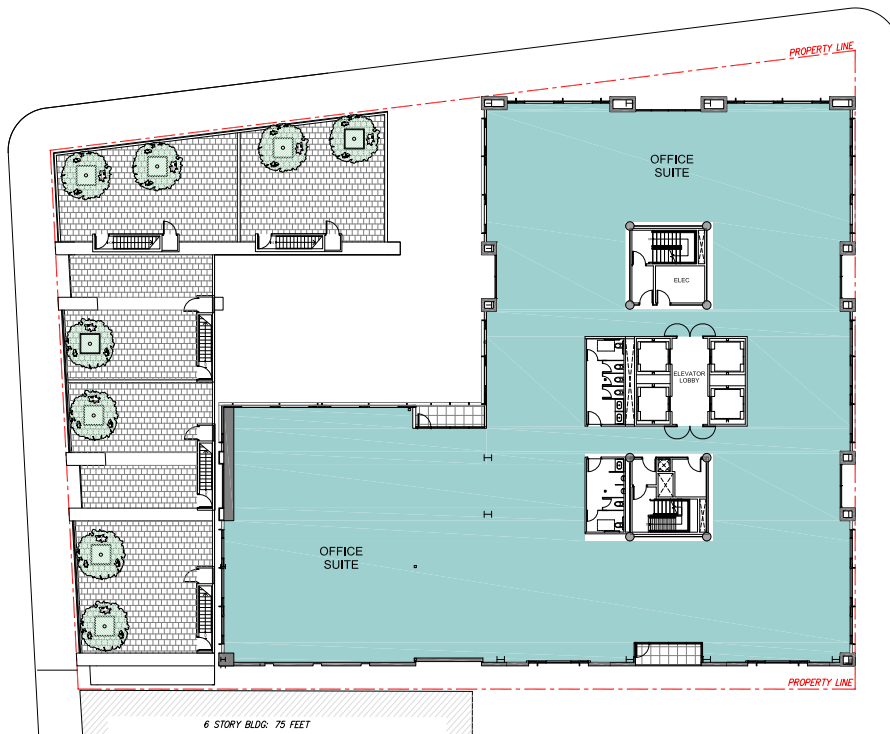


Level 2 Floor Plan

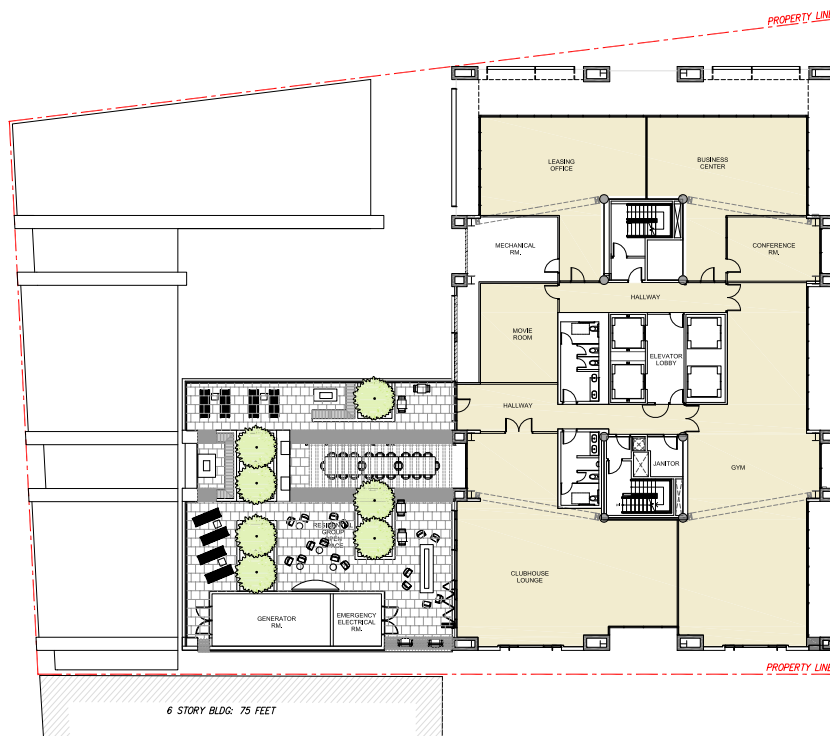
Figure 6
Floor Plans, Ground Level and 2nd Floor



Source: RAD Build



Level 4 Floor Plan

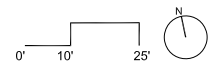


Level 6 Floor Plan

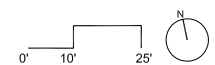
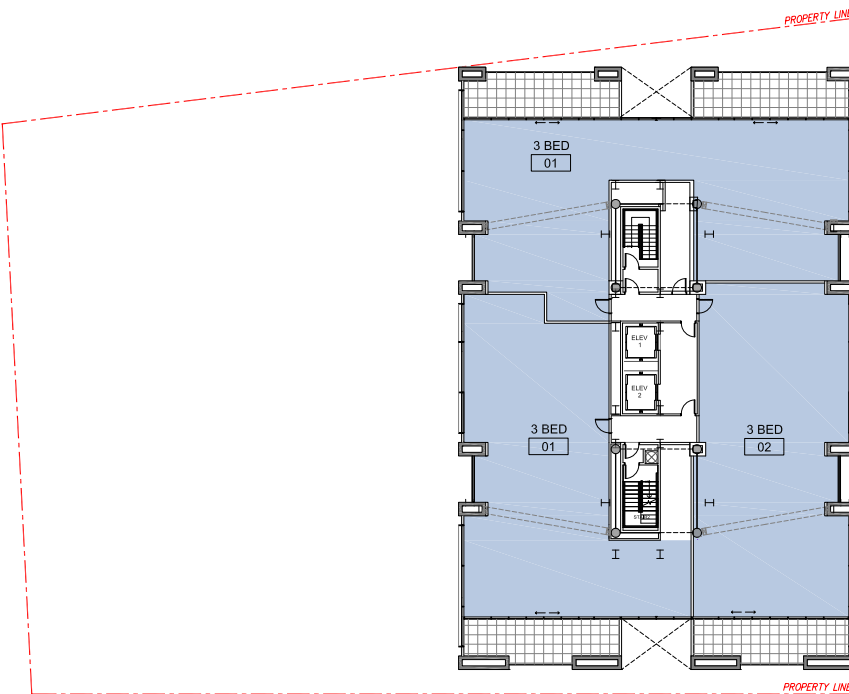
Figure 7
Floor Plans, Levels 4 and 6



Source: RAD Build



Typical Residential Floor Plan



Floor Plan Level 29

Figure 8
Residential Floor Plans



Source: RAD Build

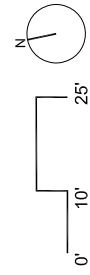
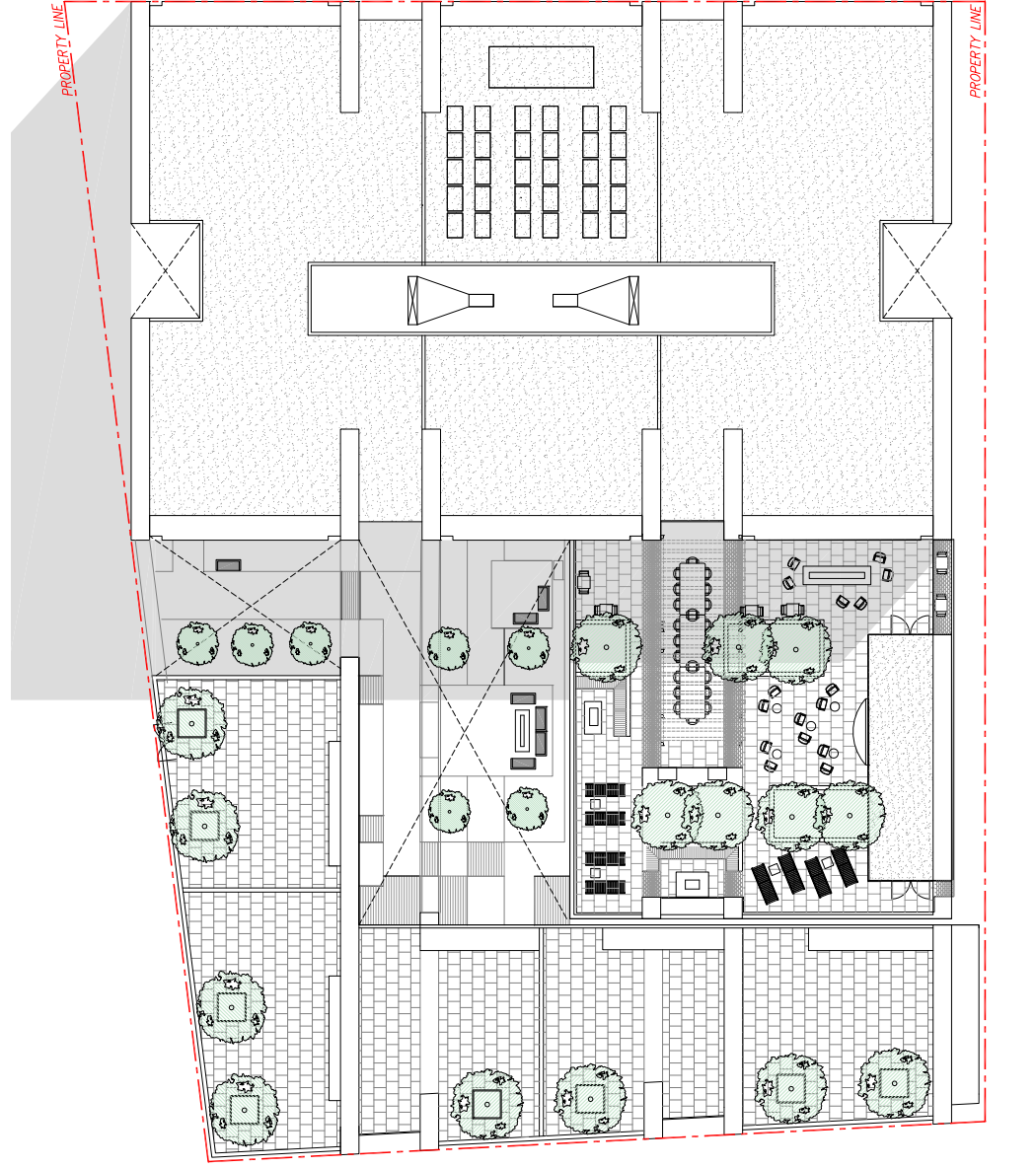


Figure 9
Roof Plan



Source: RAD Build, and Pamela Burton Company (landscape)

Applicable Provisions of the CEQA Guidelines.

CEQA Guidelines Section 15332 - Infill Development. Projects that meet the criteria of this section of the CEQA Guidelines are exempt from further environmental review provided that none of the exceptions to the use of the exemption, as set forth in Guidelines Section 15300.2, is present or applicable.

CEQA Guidelines Section 15183 - Projects Consistent with a Community Plan, General Plan or Zoning. A Project that can demonstrate its consistency with the development density established by existing zoning, community plan or general plan for which an EIR was certified does not require additional environmental review except as necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site. The previously certified EIRs that are relevant to the Project are:

Oakland General Plan Land Use and Transportation Element (LUTE) EIR (1998);

2010 Housing Element Update EIR and 2014 EIR Addendum; and,

Central District Urban Renewal Plan Amendments EIR (2011 Redevelopment Plan Amendments EIR)

CEQA Guidelines Section 15180 - Redevelopment Projects. This section of the CEQA Guidelines states that if an EIR prepared for a Redevelopment Project is a Program EIR then "...subsequent activities in the program will be subject to the review required by Section 15168." Section 15168 provides that "Subsequent activities in the program must be examined in light of the program EIR to determine whether an additional environmental document must be prepared. An additional environmental document is required if the later activity would have effects that were not examined in the program EIR; however, if, in accordance with the provisions of Section 15162, no new effects could occur or no new mitigation measures would be required, the City can approve the project as being within the scope of the Redevelopment Plan covered by the program EIR and no new environmental document is required.

Section 15183.3 - Streamlining for Infill Projects. This section of the CEQA Guidelines provides for streamlined environmental review for eligible infill projects by limiting the topics subject to review in cases where the environmental effects of infill development have been addressed in a planning level decision or by uniformly applicable development policies. In this case, the "planning level decision" consists of the three policy documents mentioned above: the Oakland LUTE, the latest City of Oakland Housing Element, and the Central District Urban Renewal Plan Amendments and their corresponding EIRs. Further, the "uniformly applicable development policies" are the City of Oakland's Standard Conditions of Approval ("SCAs") which may be used in conjunction with both the Class Category 32 Infill Exemption and the Section 15183 Streamlining provision, as necessary, to mitigate impacts addressed as significant in a prior EIR unless new information shows that the new standards will not substantially mitigate the environmental effect. (CEQA Section 15332 (c) and Section 15183 (f)). The City's adopted SCAs that are relevant to this project are presented in Appendix A.

Section 1. CEQA Categorical Exemption

Class 32 (In-Fill Development)

CEQA Exemption

Among the classes of projects that are exempt from environmental review under CEQA Guidelines §15332 are projects identified as urban infill development that meet 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.*

Exceptions to the Exemption

CEQA Guidelines Section 15300.2 provides that a categorical exemption such as for Infill Development as described above cannot be used if any exceptions to the use of the exemption are found to be present. Applicable exceptions are any of the following:

- (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 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 Exemption Checklist

The following analysis shows 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 high-rise mixed-use development including ground-floor retail or restaurant space, multiple floors of conventional office space and 22 floors of residential apartments plus a penthouse floor; this mix of land uses is consistent with the CBD intent.

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.

The Project provides for approximately 5,400 square feet of ground-level, pedestrian-oriented, active storefront retail uses in three separate spaces, one of which is situated at the corner of Webster and 21st

Street; the other two are the first floor of the low rise townhouse portion of the Project, one facing 21st Street and the other facing Franklin Street. At least one of these three commercial spaces is likely to end up as a restaurant. 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 181 residential units on a parcel of 25,568 gross square feet, the Project's residential density is approximately 141 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
- The height of the ground floor level is 15 feet, meeting the minimum height of ground floor active storefront retail use of 15 feet pursuant to Planning Code Table 17.58.03.
- The base of the tower, comprising the ground floor lobbies and commercial spaces, the office floors and the 6th floor amenity space, uses two floors of windows at a height of 77 feet from ground level to create a visual break, as seen from the south elevation; from that point to the top of the building, the façade retains a consistent pattern of solids and indentations, holding to a firm rectangular form, with no further changes in the shape or massing of the upper portion of the building. Accordingly, the base building element complies with the provisions in Planning Code, Table 17.58.04 which call for a building base of up to 85 feet.
- The floor plate for each level of the tower portion of the building is approximately 10,500 square feet (or 41% of the gross lot area), less than the 75% maximum per story lot coverage for floors above the base established pursuant to the Planning Code, Table 17.58.04.
- With a minimum of 14,480 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 pursuant to Planning Code Section 17.58.070.
- At a total of nearly 326,000 square feet of total floor area and a height of 353.5 feet, the Project is greater than 200,000 square feet of new floor area which is the threshold above which a Conditional Use Permit is required pursuant to Planning Code Section 17.58.030: Conditional Use Permits for Large Projects. The Project application includes a request for a Conditional Use Permit.

Given these facts, and assuming the minor variances are granted, 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**). Given these facts, 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. No natural vegetation (e.g., grass, shrubs or trees) exists. Consequently, the Project site does not provide habitat for endangered, rare or threatened species. Given these facts, 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.

This section consists of a Transportation Impact Study prepared by Fehr & Peers that evaluates the transportation-related impacts of the Project. As presented below, the Project would not result in any significant transportation-related impacts, and there is no exception to the Class 32 exemption relative to traffic or transportation criteria.

Project Analysis

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 (Steinberg2013) 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, 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.

Vehicle Miles Travelled (Criteria band c)

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 in 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. For example: a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work, she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. The tour-based approach would add up the total amount driven and assign the daily VMT to this resident for the total number of miles driven on the entire "tour." Based on the MTC Travel Model, the regional average daily VMT per 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 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 Stop² and satisfies the following:
 - a. Has a Floor Area Ratio (FAR) of more than 0.75.

² 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

- 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

Since the project would provide less than 50,000 square feet of retail space, the retail is considered to be local-serving and the VMT per worker criterion is used to screen the VMT for the commercial component of the project.

1. **Criterion #1:** As shown in Tables 2 and 3, the project would generate more than 100 trips per day and therefore does not meet criterion #1.

Vehicular Trip Generation

Trip generation is the process of estimating the number of vehicles that would likely access the project on any given day. Since the project site includes existing uses that would be demolished, the trip generation accounts for the trips generated by the current site that would be eliminated.

Table 2 presents the estimated trip generation for the proposed project. 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.

ITE's Trip Generation Manual (Ninth Edition) is primarily based on data collected at single-use suburban sites where the automobile is often the only travel mode. However, the project site is in a dense mixed-use urban environment where many trips are walk, bike, or transit trips. Since the project is about 0.2 miles from the 19th Street BART Station, this analysis reduces the ITE based trip generation by 43 percent to account for non-vehicular trips. This reduction is consistent with the City of Oakland's Transportation Impact Study Guidelines and is based on the Bay Area Travel Survey (BATS) 2000 which shows that the non-automobile mode share within one-half mile of a BART Station in Alameda County is about 43 percent. This reduction is further confirmed by a 2011 research study which found that reducing ITE based trip generation using BATS data results in a more accurate estimation of trip generation for urban mixed-use developments versus using ITE based trip generation alone.

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. According to ITE's Trip Generation Handbook (3rd Edition), the average weekday PM peak hour pass-by reduction is 43 percent for restaurant. An overall reduction of

21 percent was assumed for daily trips for the restaurant use. No pass-by reductions were applied to the AM peak hour.

As presented in **Table 2**, the net trip generation for the proposed development is approximately 1,280 daily, 127 AM peak hour, and 112 PM peak hour trips.

Table 2: Project Vehicle Trip Generation									
Land Use	Units ¹	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single Family	5	210 ²	50	1	3	4	3	2	5
Apartment	179	220 ³	1,210	18	74	92	76	41	117
Restaurant	5.4 KSF	932 ⁴	690	32	26	58	32	21	53
Office	57.9 KSF	710 ⁵	870	109	15	124	24	120	144
<i>Subtotal</i>			2,820	160	118	278	135	184	319
Existing Office	21 KSF	710 ⁵	-410	-48	-7	-55	-17	-85	-102
<i>Proposed Project Trip Generation</i>			2,410	112	111	223	118	99	217
Non-Auto Reduction (-43%) ⁶			-1,040	-48	-48	-96	-51	-42	-93
<i>Subtotal</i>			1,370	64	63	127	67	57	124
Pass-by-reduction ⁷			-90	0	0	0	-6	-6	-12
Adjusted Project Trips			1,280	64	63	127	61	51	112

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 210 (Single-Family - Adj. Streets, 7-9 AM, 4-6 PM):
Daily: $T = 9.52 \times (X)$
AM Peak Hour: $T = 0.75 \times (X)$ (25% in, 75% out)
PM Peak Hour: $T = 1.00 \times (X)$ (63% in, 37% out)
3. ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):
Daily: $T = 6.06 \times (X) + 123.56$
AM Peak Hour: $T = 0.49 \times (X) + 3.73$ (20% in, 80% out)
PM Peak Hour: $T = 0.55 \times (X) + 17.65$ (65% in, 35% out)
4. ITE Trip Generation (9th Edition) land use category 932 (High-Turnover (Sit-Down) Restaurant):
Daily: $T = 127.15 \times (X)$
AM Peak Hour: $T = 10.81 \times (X)$ (55% in, 45% out)
PM Peak Hour: $T = 9.85 \times (X)$ (60% in, 40% out)
5. ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):
Daily: $\ln(T) = 0.76 \times \ln(X) + 3.68$
AM Peak Hour: $\ln(T) = 0.80 \times \ln(X) + 1.57$ (88% in, 12% out)
PM Peak Hour: $T = 1.12 \times (X) + 78.45$ (17% in, 83% out)

6. The 43% reduction is based on data from the City of Oakland Transportation Impact Study Guidelines for development in an urban environment within 0.5 miles of a BART Station.
 7. 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 of the reduction (21%) is applied to the daily trips.
- Source: Fehr & Peers, 2017

Non-Vehicular Trip Generation

Consistent with City of Oakland Transportation Impact Study Guidelines, Table 3 presents the estimates of project trip generation for all travel modes.

Table 3: Trip Generation by Travel Mode				
Mode	Mode Share Adjustment Factors ¹	Daily	Weekday AM Peak Hour	Weekday PM Peak Hour
Automobile	57.0%	1,280	127	112
Transit	30.4%	680	68	60
Bike	3.9%	90	9	8
Walk	23.0%	520	51	45
Total Trips		2,570	255	225

1. Based on City of Oakland Transportation Impact Study Guidelines assuming project site is in an urban environment within 0.5 miles of a BART station.
- Source: Fehr & Peers, 2017.

2. **Criterion #2: Table 4** describes the 2020 and 2040 VMT for TAZ 971, the TAZ in which the project is located as well as applicable VMT thresholds of 15 percent below the regional average.

Table 4: 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	4.5	4.1
Office and Commercial (VMT per worker) ²	2.18	18.5	20.3	17.3	12.7	12.0

1. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerCapita and accessed in March 2017.
 2. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in March 2017.
- Source: Fehr & Peers, 2017.

As shown in **Table 4**, the 2020 and 2040 average daily VMT per capita and VMT per worker in the project TAZ is more than 15 percent below the regional averages. Therefore, it is presumed that the proposed project would not result in substantial additional VMT and project impacts on VMT would be less-than-significant.

3. **Criterion #3:** The project would be located about 0.2 miles from the 19th Street BART Station and within 0.3 miles of frequent bus service along Broadway and 20th Street. The project would satisfy Criterion #3 because it would meet the following three conditions for this criterion:
- The proposed project would have an FAR of 12.8 (including residential, office, and commercial uses), which is greater than 0.75.
 - The project would include 86 parking spaces for the project residents, which corresponds to less than 0.5 parking spaces per unit. Per the City of Oakland Municipal Code Sections 17.116.060, 17.116.080, and 17.116.310 for the CBD-C zone, the project is not required to provide any parking spaces but is allowed to provide up to one space per dwelling; all spaces must be unbundled meaning sold or rented separately from the dwelling units. The proposed parking supply is within the supply range allowed by the Municipal 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 allowed by the 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.

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

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 the use of non-automobile transportation modes by providing residential and commercial uses in a dense, walkable urban environment that is well-served by local and regional transit, and providing minimal parking for the

residential component of the project and no parking for the non-residential components of the project.

The proposed 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 and would not adversely affect installation of future facilities. Further, because the proposed project would generate more than 50 peak hour trips, preparation and implementation of a TDM Plan is required for the proposed project (see SCA-TRANS-1: Transportation and Parking Demand Management (#71) in Attachment A).

Overall, the proposed 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.

Vehicle Access and On-Site Circulation

The proposed project would include a two-level parking garage which would be accessed through a right-in/right-out only driveway on Webster Street, approximately 110 feet south of 21st Street. The garage would provide 86 parking spaces for project residents with 82 stacker parking spaces, two ADA spaces, a car share space, and a regular parking space. A gate at the driveway would restrict access into and out of the garage.

Loading for the proposed project would be provided in the garage through the residential gate and driveway. Trucks would back into the loading space from Webster Street and head out of the driveway. Both the garage and loading driveways would be served through one curb-cut on Webster Street.

The proposed project driveway would provide adequate sight distance between exiting motorists and pedestrians on the adjacent sidewalk because it would provide a clear line-of-sight between a motorist ten feet back from the sidewalk and a pedestrian 10 feet away on each side of the driveway. The garage driveway would also provide adequate sight distance between exiting motorists and automobiles and bicycles traveling on southbound Webster Street.

Bicycle Access and Bicycle Parking

Chapter 17.117 of the Oakland Municipal Code requires long-term and short-term bicycle parking for new buildings. Long-term bicycle parking includes lockers or locked enclosures and short-term bicycle parking includes bicycle racks. The Code requires one long-term space for every four multi-family dwelling units and one short-term space for every 20 multi-family dwelling units. Office uses are required to provide one long-term space for every 10,000 square feet of floor area and one short-term space for every 20,000 square feet of floor area. Also, the code requires the minimum level of bicycle parking, two long and short-term spaces, for the retail component of the project.

Table 5 summarizes the bicycle parking requirement for the proposed project. The proposed project is required to provide 54 long-term and 14 short-term bicycle parking spaces. The project would

provide 46 long-term bicycle parking spaces for the project residents in a secure bicycle room in the basement that can be accessed through the residential lobby and elevators or the project driveway. The project would provide 10 long-term bicycle parking spaces for the non-residential components of the project in a secure bicycle room also in the basement that can be accessed through the office lobby and elevator/stairs, or the project driveway. The project proposes 14 bicycle racks on sidewalks along the project frontage on 21st and Webster Streets near the building lobbies. The project would satisfy the City's bicycle parking requirements. Chapter 17.117.070 of the Oakland Municipal Code specifies location and design standards of required bicycle parking. Long-term bicycle parking must be on-site, or within 500-feet of the building entrance, and short-term parking must be within 50-feet of the building entrance. The bicycle parking areas should be well-lit and not impede pedestrian accessibility.

An existing southbound Class 2 bicycle lane is provided on Webster Street adjacent to project site.

Table 5: Bicycle Parking Requirements					
Lane Use	Size ¹	Long-Term		Short-Term	
		Spaces per Unit ²	Spaces	Spaces per Unit ²	Spaces
Residential	184 DU	1:4 DU	46	1:20 DU	9
Retail (assumed restaurant)	5.4 KSF	minimum	2	minimum	2
Office	57.9 KSF	1:10 KSF	6	1:20 KSF	3
Total Required Bicycle Spaces		-	54	-	14
Total Bicycle Parking Provided		-	56	-	14
Bicycle Parking Surplus		-	2	-	0

¹ DU = Dwelling Unit; KSF = 1,000 square feet.

² Based on Oakland Municipal Code Section 17.117.090 and 17.117.110.

Source: Fehr & Peers, 2017.

Pedestrian Access and On-Site Circulation

The residential, retail, and office uses would have separate entrances. The retail spaces would have direct access on Webster Street, 21st Street, and Franklin Street. The residential and office components of the proposed project would be accessed through separate lobbies on 21st Street and Webster Street, respectively. Each lobby would include elevators and stairwells that connect to the respective spaces and between lobbies, as well as the garage. Webster, 21st, and Franklin Streets currently have 10-foot wide sidewalks along the project frontage. Signs and parking meters adjacent to the street narrow the through-passage zone to a minimum of 6.7 feet. The proposed project does not propose any changes to these streets.

Currently, diagonal curb ramps are provided on all corners and marked crosswalks are provided across all approaches of 21st Street/Franklin Street and 21st Street/Webster Street intersections. The 21st Street/Franklin Street intersection currently provides count-down pedestrian signal heads in both directions of all four pedestrian crossings at the intersection. The 21st Street/Wester Street intersection provides only one pedestrian signal head on each side of Webster Street for the northbound direction.

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 project site is 19th Street BART Station, about 0.2 miles west of the project site. 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 routes 12, 51A, and 851, and the Free B shuttle along Broadway with stops between Grand Avenue and 20th Street, approximately 0.2 mile from the project site. Also, AC Transit operates routes 11, 18, 72, 72M, 72R, 800, 802, 805, and NL along 20th Street with stops between Telegraph Avenue and Harrison Street, approximately 0.2 mile from the project site.

No changes to the bus routes operating in the vicinity of the proposed project are planned and access between these bus stops and the proposed project would not modify access between the project site and these bus stops.

Emergency Access

The proposed project is not expected to result in inadequate emergency access because it would not interfere with vehicle traffic and emergency access off of the public street. Therefore, the proposed project is not expected to cause a change to the emergency access points for the project site and surrounding parcels.

Automobile Parking Requirements

Table 6 presents the off-street automobile parking requirements for the proposed project as provided in the City of Oakland Municipal Code. According to Section 17.116.060, the residential component of the proposed project has no minimum required parking and a maximum of one and one-quarter parking spaces allowed per residential unit.

Table 6: Automobile Parking Code Requirements					
Land Use	Size ^a	Required Parking Supply		Provided Parking Supply	Within Range?
		Minimum	Maximum		
Residential ^b	184 DU	0	230	86	Yes
Retail ^c	5.3 KSF	0	18	0	Yes
Office ^c	57.9 KSF	0	116	0	Yes
Total		0	364	86	Yes

a. 1 DU = Dwelling Units; KSF = 1,000 square feet

b. City of Oakland off-street parking requirement for residential in zone CBD-C is a minimum of zero spaces and a maximum of one and one quarter spaces per unit (section 17.116.060).

c. City of Oakland off-street parking requirement for office and retail uses in zone CBD-C is a minimum of zero spaces and a maximum of one space per 300 square foot of ground floor area and one space per 500 square foot of above-ground floor area (Section 17.116.080).

Source: Fehr & Peers, 2017

Section 17.116.080 establishes zero minimum parking requirements for the office and retail components of the proposed project, with maximum allowable parking of one space per 300 square feet of the ground floor retail area and one space per 500 square feet of the above ground office space.

Loading Requirements

City Municipal Code Section 17.116.120 requires off-street loading facilities for residential uses and Section 17.116.140 requires off-street loading facilities for commercial uses. The requirement for residential facilities that have more than 50,000 square feet of floor area is one off-street loading berth. The City Municipal Code requires no loading berth for office developing area less than 40,000 square feet and a loading berth for developing area between 40,000 and 60,000 square feet. Also, the City Municipal Code requires no loading berth for retail space less than 25,000 square feet. Based on City Code, the proposed project is required to provide one off-street loading berth for the residential and one for the office component of the proposed project and no berth for retail component. The proposed project provides only one loading berth. The Project application requests a minor variance to allow only one loading berth when two are required. With approval of the variance, the proposed project would meet the City's loading requirement.

Conclusions

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

Further, implementation of SCA TRANS-3: Transportation and Parking Demand Management would be applicable to the proposed project and would ensure that transportation and circulation-related impacts associated with the proposed project would be less than significant (see Attachment A).

Based on the foregoing analysis, 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**, **SCA TRANS-2: Bicycle Parking**, and **SCA TRANS-3: Transportation and Parking Demand Management** as identified in Attachment A.

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 for this project because the proposed project would be subject to the City's SCAs related to construction and operational noise levels with regard to noise impacts on others. 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: Project-Specific Construction Noise Reduction Measures**, **SCA NOI-5: Construction Noise Complaints**, **SCA NOI-6: Exposure to Community Noise**, **SCA NOI-7: Operational Noise**, and **SCA NOI-8: Vibration Impacts on Adjacent Historic Structures or Vibration-Sensitive Activities**), the project would not result in significant effects related to noise and vibration. 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 proposed project (see Attachment B), 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*.³

The City of Oakland utilizes BAAQMD's screening criteria to provide a conservative indication of whether a Project could result in potentially significant air quality impacts related to construction and operational

³ BAAQMD, *California Environmental Quality Act Air Quality Guidelines*. May, 2011, updated in May 2017.

emissions. If the Project's various land use types (i.e., number of apartment units, square footage of office space and square footage of retail space) are below the screening criteria, quantification of the Project's air pollutant emissions is not necessary to make a determination that the impact would be less than significant. The Project's 184 dwelling units are well below the operational criteria pollutant screening size of 510 dwelling units for a high rise apartment building (36%) and below the construction criteria pollutant screening size of 249 units (74%). The Project's approximately 58,000 square feet of "general office" space is below the operational criteria pollutant screening size of 346,000 square feet (17%) and below the construction criteria pollutant screening size of 277,000 square feet (21%). And the Project's 5,400 square feet of retail space is well below the screening levels of 277,000 square feet (construction – 2%) and 99,000 square feet (operational – 5%). Therefore, the Project is well below operational and construction criteria air pollutant screening standards and would not have significant Project-specific impacts related to operational and construction criteria emissions. However, since the CalEEE model was utilized to analyze greenhouse gas emissions, modeling was conducted on construction and operational emissions for criteria pollutants and ozone precursor emissions, to confirm the conclusions drawn from application of the project size screening level.

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 established by BAAQMD in June 2010, 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 2017). The significance thresholds identified by BAAQMD and used in the air quality analysis are summarized in **Table 7**, below.

Table 7. 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, NO _x = 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.			

Construction Period Emissions

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM₁₀ 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 Air Quality Guidelines and the City of Oakland consider these impacts to be less than significant if best management practices (BMPs) are implemented to reduce these emissions. Implementation of the City of Oakland's Standard Conditions of Approval related to construction period impacts, SCA AIR-1, would ensure these impacts are less than significant.⁴

The proposed Project land uses were input into CalEEMod, which included: 184 dwelling units entered as "Apartment High Rise," 60,668 square feet (sf) entered as "General Office Building," 5,348 sf entered as "Strip Mall," and 86 spaces entered as "Enclosed Parking with Elevator" on a 0.37-acre site.

Table 8 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 8. Construction Period Emissions				
Scenario	ROG	NOx	PM ₁₀ Exhaust	PM _{2.5} Exhaust
Total construction emissions (tons)	3.62 tons	8.45 tons	0.43 tons	0.41 tons
Average daily emissions (pounds) ¹	13.9 lbs.	32.5 lbs.	1.6 lbs.	1.6 lbs.
BAAQMD Thresholds (pounds per day)	54 lbs.	54 lbs.	82 lbs.	54 lbs.
Exceed Threshold?	No	No	No	No
Notes: ¹ Assumes 520 workdays.				

Source: Illingworth & Rodkin Air Quality and GHG Emissions Assessment, Attachment [E-B](#) to this CEQA document.

As noted above, the Project would be required to comply with applicable SCAs related to construction emissions – particularly SCA AIR-1. Implementation of the 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 the 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-

⁴ Note that SCA Air-1 is the same as SCA 19 as referenced in the Illingworth & Rodkin technical report, included herein as Attachment B.

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 hotel occupants 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.

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 21,000 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 allows the user to enter specific vehicle trip generation rates, which were input to the model using the daily trip generation rate provided in the project traffic report. These included the pass-by reductions and reductions for nearby transit. The default trip lengths and trip types specified by CalEEMod were used.

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 a diesel-powered 1000 Kw emergency back-up generator that would be included as part of the project, for

use in emergency conditions. The generator would be operated for testing and maintenance purposes, with a maximum of 50 hours each 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 9 reports the predicted emissions in terms of annual emissions in tons and average daily operational emissions, assuming 365 days of operation per year. As shown in Table 7, average daily and annual emissions of ROG, NO_x, PM₁₀, or PM_{2.5} emissions associated with operation would not exceed the BAAQMD significance thresholds.

Table 9. Operational Emissions				
Scenario	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Annual Operational Emissions	2.22 tons	3.41 tons	1.36 tons	0.40 tons
Existing Emissions	0.20 tons	0.72 tons	0.29 tons	0.08 tons
Net Project Emissions	2.02 tons	2.69 tons	1.07 tons	0.32 tons
<i>BAAQMD Thresholds (tons /year)</i>	<i>10 tons</i>	<i>10 tons</i>	<i>15 tons</i>	<i>10 tons</i>
<i>Exceed Threshold?</i>	No	No	No	No
Average Daily Net Project Operational Emissions (pounds) ¹	11.1 lbs.	14.7 lbs.	5.9 lbs.	1.8 lbs.
<i>BAAQMD Thresholds (pounds/day)</i>	<i>54 lbs.</i>	<i>54 lbs.</i>	<i>82 lbs.</i>	<i>54 lbs.</i>
<i>Exceed Threshold?</i>	No	No	No	No
¹ Assumes 365-day operation.				

Violate Air Quality Standards

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. 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 1,280 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 have 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 community health risk from siting a new sensitive receptor or a new source of TACs. Sources of TACs that would be part of the project and that could affect nearby sensitive receptors include the emissions from the back-up generator and dust and equipment exhaust emitted on a temporary basis during construction.

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 PM_{2.5} concentrations of 0.8 µg/m³, 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 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 to which future residents of the project would be exposed, including high volume roadways and stationary sources within 1,000 feet of the project site, are seen in **Figure 13**. The local roadways include Franklin Street, Webster Street, 21st Street, Broadway, and Thomas Berkeley Way. Stationary sources of TACs consist of fourteen (14) identified sources listed and permitted by BAAQMD.

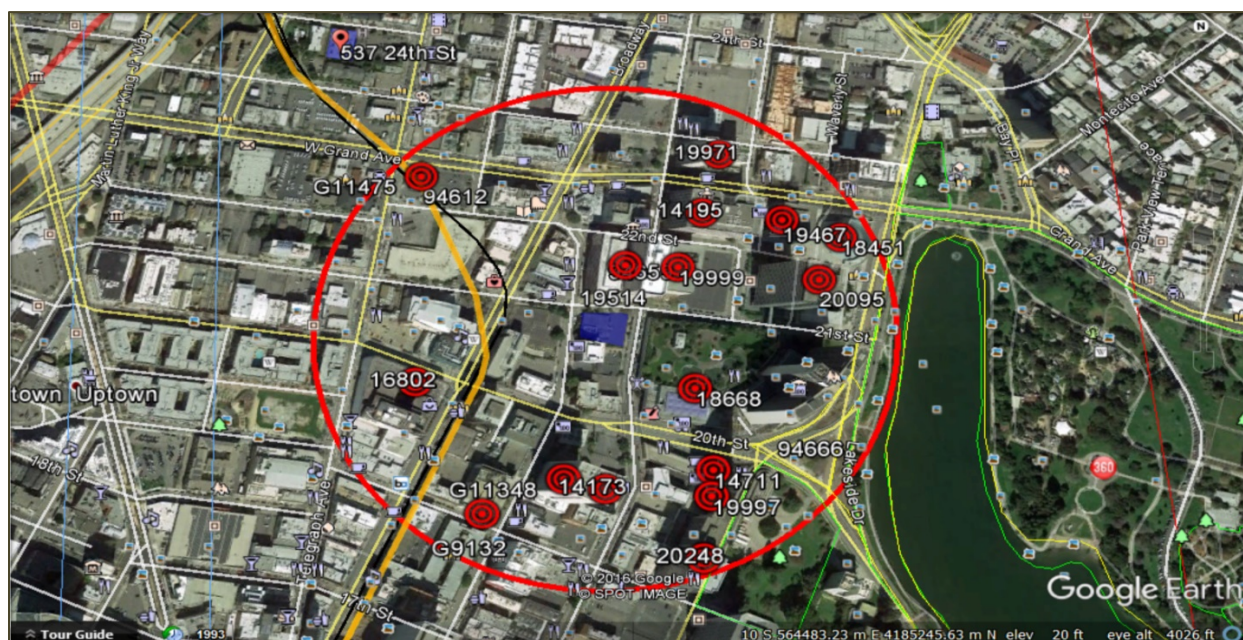
With regard to TACs from high volume roadway traffic volume, the Illingworth & Rodkin air quality study (**Attachment B**) used the BAAQMD Roadway Screening Analysis Calculator which resulted in an estimated cancer risk of 1.29 per million, PM_{2.5} concentration would be 0.03 µg/m³, and chronic or acute HI for the roadway would be below 0.03. These results indicate exposure to TACs from nearby high volume roadways would be less than significant.

With regard to stationary sources of TACs, BAAQMD's *Stationary Source Screening Analysis Tool* was used to identify stationary sources that may affect future residents at the site. A total of fourteen sources were identified. One was determined to have zero risk and was not included in the analysis. The maximum modeled annual average DPM concentrations occurred at third floor level of the project townhome residences and was found to be 0.0033µg/m³. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 1.0 in a million. The air quality and health risk assessment presented in Attachment B also included the potential effects from the diesel powered back-up generator that would be installed as part of the project. Computer modeling

as described in Attachment B provided output showing maximum annual PM2.5 concentration of 0.0032 $\mu\text{g}/\text{m}^3$ and maximum cancer risk based on the maximum modeled DPM concentration at 2.4 in one million. The maximum on-site residential HI would be less than 0.001.

The combination of impacts from all sources at the receptor most impacted or considered the Maximally Exposed Individual (MEI), including TACs from mobile and stationery sources were found to have a combined cancer risk below the threshold of 100 chances per million, the annual PM_{2.5} concentration below 0.8 µg/m³ and the Hazard Index well below 10.0.

Figure 13. TAC Influence Area



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

Impacts to Off Site Receptors from Project Construction Activity and the Project's Backup Generator

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of respirable particulate matter (PM10) and PM2.5. 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. SCA Air-1 would serve as best management practices (BMPs) for this project. Since the Project includes demolition, Enhanced Measures are required under SCA Air-1 which, as noted above, 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 Air-1 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.

The analysis presented in **Attachment B** also considered the effects on off-site sensitive receptors from emissions generated by the Project's back-up diesel powered electric generator during testing and maintenance activities. The maximum concentrations occurred at a receptor to the north of the project site and was found to be less than 0.001 µg/m.³ The maximum cancer risk based on the maximum modeled DPM concentration was calculated as 0.05 in one million. The maximum on-site residential HI would be less than 0.001. Increased cancer risks, PM2.5 concentrations, and HIs at all sensitive receptors from operation of the Project emergency generator would all be well below BAAQMD significance thresholds.

In regard to the cumulative effect of TAC sources, impacts from the high volume roadway and stationary sources were also computed at the maximally impacted off-site receptor; the cumulative impact were determined to be less than significant.

As also described in Attachment B, implementation of the City of Oakland's SCAs would lessen the Project's impacts related to construction-phase criteria pollutant emissions and cumulative health risks from TAC emissions posed by the project. With the implementation of the required SCAs listed in Attachment A (for reference, these are **SCA AIR-1: Construction-Related Air Pollution** [Dust and Equipment Emissions] and **SCA AIR-2: Exposure to Air Pollution** [Toxic Air Contaminants]), the Project would not result in significant effects related to air quality. Therefore, the Project is consistent with Section 15332(d), air quality.

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 980 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 south/south-southeast and was encountered at depths between 4 to 14 feet.⁵ The Project does not have the potential to directly affect the water quality of any surface water bodies. 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 means it is outside of the 100-year or 500-year floodplain, based on the Flood Insurance Rate Map produced by FEMA.⁶

⁵ Phase I Environmental Site Assessment, 2044 Franklin St, prepared by Geocon Consultants, February 2016, p. 6.

⁶ FEMA Flood Map 06001C0067G, available at <https://msc.fema.gov/portal/search#searchresultsanchor>. Accessed April 6, 2017

The Project will be built on a site area of 25,568 sf, of which 23,832 is existing impervious surface. The Project will replace that entire amount of impervious surface, and add another 1,070 sf of impervious surface, totaling 24,902 sf. 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 treatment for all existing, new and/or replaced impervious surfaces onsite.

The Project is categorized as a Type B Larger Infill Project under the criteria in the Alameda County Stormwater Manual, Appendix J (Special Projects), and its FAR of 12.8 qualifies it to treat 100% of project runoff using non-Low Impact Development (LID) measures. The Project will install one or more media filter devices to treat runoff from the roof and podium levels. Site design measures will include plumbing interior floor drains to the sewer, covering the trash/recycling area, and plumbing these areas to the sanitary sewer. Stormwater quality features will be sized to comply with Provision C.3 of the Municipal Regional Stormwater Permit. The proposed media filter has been sized 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 proposed Project adds approximately 1,070 sf of new impervious surface. The pre-development peak runoff flow rate for a 10-year storm event, calculated per the City of Oakland stormwater guidelines, is approximately 1.81 cubic feet per second (cfs). The post-development peak runoff for a 1-year storm even is approximately 1.87 cfs.⁷ This increase of 0.06 cfs does not warrant additional flow control measures.

Since 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 and SCA-HYD-2), the Project would comply 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.

⁷ Applicant Stormwater Control Plan. February 23, 2017.

Criterion Section 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. The Project applicant would pay all fees in accordance with the City's Master Fee Schedule to fund utility improvements as required.

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 13,520 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. However, there are no environmental resources of hazardous or critical concern that are designated, precisely mapped or officially adopted in the vicinity of the Project site, or that could be adversely affected by the Project

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/winds, 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, and 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 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 not re-consider cumulative effects.

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 is not visible from a state scenic highway. The nearest scenic highway, the Macarthur Freeway (I-580) is located approximately 0.9 miles east-northeast. While the Project site would be visible from that freeway, drivers will experience the Project as an addition to the existing skyline of the City; 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 & II Environmental Site Assessments (ESA) have been prepared for the site.⁸ 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

⁸ Geocon Consultants, Inc., *Phase I Environmental Site Assessment, Commercial Property 2044 Franklin Street Oakland, CA.*, February 2016

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 is listed as Bank of America on the California HAZNET database, which maintains a list of hazardous waste manifests received by the California Department of Toxic Substances Control (DTSC). According to the information listed on the HAZNET database, this facility generated asbestos-containing waste in 1994 and 2014, unknown waste in 2012, and other inorganic solid wastes in 1998, which were transported offsite to a landfill or transfer station for disposal.

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

- Groundwater collected from the public right-of-way adjacent to the west and east of the site suggests that elevated concentrations of total petroleum hydrocarbons (TPH) may be present beneath the site, which could be encountered during construction activities such as soil excavation or groundwater dewatering activities.
- City directory listings include a garage, auto service and/or Hertz rental car location at the site in 1925, 1928 and 1933. Given the presence of elevated TPH identified at two locations adjacent to the site, it is reasonably likely that USTs and/or residual contamination are present in soil and groundwater beneath the site, and could be encountered during demolition and construction excavation activities.
- A hydraulic elevator is present in the southwestern portion of the site building. Given the age of the building, constructed between 1962 and 1967, the subsurface cylinders may have leaked potentially releasing PCB-containing hydraulic oil to soil and groundwater beneath the Site.⁹

The Phase I ESA noted that the absence of UST records does not guarantee USTs were not present on or adjacent to the Site. Therefore, a subsurface survey of the site parking lot, sidewalks and basement was conducted during site reconnaissance using ground-penetrating radar (GPR) to look for USTs at the site. The GPR unit was able to scan areas to a depth of approximately four feet, due to subsurface conditions at the site. Abnormalities indicating the possible presence of USTs were not identified in any areas scanned at the site. However, USTs may be present at deeper depths onsite; the UST discovered during construction of the Center Twenty-One building north of the site at 2100 Franklin was encountered at a depth of approximately eight feet beneath the sidewalk.

Given the grab-groundwater analytical results from two borings adjacent to the site and the site's land use history, especially in the 1920s and 1930s, it is still considered likely that residual contamination or

⁹ As defined by the American Society for Testing and Materials (ASTM), a recognized environmental condition (REC) is "the presence of likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not [RECs]."

USTs may be present on the site. For this reason, a Phase II investigation was recommended, and subsequently conducted, to identify potential gross contamination in soil and/or groundwater at the Site.

The Phase II ESA of shallow soil and groundwater at the site detected impacts by TPH and metals in soil and groundwater at the site. The report included the following conclusions and recommendations:

- The detected concentrations did not appear to be indicative of gross contamination beneath the site; however, treatment of groundwater may be required prior to discharge if redevelopment activities involve dewatering.
- Gross contamination was not identified in soil or grab-groundwater samples collected from the boring at the nearest available location to assess a potential release from the onsite hydraulic elevator. This boring, however, was located approximately 35-40 feet from the hydraulic elevator, too great of a distance to determine if a localized release has occurred. If contamination is observed in soil during excavation activities in the elevator location, the impacted soil should be removed/mitigated in accordance with regulatory oversight.
- Though gross contamination was not discovered at the site, the investigation was limited and the authors recommend contingency planning for the encounter of gross contamination beneath the Site surface, such as preparing a soil and groundwater management plan (SGMP).
- It may also be prudent to provide technical environmental oversight and documentation during site excavation activities and building slab demolition, in the event that contamination is encountered.
- Any subsurface features or contamination should be properly removed/mitigated in accordance with the SGMP and/or local environmental regulatory agency.

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)**; **SCA HAZ-2 (Hazardous Building Materials and Site Contamination)**; and **SCA-HAZ-3 (Hazardous Materials Business Plan)**. The Applicant has already prepared the Environmental Site Assessments required in part (b) of SCA HAZ-2. 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 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 City of Oakland's Cultural Heritage Survey (OCHS) assigned the site a rating of *3, which means the existing office building is not within the boundaries of a historic district and has not been rated. The building is now approximately 50 years old. The building is not located 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. Since the building does not meet the criteria for listing in the California Register of Historical Resources, nor is it a resource previously identified in Oakland's Local Register of Historic Resources, it is not a historic resource under CEQA. Therefore demolishing the building to accommodate new construction on the site would not constitute an impact to a historic resource.

Adjacent Cultural Resources

The Project site is located across Webster Street from 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 directly across Webster Street from the Project site. 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. Access is accessible 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 Lake Merritt District has been designated 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."¹⁰

The Project is a block away from the boundary of 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 Fox and Paramount Theaters, among other similarly distinguished historic buildings. Architecturally

¹⁰ Historic Resources Inventory, California Department of Parks and Recreation, prepared by the Oakland Cultural Heritage Survey, 1986.

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.¹¹

The Project would not materially impair any of the adjacent or nearby historic resources, either within the same block or in adjacent blocks. While the Project would be considerably taller than the existing building stock surrounding the site and would cast shadows on nearby historic resources (in particular, the Roof Garden, a contributor to the API), the extent of the shadows would not impair the integrity of the landscape architecture and thereby render that historic resource ineligible for inclusion in any federal, state or local registers. 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 removed from the site.¹² -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** and **SCA CULT-2** 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.

¹¹ 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.

¹² 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. The model has a default rate of 641.3 pounds of CO₂ per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The PG&E rate was updated to be the most recent rate reported by PG&E, which is 435 pounds of CO₂e per megawatt of electricity produced.¹³

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 190 based on approximately 3 employees per 1,000 sf of retail or office space. The number of future residences is estimated at 466

¹³ 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.

based on the latest US Census data of 2.53 average persons per household for the City of Oakland.¹⁴ The total service population was estimated as 656.

Construction Emissions

GHG emissions associated with construction were computed to be 1,456 MT of CO₂e 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 2,027 MT of CO₂e, which would exceed the BAAQMD significance threshold of 1,100 MT of CO₂e/year. Therefore, the service population threshold was used to determine the significance of this project. As shown in **Table 10**, service population emissions 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 Project is also required to determine if a GHG Reduction Plan is required in accordance with the City's 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).

¹⁴ 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 10. Annual Project GHG Emissions (CO ₂ e) in Metric Tons		
Source Category	Proposed Project 2021	Existing
Construction (amortized over 40 years)	36	-
Area	25	-
Energy Consumption	665	~0
Mobile	1603	95
Solid Waste Generation	103	357
Water Usage	68	10
Total	2500	11
Net Project Emissions	2,027 MT of CO₂e/year	
Per Capita Emissions	3.81	
BAAQMD Threshold	1,100 MT of CO₂e/year and 4.6 MT/capita	
Stationary Equipment	26	-
BAAQMD Threshold	10,000 MT of CO₂e/year	
Significant?	No	

- 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 the criteria under Scenario B because it includes deployment of a backup diesel generator and because it falls below the threshold of being a “Very Large Project” (>500 residential units). It does not meet the criteria under 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.

Aesthetics

The Project design includes an architectural light box at the top of the building, a feature designed to add visual interest to Oakland’s Downtown skyline. The solid panel behind the curtain wall would be

illuminated, emitting a translucent nighttime glow. This feature, while desirable from an aesthetic perspective, has the potential to attract and cause damage to birds during the normal migratory periods of the year, by increasing the risk of bird collision against the glass façade.

SCA AES-4 (City SCA #25, Bird Collision Reduction Measures) requires the use of a timing device that would turn off the illumination during the normal migratory period, thereby avoiding the potential disruption to migratory bird patterns. This SCA applies to any construction project which includes glass as part of the building's exterior and is located immediately adjacent to a recreation area or park larger than once acre and which contains substantial vegetation. The proposed Project is across Franklin Street from the Kaiser Rooftop garden, which is approximately 3.5 acres and heavily vegetated. Therefore, the Project will be required to comply with SCA AES-4.

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 since the Project's height is 100 feet or greater and because it is located in Downtown. The wind analysis must consider the Project's contribution to wind impacts to on- and off-site public and private spaces. Only impacts to public spaces (on- and off-site) and off-site private spaces are considered CEQA impacts.

A wind analysis has been prepared for the Project (see **Attachment C**) based on a model constructed at 1:400 scale that includes all significant surrounding buildings and topographical effects within an area with a radius of 1640 feet centered on the Project site.

The mean wind speed profile and turbulence of the natural wind approaching the modelled area were simulated in WindTech's boundary-layer wind tunnel. The model was instrumented with 29 wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 5 ft. These measurements were recorded for 36 equally incremented wind directions. Wind statistics from the Metropolitan Oakland International Airport were combined with the wind tunnel data in order to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with industry standards/WindTech recommendations for pedestrian comfort (11 mph), and City of Oakland's thresholds for pedestrian wind-related safety (36 mph).

Peak gust and mean wind speeds were measured at selected critical outdoor trafficable locations within and around the subject development, as well as nearby blocks and the Kaiser Rooftop Garden. Wind velocity coefficients representing the local wind speeds are derived from the wind tunnel and are combined with a statistical model of the regional wind climate (which accounts for the directional strength and frequency of occurrence of the prevailing regional winds) to provide the equivalent full-scale wind speeds at the site. These wind speed measurements are compared against the CEQA Wind Hazard Threshold. In addition, the 20-percentile Gust-Equivalent Mean (GEM) wind speeds were assessed against established comfort criteria. The existing wind conditions around the site have also been tested to determine the impact of the subject development. A cumulative scenario case was also tested to account for the inclusion of the various surrounding future developments, and to determine

the impact of the subject development and cumulative developments with regards to pedestrian wind comfort and compliance with the CEQA Wind Hazard Threshold.

The model of the development was based on architectural drawings of the proposed building that included impermeable canopies/awnings over Level 1 along Webster Street that extend outward from the face of the building by 6.5ft. The model also included elements indicated in the landscape design drawings that call for large evergreen trees along Webster Street that are expected to be densely foliated and capable of growing to a height of 15ft to 20ft with a 15ft wide canopy. The model of the project including these features was tested in the wind tunnel without the effect of any other forms of wind ameliorating devices, which are not already shown in the architectural drawings. The effect of other forms of vegetation was also excluded from testing, in accordance with current AWES (2001) and ASCE (2012) guidelines.

The results of the study indicate that the wind conditions at each of the 38 study points are below the City of Oakland's CEQA Wind Hazard Threshold. Based on the results of the WindTech wind tunnel test, the Project's potential wind impacts would 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.

When the 3-acre Roof Park at Kaiser Center opened in 1960, it was the largest roof park in the U.S. It is located directly east from the subject property atop a three-story parking structure and is open to the public. As defined by the City of Oakland, a new project would have significant impact if "it were to cast a shadow that substantially impairs the beneficial use of any public or quasi-public park or open space."

To evaluate the Project's shadow effects in relation to this criterion, a shadow study has been prepared for the Project (see **Attachment D**), resulting in a series of diagrams that illustrate shadows that would be cast by the building at 9:00 a.m., 12:00 p.m., and 5:00 p.m. for the Spring Equinox, Summer Solstice, Fall Equinox, and Winter Solstice,¹⁵ based on City Guidelines. This study involved the use of a three-dimensional (3D) computer model of the Project site with the existing surroundings and the

¹⁵ For the winter solstice (December 21), the afternoon shadow was modeled for 3:00 p.m.

proposed development in place. The 3D model was used to produce renderings of the shadows cast around the project site by the proposed development.

The shadow analysis was specifically conducted to demonstrate the extent of shadows from the proposed project on the park during its public use hours of 9 am to 5 pm, Monday through Friday at the dates and times specified in **Table 11** below.

Table 11: Dates and Times Studied for Shadow Effects			
Date	Time of Study		
March 21 st (PDT)	9:00 a.m.	12:00 p.m.	5:00 p.m.
June 21 st (PDT)	9:00 a.m.	12:00 p.m.	5:00 p.m.
September 21 st (PDT)	9:00 a.m.	12:00 p.m.	5:00 p.m.
December 21 st (PST)	9:00 a.m.	12:00 p.m.	3:00 p.m.

The shadow diagrams presented in the Shadow Study demonstrate the shadow effects on the Kaiser Center Roof Park. The effects can be summarized as follows:

- On March 21 the first shadow would hit the park at approximately 2:00 pm and last until 5:00 pm on a small triangle on the north-west corner.
- On June 21 the first shadow would hit the park at approximately 1:00 pm and last until 5:00 pm on the northern portion of the park. Shadow effects at this time of year would affect the northern third of the park for most of the afternoon hours.
- On September 21 the first shadow would hit the park at approximately 1:30 pm and last until 5:00 pm on a triangle on the north-west corner.
- On December 21 no new shadows from the proposed project would affect the park as it is already in shadow by existing buildings.

While the shadow effects on the Roof Park would be greatest during the May to July time period, maximizing on the summer solstice (June 21), the shadows do not substantially impair the beneficial use of the park. The Project will have a less than significant shadow impact and the exception under CEQA Guidelines §15300.2 does not apply.

Section 2: Consistency with Community Plan, CEQA Guidelines Section 15183

APPLICABLE CEQA PROVISIONS

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.”

Section 15183 (b) states that 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.

CEQA Guidelines Section 15183 allows 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.”

DETERMINATION OF PROJECT CONSISTENCY UNDER SECTION 15183.

The Project qualifies for a Community Plan Exemption based on the following findings:

1. 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.

2. As demonstrated under General Plan and Zoning Consistency Analysis (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.
3. 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:
 - a. It is an underutilized site with outmoded facilities and/or marginal existing use;
 - b. 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;
 - c. It is located along two of the City's major commercial corridors (Franklin and Webster Streets), and utilizes ground floor commercial space with offices and 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.
4. Cumulative Effects
 - a. Because the Project is consistent with the policies and land use designation in the LUTE, the Project's potential contribution to cumulatively significant effects has already been addressed in that prior EIR.
 - b. Based on the streamlining provisions of CEQA Guidelines Section 15183 the Project is not required re-consider cumulative effects.

SUMMARY OF IMPACTS PREVIOUSLY DISCLOSED IN PRIOR ENVIRONMENTAL DOCUMENTS USED AS THE BASIS FOR THIS ANALYSIS.

Environmental Effects Disclosed in the General Plan LUTE EIR

1. The 1998 LUTE EIR (including its Initial Study Checklist) determined that development consistent with the LUTE would result in Less-than-significant impacts for the following resources: 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).

2. 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 PM₁₀] 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).
3. No impacts were identified for agricultural or forestry resources and mineral resources.
4. Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals. 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).**

Environmental Effects Disclosed in the 2010 Housing Element and 2014 Addendum

1. 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 site, would result in impacts that would be Less-than-significant 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.
2. Impacts 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).

3. Significant unavoidable impacts were identified for the following environmental resources in the Housing Element EIR: **air quality (toxic air contaminant exposure) and for traffic delays and for air quality (regional emissions); public services (fire safety); transportation/circulation and policy consistency (Clean Air Plan) in the LUTE.** Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

CONCLUSION

1. 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)).
 - a. As such, the analysis presents substantial evidence that the effects of the Project were discussed in the prior EIRs.
 - b. This CEQA document needs only to consider whether there are project-specific effects peculiar to the project or its site. The Project would not cause new specific effects that were not addressed in the LUTE EIR, and the Housing Element EIR. The analysis of the Project in Section 1 Exceptions to the Class 32 exemption, Pages 18 – 54, addresses this issue by including all the resource topics identified as potentially incurring significant unavoidable impacts in the analysis. This analysis concludes that there would be no impacts resulting from each of the identified topics. As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the prior EIRs.
 - c. Topics discussed in this analysis include:
 - i. Noise (Sec 15332(d))
 - ii. Air quality (Sec 15332.d)
 - iii. Public Services Sec. 15332(e) Utilities and Public Services
 - iv. Hazardous materials (Sec 15300.2 e)
 - v. Cultural resources Aesthetics (shadow and wind) (Sec 15300.2 Other Potential Effects)
 - vi. Historic resources (15300.2 f)
 - d. 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

2. There is no new information that was not known at the time the Housing Element Update EIR in 2015, 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.

Section 3: Redevelopment Projects, Guidelines Section 15180

CEQA Guidelines Section 15180 - Redevelopment Projects - provides that for a programmatic EIR “subsequent activities in the program will be subject to the review required by Section 15168.” Section 15168 directs examination of subsequent activities to determine whether those activities would have effects that were not examined in the program EIR; however, if, in accordance with the provisions of Section 15162, no new effects could occur or no new mitigation measures would be required, the City can approve the project as being within the scope of the Redevelopment Plan covered by the program EIR and no new environmental document is required.

The Project is consistent with the development goals in the 2011 Central District Urban Renewal Plan Amendments (“2011 Redevelopment Plan”). The 2011 Redevelopment Plan details particular projects and programs that are anticipated to include targeted investments and activities toward certain catalyst projects, infrastructure improvement projects and infill development projects that are consistent with the General Plan. The 2044 Franklin Street Project is consistent with at least two major goals of these projects:

- a. Re-establishment of residential area for all economic levels within specific portions of the Redevelopment Project Area.
- b. Provisions of employment and other economic benefits to disadvantaged persons living within or near the Redevelopment Project Area.

Environmental Effects Disclosed in the 2011 Redevelopment Plan EIR

1. The following resources 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).
2. 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

3. 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.
4. The 2011 Redevelopment Plan EIR analyzed the cumulative effects of development projects that would occur absent the Redevelopment Plan Amendments.
5. This CEQA document needs only to consider whether there are project-specific effects peculiar to the project or its site. Section 1, Exceptions to the Class 32 Exemption, (Pages 18 – 54) addresses this issue by including all the resource topics identified as potentially incurring significant unavoidable impacts in the analysis. This analysis concludes that there would be no impacts resulting from each of the identified topics. As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the prior EIR.

a) Topics discussed in this analysis include:

- I. Air Quality Sec 15332 d)
- II. Transportation/Traffic Sec (15332 d)
- III. Cultural Resources (historic) (15300.2 f)

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

6. Substantial New Information

There is no new information that was not known at the time the 2011 Redevelopment Plan EIR was 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.

Section 4: Qualified Infill Streamlining, Guidelines Section 15183.3

CEQA Streamlining

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

Qualified Infill Streamlining

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; qualifies for streamlining under CEQA Guidelines Section 15183.3 because it 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, in accordance with CEQA guidelines Section 15183.3, 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. 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:

- Document whether the infill project satisfies the applicable performance standards in Appendix M.
- Explain whether the effects of the infill project were analyzed in a prior EIR
- 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”).
- 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 Appendix M Performance Standards Matrix 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.

The Appendix M Matrix 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.

APPENDIX M - 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. <i>Performance Standards Related to Project Design.</i> All projects must implement all of the following:	—
Renewable Energy. <i>Non-Residential Projects.</i> 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. <i>Residential Projects.</i> 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.

APPENDIX M - PROJECT INFILL ELIGIBILITY	
CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
<p>Soil and Water Remediation.</p> <p>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.</p>	<p>Not Applicable.</p> <p>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.</p>
<p>Residential Units Near High-Volume Roadways and Stationary Sources.</p> <p>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.</p> <p>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.</p>	<p>Yes.</p> <p>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.</p> <p>Based on a screening-level analysis, the project would not be required to implement the 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.</p>
<p>2b. Additional Performance Standards by Project Type.</p> <p>In addition to implementing all the features described in criterion 2a above, the project must meet eligibility requirements provided below by project type.^a</p>	—

APPENDIX M - PROJECT INFILL ELIGIBILITY	
CEQA Eligibility Criteria	Eligible?/Notes for Proposed Project
<p>Residential. A residential project must meet <u>one</u> of the following:</p> <p><i>A. Projects achieving below average regional per capita vehicle miles traveled.</i> A residential project is eligible if it is located in a “low vehicle travel area” within the region;</p> <p><i>B. Projects located within ½ mile of an Existing Major Transit Stop or High Quality Transit Corridor.</i> 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></p> <p><i>C. Low – Income Housing.</i> 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.</p>	<p>Yes, satisfies B.</p> <p>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.</p>
<p>Commercial/Retail. A commercial/retail project must meet <u>one</u> of the following:</p> <p><i>A. Regional Location.</i> 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”; <u>or</u></p> <p><i>B. Proximity to Households.</i> A project with no single-building floor-plate greater than 50,000 square feet located within ½ mile of 1,800 households is eligible.</p>	<p>Not Applicable.</p> <p>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.</p>
<p>Office Building. An office building project must meeting <u>one</u> of the following:</p> <p><i>A. Regional Location.</i> Office buildings, both commercial and public, are eligible if they locate in a low vehicle travel area; <u>or</u></p> <p><i>B. Proximity to a Major Transit Stop.</i> 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.</p>	<p>The project satisfies criterion B, because it is less than .25 miles away from the 19th Street Bart Station.</p>

APPENDIX M - PROJECT INFILL ELIGIBILITY		
CEQA Eligibility Criteria		Eligible?/Notes for Proposed Project
	<p>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.</p> <p>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.</p>	Not Applicable.
	<p>Transit. Transit stations, as defined in Section 15183.3(e)(1), are eligible.</p>	Not Applicable.
	<p>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.</p>	Not Applicable.
3.	<p>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, <u>except</u> as provided in CEQA Guidelines Sections 15183.3(b)(3)(A) or (b)(3)(B) below:</p> <p>(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; <u>or</u></p> <p>(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).</p> <p>(CEQA Guidelines Section 15183.3[b][3])</p>	<p>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.</p> <p>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.</p>

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.

1. Class 32 Exemption Analysis

The Class 32 exemption analysis , Pages 18-54 addresses this issue by including all the resource topics identified in the prior EIRs as potentially incurring significant unavoidable impacts in the analysis. This analysis concludes that there would be no impacts resulting from each of the identified topics. As these analyses demonstrate, the Project would not substantially increase the severity of the significant impacts identified in the prior EIR.

2. 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 under California Public Resources Code Section 21083.3 and Section 15183 of the CEQA Guidelines.

As the analysis in Consistency with Community Plan (Section 2, Pages 55 - 59, above) 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)**.

Standard Conditions of Approval	Implementation/Monitoring		
	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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. <i>Landscape Plan Required</i> 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.			
<p>b. Landscape Installation</p> <p>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.</p>	Prior to building permit final	Bureau of Planning	Bureau of Building
<p>c. Landscape Maintenance</p> <p>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.</p>	Ongoing	N/A	Bureau of Building
<p>SCA AES-3: Lighting. (#18)</p> <p>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.</p>	Prior to building permit final	N/A	Bureau of Building
<p>SCA AES-4: Bird Collision Reduction Measures (#25).</p> <p>The project applicant shall submit a Bird Collision Reduction Plan for City review and approval to reduce potential bird collisions to the maximum feasible extent. The Plan shall include all of the following mandatory measures, as well as applicable and specific project Best Management Practice (BMP) strategies to reduce bird strike impacts to the maximum feasible extent. The project applicant shall implement the approved Plan. Mandatory measures include <u>all</u> of the following:</p> <ul style="list-style-type: none"> i. For large buildings subject to federal aviation safety regulations, install minimum intensity white strobe lighting with three second flash instead of solid red or rotating lights. ii. Minimize the number of and co-locate rooftop-antennas and other rooftop structures. iii. Monopole structures or antennas shall not include guy wires. iv. Avoid the use of mirrors in landscape design. v. Avoid placement of bird-friendly attractants (i.e., landscaped areas, vegetated roofs, water features) near glass unless shielded by architectural features taller than the attractant 	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
<p>that incorporate bird friendly treatments no more than two inches horizontally, four inches vertically, or both (the “two-by-four” rule), as explained below.</p> <p>vi. Apply bird-friendly glazing treatments to no less than 90 percent of all windows and glass between the ground and 60 feet above ground or to the height of existing adjacent landscape or the height of the proposed landscape. Examples of bird-friendly glazing treatments include the following:</p> <ul style="list-style-type: none"> • Use opaque glass in window panes instead of reflective glass. • Uniformly cover the interior or exterior of clear glass surface with patterns (e.g., dots, stripes, decals, images, abstract patterns). Patterns can be etched, fritted, or on films and shall have a density of no more than two inches horizontally, four inches vertically, or both (the “two-by-four” rule). • Install paned glass with fenestration patterns with vertical and horizontal mullions no more than two inches horizontally, four inches vertically, or both (the “two-by-four” rule). • Install external screens over non-reflective glass (as close to the glass as possible) for birds to perceive windows as solid objects. • Install UV-pattern reflective glass, laminated glass with a patterned UV-reflective coating, or UV-absorbing and UV-reflecting film on the glass since most birds can see ultraviolet light, which is invisible to humans. • Install decorative grilles, screens, netting, or louvers, with openings no more than two inches horizontally, four inches vertically, or both (the “two-by-four” rule). • Install awnings, overhangs, sunshades, or light shelves directly adjacent to clear glass which is recessed on all sides. • Install opaque window film or window film with a pattern/design which also adheres to the “two-by-four” rule for coverage. <p>vii. Reduce light pollution. Examples include the following:</p> <ul style="list-style-type: none"> • Extinguish night-time architectural illumination treatments during bird migration season (February 15 to May 15 and August 15 to November 30). • Install time switch control devices or occupancy sensors on non-emergency interior lights that can be programmed to turn off during non-work hours and between 11:00 p.m. and sunrise. • Reduce perimeter lighting whenever possible. • Install full cut-off, shielded, or directional lighting to minimize light spillage, glare, or light trespass. • Do not use beams of lights during the spring (February 			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>15 to May 15) or fall (August 15 to November 30) migration.</p> <p>viii. Develop and implement a building operation and management manual that promotes bird safety. Example measures in the manual include the following:</p> <ul style="list-style-type: none"> • Donation of discovered dead bird specimens to an authorized bird conservation organization or museums (e.g., UC Berkeley Museum of Vertebrate Zoology) to aid in species identification and to benefit scientific study, as per all federal, state and local laws. • Distribution of educational materials on bird-safe practices for the building occupants. Contact Golden Gate Audubon Society or American Bird Conservancy for materials. • Asking employees to turn off task lighting at their work stations and draw office blinds, shades, curtains, or other window coverings at end of work day. • Install interior blinds, shades, or other window coverings in windows above the ground floor visible from the exterior as part of the construction contract, lease agreement, or CC&Rs. • Schedule nightly maintenance during the day or to conclude before 11 p.m., if possible. 			
Air Quality			
<p>SCA AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions). (#19)</p> <p>The project applicant shall implement all of the following applicable air pollution control measures during construction of the project:</p> <p>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.</p> <p>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).</p>	During construction	N/A	Bureau of Planning

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>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.</p> <p>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.</p> <p>e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).</p> <p>f. Limit vehicle speeds on unpaved roads to 15 miles per hour.</p> <p>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.</p> <p>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").</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>l. All excavation, grading, and demolition activities shall be</p>			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>suspended when average wind speeds exceed 20 mph.</p> <p>m. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.</p> <p>n. Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for one month or more).</p> <p>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> <p>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.</p> <p>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.</p> <p>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.</p> <p>s. All trucks and equipment, including tires, shall be washed off prior to leaving the site.</p> <p>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.</p> <p>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.</p> <p>v. Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., BAAQMD Regulation 8, Rule 3:</p>			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>Architectural Coatings).</p> <p>w. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technology for emission reductions of NOx and PM.</p> <p>x. Off-road heavy diesel engines shall meet the California Air Resources Board's most recent certification standard.</p> <p>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.</p>			
<p>Note: Screening analysis presented in Attachment E has demonstrated that the Project would be below the applicable threshold. No further action is required under this SCA.</p> <p>SCA AIR-2: Exposure to Air Pollution (Toxic Air Contaminants). (#20)</p> <p><i>a. Health Risk Reduction Measures</i></p> <p>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:</p> <p>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.</p> <p>– or –</p> <p>ii. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall</p>	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
<p>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:</p> <ul style="list-style-type: none"> • 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 (<i>Pinus nigra</i> var. <i>maritima</i>), Cypress (<i>X Cupressocyparis leylandii</i>), Hybrid poplar (<i>Populus deltoids</i> X <i>trichocarpa</i>), and Redwood (<i>Sequoia sempervirens</i>). • 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: <ul style="list-style-type: none"> ○ 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. 			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<ul style="list-style-type: none"> 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. 			
<p><i>b. Maintenance of Health Risk Reduction Measures:</i></p> <p>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.</p>	Ongoing	N/A	Bureau of Building
<p>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.</p>	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building
<p>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.</p>	Prior to approval of construction-related permit	Applicable regulatory agency with jurisdiction	Applicable regulatory agency with jurisdiction
Biological Resources			
<p>SCA BIO-1: Tree Removal During Bird Breeding Season. (#26)</p> <p>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</p>	Prior to removal of trees	Bureau of Building.	Bureau of Building.

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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.			
SCA BIO-3: Tree Permit. (#27) <i>a. Tree Permit Required</i> 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
<i>b. Tree Protection During Construction</i> 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: <ol style="list-style-type: none"> 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. 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. 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 	During construction	Public Works Department, Tree Division	Bureau of Building

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<p>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, 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.</p> <p>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.</p> <p>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.</p> <p>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.</p>			
<p><i>c. Tree Replacement Plantings</i></p> <p>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:</p> <ul style="list-style-type: none"> 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 	Prior to building permit final	Public Works Department, Tree Division	Bureau of Building

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<p>substituted for each twenty-four (24) inch box size tree where appropriate.</p> <ul style="list-style-type: none"> Minimum planting areas must be available on site as follows: <ul style="list-style-type: none"> For <i>Sequoia sempervirens</i>, three hundred fifteen (315) square feet per tree; 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			
<p>SCA CULT-1: Archaeological and Paleontological Resources – Discovery During Construction. (#29)</p> <p>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</p>	During construction	N/A	Bureau of Building

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	When Required	Initial Approval	Monitoring/ Inspection
<p>identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the 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.</p> <p>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.</p>			
<p>SCA CULT-2: 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.</p>	During Construction	N/A	Bureau of Building
Geology and Soils			
<p>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</p>	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building

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

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
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 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.	Prior to approval of construction-related permit	Applicable regulatory agency with jurisdiction	Applicable regulatory agency with 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

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p><i>d. Best Management Practices (BMPs) Required for Contaminated Sites</i></p> <p>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:</p> <ul style="list-style-type: none"> 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
<p>SCA-HAZ-3: Hazardous Materials Business Plan. (#41)</p> <p>The project applicant shall submit a Hazardous Materials Business Plan for review and approval by the City, and shall implement the approved Plan. The approved Plan shall be kept on file with the City and the project applicant shall update the Plan as applicable. The purpose of the Hazardous Materials Business Plan is to ensure that employees are adequately trained to handle hazardous materials and provides information to the Fire Department should emergency response be required. Hazardous materials shall be handled in accordance with all applicable local, state, and federal requirements. The Hazardous Materials Business Plan shall include the following:</p> <ul style="list-style-type: none"> a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids. b. The location of such hazardous materials. c. An emergency response plan including employee training information. <p>A plan that describes the manner in which these materials are handled, transported, and disposed.</p>	Prior to building permit final	Oakland Fire Department	Oakland Fire Department
Hydrology and Water Quality			
<p>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</p>	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A

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	When Required	Initial Approval	Monitoring/ Inspection
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.			
<p>SCA HYD-2: NPDES C.3 Stormwater Requirements for Regulated Projects. (#50)</p> <p><i>a. Post-Construction Stormwater Management Plan Required</i></p> <p>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:</p> <ul style="list-style-type: none"> 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. 	Prior to Approval of Construction-Related Permit	Bureau of Planning; Bureau of Building	Bureau of Building
<p><i>b. Maintenance Agreement Required</i></p> <p>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:</p> <ul style="list-style-type: none"> 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. 	Prior to Building Permit Final	Bureau of Building	Bureau of Building

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	When Required	Initial Approval	Monitoring/ Inspection
The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.			
Noise			
<p>SCA NOI-1: Construction Days/Hours. (#58): The project applicant shall comply with the following restrictions concerning construction days and hours:</p> <ul style="list-style-type: none"> 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. <p>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.</p> <p>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.</p>	During Construction	N/A	Bureau of Building
<p>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:</p> <ul style="list-style-type: none"> a. Equipment and trucks used for project construction shall utilize 	During Construction	N/A	Bureau of Building

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<p>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.</p> <p>b. Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available, and this could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.</p> <p>c. Applicant shall use temporary power poles instead of generators where feasible.</p> <p>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.</p> <p>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.</p>			
<p>SCA NOI-3: Extreme Construction Noise. (#60)</p> <p>a. <i>Construction Noise Management Plan Required</i></p> <p>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:</p> <p>i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;</p> <p>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;</p>	Prior to Approval	Bureau of Building	Bureau of Building

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<p>iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site;</p> <p>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</p> <p>v. Monitor the effectiveness of noise attenuation measures by taking noise measurements.</p> <p>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:</p> <p>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.</p> <p>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.</p> <p>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</p>			

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<p>cover the levels of the building that have line of sight with the windows of adjacent receptors;</p> <p>Construction equipment will be positioned as far away from noise-sensitive receptors as possible. The project site is surrounded by 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.</p> <p><i>b. Public Notification Required</i></p> <p>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.</p>			
<p>SCA NOI-4: Project-Specific Construction Noise Reduction Measures. (#61): 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 noise impacts. The project applicant shall implement the approved Plan during construction.</p>	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building
<p>SCA NOI-5: 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:</p> <ol style="list-style-type: none"> Designation of an on-site construction complaint and enforcement manager for the project; A large on-site sign near the public right-of-way containing permitted construction days/hours, complaint procedures, and phone numbers for the project complaint manager and City Code Enforcement unit; Protocols for receiving, responding to, and tracking received complaints; and 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
<p>SCA NOI-6: 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,</p>	Prior to Approval of Construction-Related Permit	Bureau of Planning	Bureau of Building

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<p>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:</p> <ul style="list-style-type: none"> a. 45 dBA: Residential activities, civic activities, hotels. b. 50 dBA: Administrative offices; group assembly activities. c. 55 dBA: Commercial activities. d. 65 dBA: Industrial activities. 			
<p>SCA NOI-7: 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.</p>	Ongoing	N/A	Bureau of Building
Transportation /Traffic			
<p>SCA TRANS-1: Construction Activity in the Public Right-of-Way. (#68)</p> <p><i>a. Obstruction Permit Required</i></p> <p>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.</p>	Prior to Approval of Construction Related Permit	Bureau of Building	Bureau of Building
<p><i>b. Traffic Control Plan Required</i></p> <p>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.</p>	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
<p><i>c. Repair City Streets</i></p> <p>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.</p>	Prior to Building Permit Final	N/A	Bureau of Building
<p>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.</p>	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building
<p>SCA TRANS-3: Transportation and Parking Demand. (#71)</p> <p><i>a. Transportation and Parking Demand Management (TDM) Plan Required</i></p> <p>The project applicant shall submit a Transportation and Parking Demand Management (TDM) Plan for review and approval by the City.</p> <p>i. The goals of the TDM Plan shall be the following:</p> <ul style="list-style-type: none"> a. Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable, consistent with the potential traffic and parking impacts of the project. b. Achieve the following project vehicle trip reductions (VTR): c. Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR d. Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR e. Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate. f. Enhance the City's transportation system, consistent with City policies and programs. <p>ii. TDM strategies to consider include, but are not limited to, the following:</p> <ul style="list-style-type: none"> g. Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement. h. Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping. i. Installation of safety elements per the Pedestrian Master 	Prior to Approval of Construction-Related Permit	Bureau of Planning	N/A

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project.</p> <p>j. Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan.</p> <p>k. Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per transit agency plans or negotiated improvements.</p> <p>l. Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency).</p> <p>m. Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes.</p> <p>n. Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3).</p> <p>o. Guaranteed ride home program for employees, either through 511.org or through separate program.</p> <p>p. Pre-tax commuter benefits (commuter checks) for employees.</p> <p>q. Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants.</p> <p>r. On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools.</p> <p>s. Distribution of information concerning alternative transportation options.</p> <p>t. Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties.</p> <p>u. Parking management strategies including attendant/valet parking and shared parking spaces.</p> <p>v. Requiring tenants to provide opportunities and the ability to work off-site.</p>			

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>w. Allow employees or residents to adjust their work schedule in order to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week).</p> <p>x. Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours.</p> <p>The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report.</p>			
<p><i>b. TDM Implementation — Physical Improvements</i></p> <p>For VTR strategies involving physical improvements, the project applicant shall obtain the necessary permits/approvals from the City and install the improvements prior to the completion of the project.</p>	Prior to Building Permit Final	Bureau of Building	Bureau of Building
<p><i>c. TDM Implementation — Operational Strategies</i></p> <p>For projects that generate 100 or more net new a.m. or p.m. peak hour vehicle trips and contain ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project (or completion of each phase for phased projects) for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual VTR achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in these Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the VTR goal is not achieved.</p>	Ongoing	Bureau of Planning	Bureau of Planning
Utilities and Service Systems			
<p>SCA UTIL-1: Construction and Demolition Waste Reduction and Recycling. (#74)</p> <p>The project applicant shall comply with the City of Oakland</p>	Prior to Approval of Construction-Related Permit	Public Works Department, Environmental Services	Public Works Department, Environmental Services

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
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.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.		Division	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, 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.	During Construction	N/A	Bureau of Building
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)	Prior to Approval of Construction-	Bureau of Building	N/A

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p><i>a. Compliance with Green Building Requirements During Plan-Check</i></p> <p>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).</p> <p>i. The following information shall be submitted to the City for review and approval with the application for a building permit:</p> <p>Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards.</p> <p>Completed copy of the final Green Building checklist approved during the review of the Planning and Zoning permit.</p> <p>Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit.</p> <p>Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below.</p> <p>Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance.</p> <p>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.</p> <p>Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</p> <p>ii. The set of plans in subsection (i) shall demonstrate compliance with the following:</p> <p>CALGreen mandatory measures.</p> <p>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.</p>	Related Permit		

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
<p>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.</p> <p>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.</p> <p>The required green building point minimums in the appropriate credit categories.</p>			
<p><i>b. Compliance with Green Building Requirements During Construction</i></p> <p>The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project.</p> <p>The following information shall be submitted to the City for review and approval:</p> <p>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.</p> <p>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.</p> <p>Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance.</p>	During Construction	N/A	Bureau of Building
<p><i>c. Compliance with Green Building Requirements After Construction</i></p> <p>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</p>	After Project Completion as Specified	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	Implementation/Monitoring		
	When Required	Initial Approval	Monitoring/ Inspection
above.			
<p>SCA UTIL-5: Sanitary Sewer System. (#79)</p> <p>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.</p>	Prior to Approval of Construction-Related Permit	Public Works Department, Department of Engineering and Construction	N/A
<p>SCA UTIL-6: Storm Drain System. (#80)</p> <p>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.</p>	Prior to Approval of Construction-Related Permit	Bureau of Building	Bureau of Building

**ATTACHMENT B: 2044 FRANKLIN AIR QUALITY AND GHG
EMISSIONS ASSESSMENT**

2044 FRANKLIN TOWER MIXED USE DEVELOPMENT

AIR QUALITY AND GHG EMISSIONS ASSESSMENT OAKLAND, CALIFORNIA

June 22, 2017

Revised August 25, 2017

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Summary – 2044 Franklin Tower 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 2044 Franklin Street in Oakland, CA. The project site is currently occupied by a two-story commercial building. The project proposes to demolish the existing structure and construct a 29-story mixed use, high-rise 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 could 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 have less than significant levels. 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 2044 Franklin Street in Oakland, CA. The project site is currently occupied by a two-story commercial building. We understand that the project proposes to demolish the existing structure and construct a 29-story mixed use, high-rise building. The first floor would include parking, commercial and retail space, residences in townhomes. The ground floor residences would be located along Franklin Street. Floors 2 through 5 would be comprised of office suites. Floors 6 through 29 would consist of residential units.

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 (PM_{2.5}) 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 PM_{2.5} 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

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.

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 70% of total known cancer risk related to air toxics in California is attributable to DPM³. 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 Vehicles⁴. 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

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.

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 NO_x 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 (NO_x) 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 NO_x.

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 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. For the purposes of a thorough health risk assessment, residents of the project site assume all sensitive receptor types: 3rd-trimester 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 (CO₂) and water vapor but there are also several others, most importantly methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). These are released into the earth’s atmosphere through a variety of natural processes and human activities. Sources of GHGs are generally as follows:

- CO₂ and N₂O are byproducts of fossil fuel combustion.
- N₂O is associated with agricultural operations such as fertilization of crops.
- CH₄ 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 CO₂ 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 CO₂ equivalents (CO₂e).

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.

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

Table 1: 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, NO _x = 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 NO_x 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.

SCA 21: Stationary Sources of Air Pollution (Toxic Air Contaminants)

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.

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 PM₁₀ 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 PM₁₀, the BAAQMD has established thresholds of significance for these air pollutants and their precursors. These thresholds are for ozone precursor pollutants (ROG and NO_x), PM₁₀, 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 equipment list and schedule information provided by the project applicant. The proposed project land uses were input into CalEEMod, which included: 179 dwelling units entered as “Apartment High Rise”, 57,900 square feet (sf) entered as “General Office Building,” 5,400 sf entered as “Fast Food Restaurant w/o Drive Thru”, 5 dwelling units entered as “Single Family Housing,” and 86 spaces entered as “Enclosed Parking with Elevator,” on a 0.37-acre site.

Approximately 13,345 cubic yards (cy) of soil export is anticipated during grading and was entered into the model. Demolition of 9,100 sf of buildings and 246 tons of pavement is anticipated and was entered into the model. An estimated 330 cement truck round-trips are expected during the building construction and were entered into the model. In addition, 10 paving trips are expected and were entered into the model. The modeling assumed 16 cy/truck to calculate the number of trips during grading.

The construction schedule assumes that the project would be built out over a period of approximately 24 months beginning in June 2018, or an estimated 520 construction workdays (assuming an average of 260 construction days per year). Average daily 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, PM₁₀ 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.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM₁₀ 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.

Table 2. Construction Period Emissions

Scenario	ROG	NOx	PM₁₀ Exhaust	PM_{2.5} Exhaust
Total construction emissions (tons)	3.62 tons	8.45 tons	0.43 tons	0.41 tons
Average daily emissions (pounds) ¹	13.9 lbs.	32.5 lbs.	1.6 lbs.	1.6 lbs.
<i>BAAQMD Thresholds (pounds per day)</i>	54 lbs.	54 lbs.	82 lbs.	54 lbs.
Exceed Threshold?	No	No	No	No
Notes: ¹ Assumes 520 workdays.				

Operational Period Emissions

Operational air emissions from the project would be generated primarily from autos driven by future hotel occupants 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.

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 21,000 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 trip 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 1000 Kw generator. It is assumed for this assessment that the generator 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, PM₁₀, or PM_{2.5} emissions associated with operation would not exceed the BAAQMD significance thresholds.

Table 3. Operational Emissions

Scenario	ROG	NO _x	PM ₁₀	PM _{2.5}
Project Annual Operational Emissions	2.14 tons	2.85 tons	1.11 tons	0.33 tons
Existing Emissions	0.20 tons	0.72 tons	0.29 tons	0.08 tons
Net Project Emissions	1.94 tons	2.13 tons	0.82 tons	0.25 tons
<i>BAAQMD Thresholds (tons /year)</i>	<i>10 tons</i>	<i>10 tons</i>	<i>15 tons</i>	<i>10 tons</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>
Average Daily Net Project Operational Emissions (pounds) ¹	10.6 lbs.	11.7 lbs.	4.5 lbs.	1.4 lbs.
<i>BAAQMD Thresholds (pounds/day)</i>	<i>54 lbs.</i>	<i>54 lbs.</i>	<i>82 lbs.</i>	<i>54 lbs.</i>
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>

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.

⁵ Fehr & Peers. 2017. Draft Memorandum to Nathaniel Taylor (Lamphier Gregory) from Sam Tabibnia and Ron Ramos – Subject: 2044 Franklin Street – Preliminary Transportation Assessment. March 29

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.

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

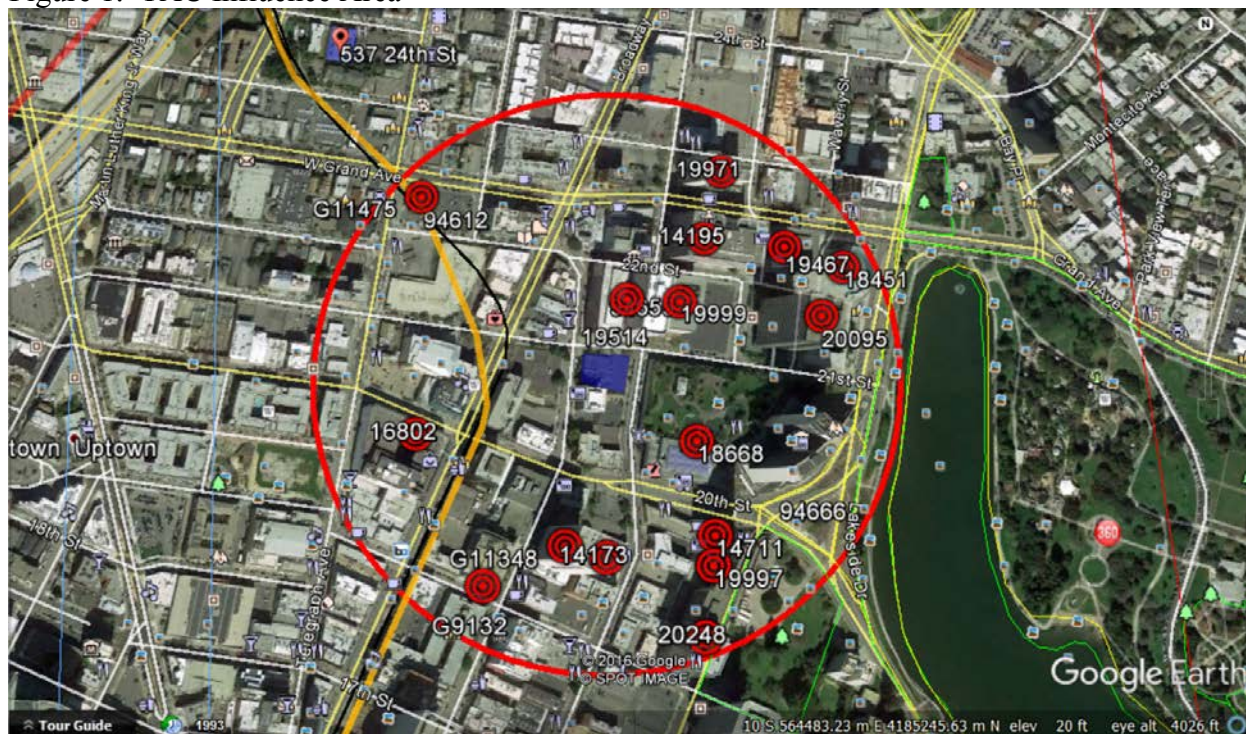
Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs or by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project 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.

It is our understanding that 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 (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 PM_{2.5} concentrations of 0.8 µg/m³, 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 Health Hazards Assessment (OEHHA) and provides greater protections for infants and children.

A review of the project site has identified several sources including a high volume roadway 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:

1. Local Roadways: These include Franklin Street, Webster Street, 21st Street, Broadway, and Thomas Berkeley Way
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 2*).

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 2*). This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.⁷

⁷ Correspondence with Alison Kirk, BAAQMD, January 23, 2017.

Project Location

The project site is bound by Webster Street to the east, Franklin Street to the east, 21st street to the north. Major roadways like Thomas Berkeley Way and Broadway 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.

Traffic Volumes

Broadway: The City does not publish Average Daily Traffic (ADT), so hourly traffic volume data were used with an adjustment where the peak-hour volume was assumed to be equivalent to 10 percent of the average daily volume. Data sources for traffic volumes included the Broadway / Valdez District Specific Plan and traffic counts published by Kittleson and Associates⁸. The ADT on Broadway was found to be 13,800 vehicles.

Risk Calculations

Broadway: Using the BAAQMD *Roadway Screening Analysis Calculator* for Alameda County for north-south directional roadways and at a distance of approximately 300 west of the project site, estimated cancer risk from Broadway at the nearest project site would be 1.29 per million and PM_{2.5} concentration would be 0.03 µg/m³. Chronic or acute HI for the roadway would be below 0.03.

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, Plant# 3927 was found to be an auto body shop operated by Hanzel Auto Body works and has zero risks associated with it. Therefore, this sources was not considered in the analysis. The remaining sources were evaluated using BAAQMD stationary source screening data, with distance multiplier. The screening results for five of the remaining sources were found to be above the single-source thresholds. Source-specific emission information was obtained from BAAQMD for these sources and entered into the BAAQMD's *beta calculator*. The risks computed by the beta calculator were found to be less than the single-source thresholds except for Plant #19514. Therefore, refined modeling for Plant #19514 was performed. *Attachment 3* provides the

⁸ See <http://maps.kittelson.com/OaklandCounts>, accessed Feb 7, 2017.

stationary source screening data.

Sources Assessed Using Screening Tools

1. Plant 19999, is located at 2150 Webster Street and operated by Pacific Bell Telephone and Co. is about 180 feet northeast of the project site. This facility operates one emergency diesel fire pump engine. The stationary source screening tool did not provide any data for this plant. Emission information for this plant was obtained from BAAQMD. The BAAQMD Beta Calculation Version 1.3 was used to compute PM_{2.5} concentrations. After adjusting for an approximate distance of 180 feet, the cancer risk at the nearest project site receptor was found to be 1.85 in one million, the PM_{2.5} concentration and Hazard Index (HI) was found to be less than 0.01.
2. Plant 20095, is located at One Kaiser Plaza and operated by CIM Group/Ordway Building is about 690 feet northeast of the project site. This facility operates one emergency diesel standby generator, one diesel fire pump engine, and two boilers. Emission information for this plant was obtained from BAAQMD. The BAAQMD Beta Calculation 1.3 was used to compute the cancer and non-cancer risk, and PM_{2.5} concentration. Having adjusted for an approximate distance of 690 feet from the nearest project receptor, the cancer risk at the closest project receptor was found to be 0.54, the HI was less than 0.01 and the PM_{2.5} concentration was estimated as 0.02 µg/m³.
3. Plant 19997, operated by Oakland Property LLC and located at 1999 Harrison Street which is about 770 feet southeast of the project site. This facility operated one emergency standby diesel fire pump and one emergency standby diesel generator set. Emission information for the generator 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 770 feet, the cancer risk was found to be 2.9 in a million, approximately zero HI and less than 0.01 µg/m³ PM_{2.5} concentration.
4. Plant 19514, operated by General Services Administration-East Bay and located at 2101 Webster Street is about 125 feet north of the nearest project receptor. This facility operates two diesel powered emergency standby generators and three fire tube boilers. Based on the BAAQMD emission information for these sources of TAC emissions and the results of the Beta Calculator, the risks were found to exceed significance threshold. Therefore, refined modeling was performed for this source.
5. Plant 18668, operated by AT&T Corp and located at 344 20th Street is about 230 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 µg/m³ PM_{2.5} concentration.
6. Plant 14173 is an emergency operated by Pacific Gas and Electric and located at 1919 Webster Street. This facility is about 535 feet south of the project site. Risk and PM_{2.5} concentrations associated with this gasoline dispensing facility was 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 535 feet, the cancer risk was found to be 4.04 in a million, an HI of less than 0.01 and less than 0.01 $\mu\text{g}/\text{m}^3$ $\text{PM}_{2.5}$ concentration.

7. Plant G11475, is a gas station located at 2200 Telegraph Avenue and operated by Chevron, Inc. This facility is about 850 feet northwest of the project site. Risk and $\text{PM}_{2.5}$ 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 Gasoline Dispensing Facilities*. Having adjusted for an approximate distance of 850 feet, the cancer risk was found to be 0.4 in a million, and zero HI.
8. Plant 16802, is an emergency back-up generator operated by Sears #1039 and located at 1955 Broadway. This facility is about 550 feet from the project site. Risk and $\text{PM}_{2.5}$ 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 555 feet, the cancer risk, the Hazard Index and the $\text{PM}_{2.5}$ concentration were all found to be zero.
9. 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 $\text{PM}_{2.5}$ 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 $\mu\text{g}/\text{m}^3$ $\text{PM}_{2.5}$ concentration.
10. Plant 19971, is an emergency back-up generator operated by Essex Portfolio, LLC and located at 100 Grand Avenue. This facility is about 800 feet northwest of the project site. Risk and $\text{PM}_{2.5}$ 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 800 feet, the cancer risk was found to be 1.35 in a million, zero HI and no $\text{PM}_{2.5}$ concentration.
11. Plant 19467, is an emergency back-up generator operated by Brandywine Realty Trust and located at 155 Grand Avenue, Ste. 1025. This facility is about 700 feet northeast of the project site. Risk and $\text{PM}_{2.5}$ 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 700 feet, the cancer risk was found to be 1.94 in a million, less than 0.01 HI and zero $\text{PM}_{2.5}$ concentration.
12. Plant 18451, is an emergency back-up generator operated by Catholic Cathedral Corporation of the era and located 2121 Harrison Street. This facility is about 810 feet NE of the project site. Risk and $\text{PM}_{2.5}$ 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 810 feet, the cancer risk was found to be 0.06 in a million, zero HI and zero PM_{2.5} concentration.

13. Plant 14711, is an emergency back-up generator operated by Verizon Business and located at 1999 Harrison Street. This facility is about 770 feet southeast 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 770 feet, the cancer risk was found to be 3.78 in a million, less than 0.01 HI and less than 0.01 µg/m³ PM_{2.5} concentration.

Refined Assessment of Plant 19514

Modeling of the General Services Administration-East Bay, back-up generators and fire pumps (Plant 19514) 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 0.0175 pounds per day (6.39 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 generators and the fire pump were modeled as a single stack at ground level in front of the buildings they are associated with, across the street from the project site. Potential impacts at the on-site sensitive receptors were evaluated. 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 Caltrans generators in the modeling. The generators were assumed to be operated for testing and maintenance purposes during the daytime hours between 8 a.m. and 5 p.m.

The maximum modeled annual average DPM concentrations occurred at third floor level of the project townhome residences and was found to be 0.0033µg/m³. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 1.0 in a million. Details of the modeling and risk calculations are included in *Attachment 5*.

Plant #19514 also include three fire tube boilers. Based on the BAAQMD emission inventory data the daily PM_{2.5} emissions from this generator are 0.043 pounds per day. The Beta Calculator Version 1.3 was used to estimate the PM_{2.5} concentration, which was 0.05 µg/m³ at the nearest on-site receptor.

On-Site Project Generator

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 at the emergency exit area in the southeastern corner of the sixth-floor building level. The proposed generator would be a Caterpillar 1,000 kilowatt (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 also assumed that operation of the generator would take place between 8 a.m. to 5 p.m.

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 on the generator exhaust plume were included in the modeling. Generator exhaust DPM and PM_{2.5} emissions were calculated based on manufacturer emission factors and assuming 50 hours per year of operation. The exhaust stack from the generator engine was assumed to discharge horizontally through an 8-inch diameter stack from the east side of the mechanical room area on the sixth-floor level. Stack parameters for modeling (exhaust flow rate and exhaust gas temperature) were based on manufacturer data.

The maximum modeled DPM and PM_{2.5} concentrations occurred at the proposed on-site residential receptors at the eighth-floor level of the tower residences. The maximum annual PM_{2.5} concentration was 0.0032 µg/m³. The maximum cancer risk based on the maximum modeled DPM concentration was found to be 2.4 in one million. The maximum on-site residential HI would be less than 0.001. Generator modeling information and risk calculations are included in *Attachment 5*.

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.

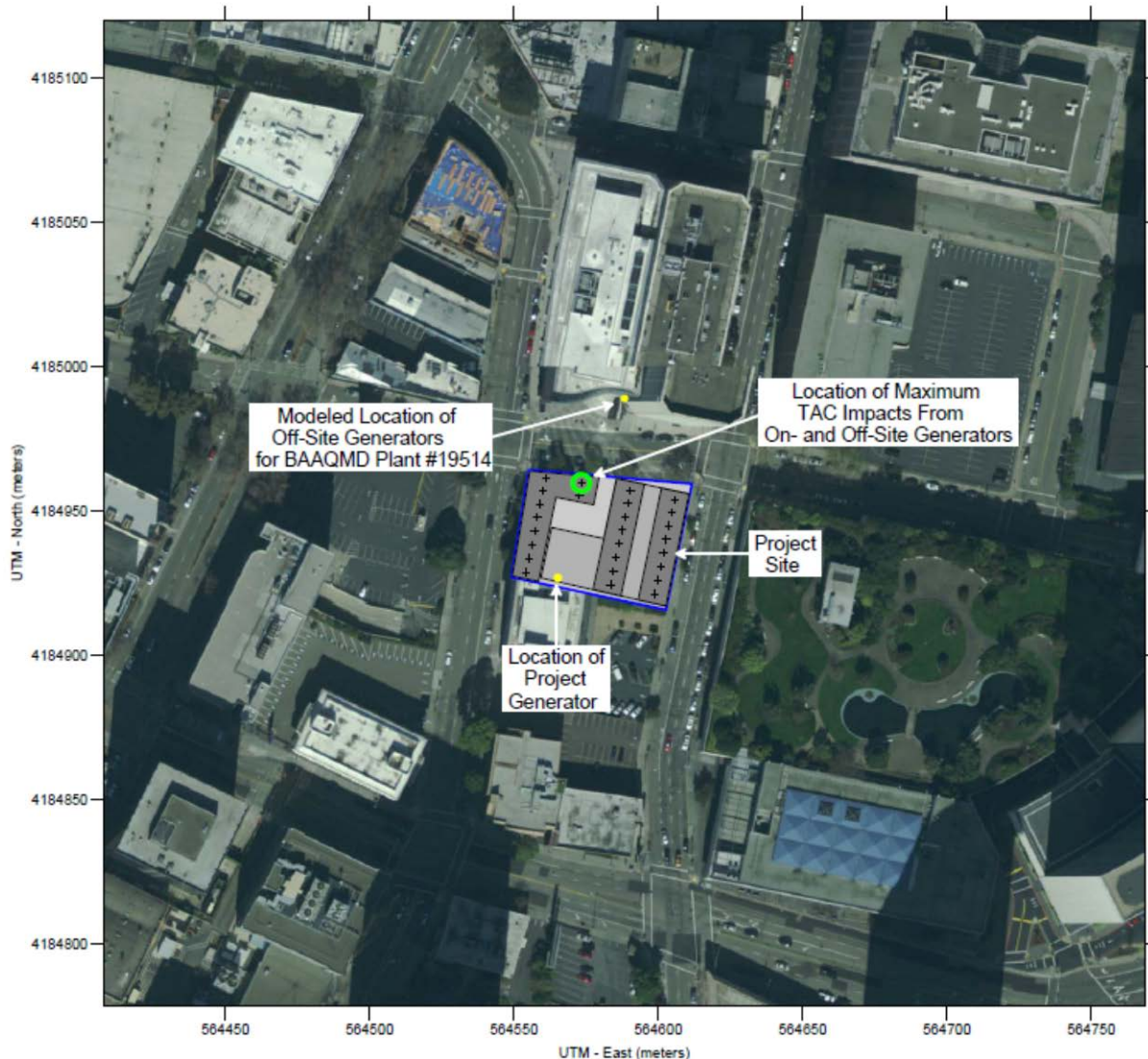
Combined Cancer Risk, Hazard Index and Annual PM_{2.5} Concentrations

The combination of impacts from all sources at the receptor most impacted or considered the Maximally Exposed Individual (MEI) is reported in Table 3. This would be a receptor at the northwestern 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 µg/m³ and the Hazard Index is well below 10.0.

Table 3. Impact of Combined Sources at the On-Site MEI

Source	Range in Distance (feet)	Cancer Risk ¹ (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index	Analysis Method
Project Generator (Testing and Maintenance)	On-Site	2.4	<0.01	<0.01	1000 Kw Generator, Dispersion Modeling using AERMOD
Broadway (N-S)	~300	1.29	0.03	<0.01	Roadway Risk Screening Calculator
Thomas Berkeley Way	Less than 10,000 ADT				
Franklin Street					
Webster Street					
21 st Street					
20 th Street					
Plant #19999, Pacific Bell Telephone and Co., 2150 Webster Street	~180	1.85	<0.01	<0.01	BAAQMD source emission information, Beta Calculator 1.3 and distance multiplier
Plant #14173, Pacific Gas and Electric, 1919 Webster Street	~535	4.04	<0.01	<0.01	BAAQMD screening values and distance multiplier
Plant #16802, Sears #1039, 1955 Broadway	~550	0.00	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #G9132, Kaiser Foundation Health Plan	~530	0.00	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #G11475, Chevron Inc., 2200 Telegraph Avenue	~850	0.40	Na	0.00	BAAQMD screening values and distance multiplier
Plant #14195, State of California, Dept. of Transportation, 111 Grand Avenue	~500	9.05	0.01	<0.01	BAAQMD screening values and distance multiplier
Plant #19971, Essex Portfolio LLC, 100 Grand Avenue	~800	1.34	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #19467, Brandywine Realty Trust, 150 Grand Avenue, Ste #1025	~700	1.94	0.00	<0.01	BAAQMD screening values and distance multiplier
Plant #20095, CIM Group/Ordway Building, One Kaiser Plaza	~690	0.54	0.02	<0.01	BAAQMD source emission information, Beta Calculator 1.3 and distance multiplier
Plant #18451, Catholic Corporation of the Era, 2121 Harrison Street	~810	0.06	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #19997, Oakland Property LLC, 1999 Harrison Street	~770	2.90	0.01	~0	BAAQMD source emission information, Beta Calculator 1.3 and distance multiplier
Plant #19514, Oakland Center 21, 2101 Webster Street	~125	2.4	0.05	<0.01	BAAQMD source emission information, Refined Modeling using AERMOD
Plant #14711, Verizon Building, 1999 Harrison Street	~770	3.78	<0.01	<0.01	BAAQMD screening values and distance multiplier
Plant #18668, AT&T Corp., 344 20 th Street	~230	1.38	<0.01	~0	BAAQMD source emission information, Beta Calculator 1.3 and distance multiplier
Cumulative Total		36.4	<0.17	<0.07	
BAAQMD Threshold – Cumulative Sources		>100	>0.8	>10.0	
Significant?		No	No	No	

Figure 2. Locations of Off-Site Stationary Source (Plant #19514), 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 NO_x 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 PM_{2.5} 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 maximum modeled DPM and PM_{2.5} concentrations were also computed at the off-site sensitive receptors. The maximum concentrations occurred at a receptor to the north of the project site and was found to be less than 0.001 µg/m³. The maximum cancer risk based on the maximum modeled DPM concentration was calculated as 0.05 in one million. The maximum on-site residential HI would be less than 0.001. Generator modeling information and risk calculations are included in *Attachment 5*.

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.

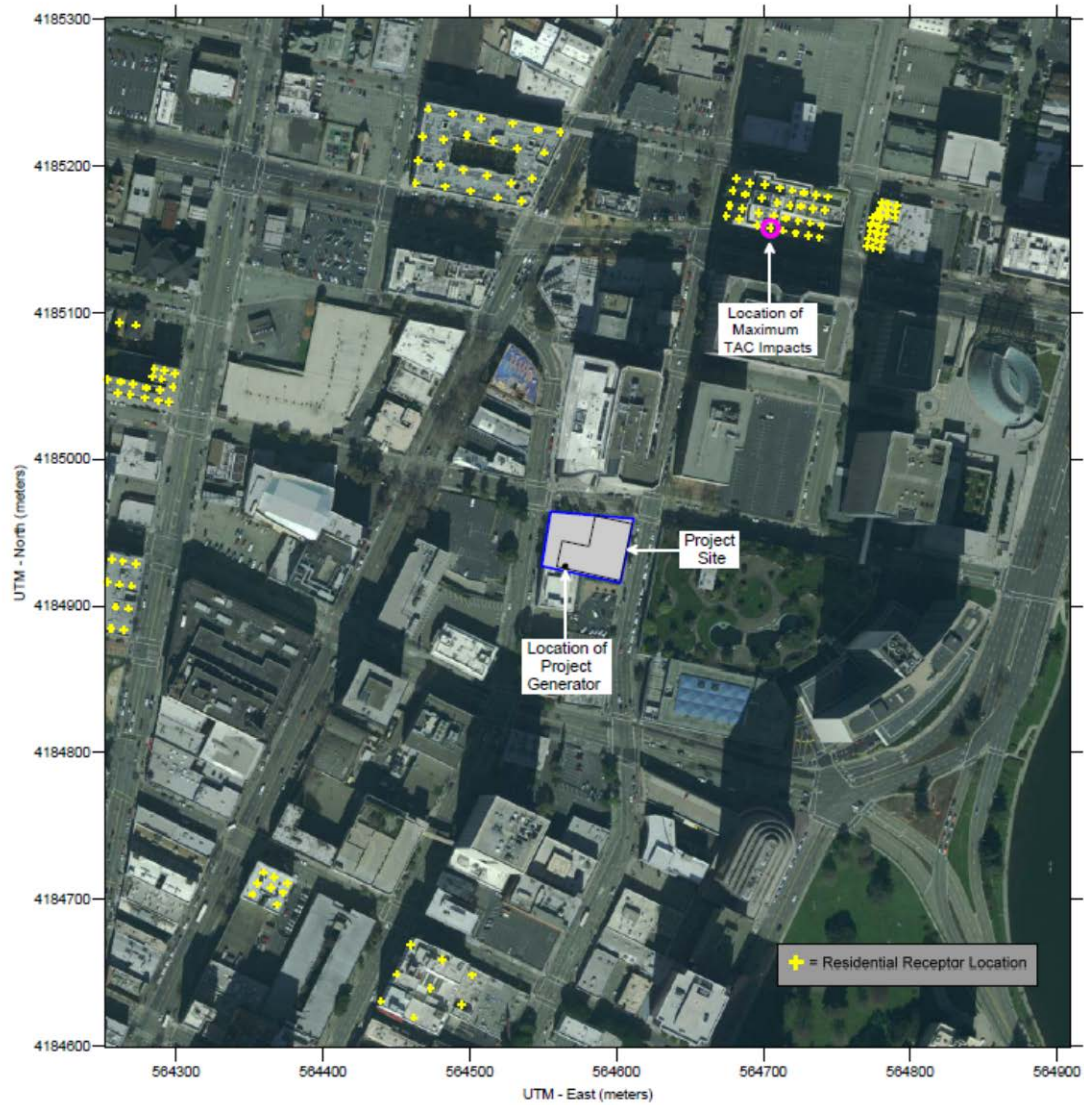
Cumulative TAC Sources

The impacts from the above mentioned high volume roadway and stationary sources were also computed at the maximally impacted off-site receptor and have been listed in Table 4. As can be seen in Table 4, the cumulative impact at maximally impacted off-site receptor would be *less than significant*.

Table 4. Impact of Combined Sources at the Off-Site MEI

Source	Range in Distance (feet)	Cancer Risk ¹ (per million)	Annual PM _{2.5} (µg/m ³)	Hazard Index	Analysis Method
Project Generator (Testing and Maintenance)		0.05	<0.01	<0.01	Dispersion Modeling using AERMOD
Broadway (N-S)	~500	0.8	0.02	<0.03	Roadway Risk Screening Calculator
Thomas Berkeley Way	Less than 10,000 ADT				
Franklin Street					
Webster Street					
21 st Street					
20 th Street					
Plant #19999, Pacific Bell Telephone and Co., 2150 Webster Street	Distance >1000 feet				
Plant #14173, Pacific Gas and Electric, 1919 Webster Street	Distance >1000 feet				
Plant #16802, Sears #1039, 1955 Broadway	Distance >1000 feet				
Plant #G9132, Kaiser Foundation Health Plan	Distance >1000 feet				
Plant #G11475, Chevron Inc., 2200 Telegraph Avenue	Distance >1000 feet				
Plant #14195, State of California, Dept. of Transportation, 111 Grand Avenue	~120	1.0	<0.01	<0.01	BAAQMD emissions and refined modeling
Plant #19971, Essex Portfolio LLC, 100 Grand Avenue	Same building	22.4	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #19467, Brandywine Realty Trust, 150 Grand Avenue, Ste #1025	~195	5.0	<0.01	<0.01	BAAQMD screening values and distance multiplier
Plant #20095, CIM Group/Ordway Building, One Kaiser Plaza	~410	2.6	<0.01	<0.01	BAAQMD source emission information, Beta Calculator 1.3 and distance multiplier
Plant #18451, Catholic Corporation of the Era, 2121 Harrison Street	~545	0.06	0.00	0.00	BAAQMD screening values and distance multiplier
Plant #19997, Oakland Property LLC, 1999 Harrison Street	Distance >1000 feet				
Plant #19514, Oakland Center 21, 2101 Webster Street	Distance >1000 feet				
Plant #14711, Verizon Building, 1999 Harrison Street	Distance >1000 feet				
Plant #18668, AT&T Corp., 344 20 th Street	Distance >1000 feet				
Cumulative Total		31.9	<0.06	<0.07	
BAAQMD Threshold – Cumulative Sources		>100	>0.8	>10.0	
Significant?		No	No	No	

Figure 3. Locations of Project Generator, Off-Site Sensitive Receptors and Off-Site MEI



Greenhouse Gas Emissions

Impact: Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? *Less than significant*

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. The model has a default rate of 641.3 pounds of CO₂ per megawatt of electricity produced, which is based on PG&E's 2008 emissions rate. The Pacific Gas & Electric's rate was updated to be the most recent rate reported by PG&E, which is 435 pounds of CO₂e per megawatt of electricity produced.⁹

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 190 based on an approximate 3 employees per 1,000 sf of retail or office space. The number of future residences is estimated at 466 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 656.

Construction Emissions

GHG emissions associated with construction were computed to be 1,456 MT of CO₂e 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

⁹ 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.

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.

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 1,722 MT of CO₂e, which would exceed the BAAQMD significance threshold of 1,100 MT of CO₂e/ year. Therefore, the service population threshold was used to determine the significance of this project. As shown in Table 5, service population emissions 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.

Table 5. Annual Project GHG Emissions (CO₂e) in Metric Tons

Source Category	Proposed Project 2021	Existing
Construction (amortized over 40 years)	36	-
Area	25	~0
Energy Consumption	665	95
Mobile	1,298	357
Solid Waste Generation	103	10
Water Usage	68	11
Total	2,195	473
Net Project Emissions	1,722 MT of CO₂e/year	
Per Capita Emissions	3.34	
BAAQMD Threshold	1,100 MT of CO₂e/year or 4.6 MT/capita	
Stationary Equipment	26	-
BAAQMD Threshold	10,000 MT of CO₂e/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 CO₂e 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 CO₂e. 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 CO₂e. Thus, an estimated reduction of 80 MMT of CO₂e 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: Health Risk Evaluation Methodology
Attachment 2: CalEEMod Output Files- Construction Criteria Emissions and Operational Emissions
Attachment 4: SSIF, Stationary Source Refined Modeling and Roadway Risk Calculations
Attachment 5: Generator Risk Modeling

Attachment 1: Applicable City of Oakland SCAs

20. Exposure to Air Pollution (Toxic Air Contaminants)

z. *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 Cupressocypariss leylandii*), Hybrid poplar (*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

aa. *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

Attachment 2: 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 2015.¹¹ 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.¹² 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.¹³ 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:

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

Where:

CPF = Cancer potency factor (mg/kg-day)⁻¹

ASF = Age sensitivity factor for specified age group

ED = Exposure duration (years)

11 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.

12 CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.

13 BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. January 2016.

AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

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

Where:

C_{air} = concentration in air ($\mu\text{g}/\text{m}^3$)
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 →	3 rd Trimester	0<2	2 < 9	2 < 16	16 - 30
DPM Cancer Potency Factor ($\text{mg}/\text{kg}\cdot\text{day}$) ⁻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 ($\mu\text{g}/\text{m}^3$).

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 3: Construction Schedule and CalEEMod Output Files

Project Name:		2044 Franklin								
Project Size		184 Dwelling Units		0.37 total project acres disturbed						
		289116 s.f. residential		5348 s.f. retail						
		60688 s.f. office/commercial		0 s.f. other, specify:						
		0 s.f. other, specify:				Complete ALL Portions in Yellow				
		20288 s.f. parking garage		86 spaces						
		0 s.f. parking lot		0 spaces						
Construction Hours		7 am to		3 pm						
Qty	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	Comments			
							Typical Equipment Type & Load Factors			
Demolition		Start Date:	6/1/2018	Total phase:	21		Overall Import/Export Volumes			
		End Date:	7/1/2018							
1	Concrete/Industrial Saws	81	0.73	8	21	8	Demolition Volume			
2	Excavators	162	0.38	8	21	8	Square footage of buildings to be demolished			
1	Rubber-Tired Dozers	255	0.4	8	21	8	(or total tons to be hauled)			
1	Tractors/Loaders/Backhoes	97	0.37	8	21	8	9,100 square feet or			
							N/A Hauling volume (tons)			
Site Preparation		Start Date:	7/1/2018	Total phase:	0		Any pavement demolished and hauled? 246 tons			
		End Date:	7/1/2018				Soil Hauling Volume			
	Graders	174	0.41				Included in Demolition			
	Rubber Tired Dozers	255	0.4				Export volume = N/A cubic yards			
	Tractors/Loaders/Backhoes	97	0.37				Import volume = N/A cubic yards			
							Soil Hauling Volume			
Grading / Excavation		Start Date:	7/1/2018	Total phase:	32					
		End Date:	8/15/2018							
	Scrapers	361	0.48				Export volume = 13,345 cubic yards			
1	Excavators	162	0.38	8	32	8	Import volume = 0 cubic yards			
	Graders	174	0.41							
1	Rubber Tired Dozers	255	0.4	8	32	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	32	8				
Trenching		Start Date:	8/15/2018	Total phase:	0		Included in Grading / Excavation			
		End Date:	8/15/2018							
	Tractor/Loader/Backhoe	97	0.37							
	Excavators	162	0.38							
Building - Exterior		Start Date:	8/15/2018	Total phase:	466		Cement Trucks? 330 Total Round-Trips			
		End Date:	5/29/2020							
1	Cranes	226	0.29	7	466	7	Electric? (Y/N) N Otherwise assumed diesel			
2	Forklifts	89	0.2	8	466	8	Liquid Propane (LPG)? (Y/N) N Otherwise Assumed diesel			
1	Generator Sets	84	0.74	8	60	1.030043	Or Temporary line power? (Y/N) Y			
1	Tractors/Loaders/Backhoes	97	0.37	7	466	7	otherwise, assume diesel generator			
4	Welders	46	0.45	8	466	8				
						0				
Building - Interior/Architectural Coating		Start Date:	10/14/2018	Total phase:	423					
		End Date:	5/29/2020							
5	Air Compressors	78	0.48	6	423	6				
2	Aerial Lift	62	0.31	8	423	8				
Paving		Start Date:	3/30/2020	Total phase:	42					
		End Date:	5/29/2020							
	Cement and Mortar Mixers	9	0.56			0	Asphalt? ____ cubic yards or 10 round trips?			
1	Pavers	125	0.42	8	42	8				
1	Paving Equipment	130	0.36	8	42	8				
1	Rollers	80	0.38	8	42	8				
1	Tractors/Loaders/Backhoes	97	0.37	8	42	8				
Equipment listed in this sheet is to provide an example of inputs				Add or subtract phases and equipment, as appropriate						
It is assumed that water trucks would be used during grading				Modify horsepower or load factor, as appropriate						

Franklin Towers, Criteria and Operational Emissions - Alameda County, Annual

Franklin Towers, Criteria and Operational Emissions

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	57.90	1000sqft	0.00	57,900.00	0
Enclosed Parking with Elevator	86.00	Space	0.00	20,288.00	0
Fast Food Restaurant w/o Drive Thru	5.40	1000sqft	0.00	5,400.00	0
Apartments High Rise	179.00	Dwelling Unit	0.37	289,116.00	512
Single Family Housing	5.00	Dwelling Unit	0.00	9,000.00	14

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	435	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Most recent and verified PG&E rate

Land Use - Land Use Sizes from construction worksheet

Construction Phase - Applicant provided construction schedule

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Off-road Equipment - Applicant provided equipment information

Trips and VMT - Demolition trips= 41+(246/20*2), Building construction=330*2=660 trips, Paving=10*2=20 trips

Demolition - 9100 sf of building demolition

pavement demolition accounted for in demolition trips

Grading - 13345 cy soil off haul

Vehicle Trips - Trip generation calculations based on project TIA

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Woodstoves - No woodstoves or wood fuelled fireplaces

Energy Use - title 24, 2013 values used

Stationary Sources - Emergency Generators and Fire Pumps - 1000 kw generator

Table Name	Column Name	Default Value	New Value
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	FireplaceWoodMass	228.80	0.00
tblFireplaces	NumberGas	26.85	179.00
tblFireplaces	NumberGas	1.25	5.00
tblFireplaces	NumberNoFireplace	7.16	0.00
tblFireplaces	NumberNoFireplace	0.40	0.00
tblFireplaces	NumberWood	2.15	0.00
tblGrading	MaterialExported	0.00	13,345.00
tblLandUse	BuildingSpaceSquareFeet	34,400.00	20,288.00
tblLandUse	BuildingSpaceSquareFeet	179,000.00	289,116.00
tblLandUse	LandUseSquareFeet	34,400.00	20,288.00
tblLandUse	LandUseSquareFeet	179,000.00	289,116.00
tblLandUse	LotAcreage	1.33	0.00
tblLandUse	LotAcreage	0.77	0.00
tblLandUse	LotAcreage	0.12	0.00
tblLandUse	LotAcreage	2.89	0.37
tblLandUse	LotAcreage	1.62	0.00

tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	OperationalYear	2018	2021
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	41.00	68.00
tblTripsAndVMT	HaulingTripNumber	0.00	660.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblVehicleTrips	DV_TP	11.00	12.00
tblVehicleTrips	DV_TP	37.00	43.00
tblVehicleTrips	DV_TP	19.00	21.00
tblVehicleTrips	DV_TP	11.00	12.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PB_TP	12.00	0.00
tblVehicleTrips	PB_TP	4.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	88.00
tblVehicleTrips	PR_TP	51.00	57.00
tblVehicleTrips	PR_TP	77.00	79.00
tblVehicleTrips	PR_TP	86.00	88.00
tblVehicleTrips	ST_TR	4.98	4.81
tblVehicleTrips	ST_TR	696.00	74.53
tblVehicleTrips	ST_TR	2.46	2.01
tblVehicleTrips	ST_TR	9.91	6.25
tblVehicleTrips	SU_TR	3.65	3.52
tblVehicleTrips	SU_TR	500.00	55.08
tblVehicleTrips	SU_TR	1.05	0.86
tblVehicleTrips	SU_TR	8.62	5.43
tblVehicleTrips	WD_TR	4.20	4.06
tblVehicleTrips	WD_TR	716.00	76.67

tblVehicleTrips	WD_TR	11.03	9.02
tblVehicleTrips	WD_TR	9.52	6.00
tblWoodstoves	WoodstoveWoodMass	582.40	0.00
tblWoodstoves	WoodstoveWoodMass	956.80	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	0.6199	2.3591	1.7797	4.1300e-003	0.2033	0.1123	0.3156	0.0811	0.1073	0.1884	0.0000	370.2638	370.2638	0.0521	0.0000	371.5672
2019	2.1357	4.2909	4.1896	8.5900e-003	0.2314	0.2250	0.4564	0.0622	0.2183	0.2805	0.0000	751.0349	751.0349	0.0967	0.0000	753.4515
2020	0.8611	1.8046	1.8515	3.7900e-003	0.0983	0.0897	0.1879	0.0264	0.0865	0.1128	0.0000	329.8771	329.8771	0.0462	0.0000	331.0329
Maximum	2.1357	4.2909	4.1896	8.5900e-003	0.2314	0.2250	0.4564	0.0811	0.2183	0.2805	0.0000	751.0349	751.0349	0.0967	0.0000	753.4515

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2018	8-31-2018	1.0674	1.0674
2	9-1-2018	11-30-2018	1.3323	1.3323
3	12-1-2018	2-28-2019	1.6249	1.6249
4	3-1-2019	5-31-2019	1.6176	1.6176
5	6-1-2019	8-31-2019	1.6152	1.6152
6	9-1-2019	11-30-2019	1.6024	1.6024
7	12-1-2019	2-29-2020	1.5401	1.5401
8	3-1-2020	5-31-2020	1.6649	1.6649

		Highest	1.6649	1.6649
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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	1.7000	0.0357	1.3790	2.0000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	25.2048	25.2048	2.6100e-003	4.2000e-004	25.3955
Energy	0.0229	0.2014	0.1279	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	660.8978	660.8978	0.0333	0.0101	664.7532
Mobile	0.4461	2.9236	4.8426	0.0174	1.3074	0.0172	1.3247	0.3514	0.0162	0.3677	0.0000	1,601.0612	1,601.0612	0.0717	0.0000	1,602.8535
Stationary	0.0550	0.2460	0.1403	2.6000e-004		8.0900e-003	8.0900e-003		8.0900e-003	8.0900e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste						0.0000	0.0000		0.0000	0.0000	41.4650	0.0000	41.4650	2.4505	0.0000	102.7277
Water						0.0000	0.0000		0.0000	0.0000	7.5881	35.1839	42.7721	0.7817	0.0189	67.9437
Total	2.2240	3.4066	6.4898	0.0191	1.3074	0.0503	1.3577	0.3514	0.0493	0.4007	49.0531	2,347.8801	2,396.9332	3.3434	0.0295	2,489.2957

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	6/1/2018	6/29/2018	5	21	
2	Grading	Grading	7/1/2018	8/14/2018	5	32	
3	Building Construction	Building Construction	8/15/2018	5/27/2020	5	466	
4	Architectural Coating	Architectural Coating	10/14/2018	5/27/2020	5	423	
5	Paving	Paving	3/30/2020	5/26/2020	5	42	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 603,685; Residential Outdoor: 201,228; Non-Residential Indoor: 94,950; Non-Residential Outdoor: 31,650; 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	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Concrete/Industrial Saws	0	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	2	8.00	89	0.20
Building Construction	Generator Sets	1	1.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	4	8.00	46	0.45
Architectural Coating	Aerial Lifts	2	8.00	63	0.31
Architectural Coating	Air Compressors	5	6.00	78	0.48
Paving	Cement and Mortar Mixers	0	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Worker	5.7000e-004	4.5000e-004	4.4800e-003	1.0000e-005	1.0800e-003	1.0000e-005	1.0900e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	1.0198	1.0198	3.0000e-005	0.0000	1.0206
Total	8.9000e-004	0.0116	6.3200e-003	4.0000e-005	1.6600e-003	5.0000e-005	1.7100e-003	4.5000e-004	5.0000e-005	4.9000e-004	0.0000	3.6771	3.6771	1.7000e-004	0.0000	3.6814

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	7.9400e-003	0.2726	0.0451	6.8000e-004	0.0141	1.0300e-003	0.0152	3.8900e-003	9.8000e-004	4.8700e-003	0.0000	65.1811	65.1811	3.4400e-003	0.0000	65.2670
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	5.4000e-004	4.2000e-004	4.2000e-003	1.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9563	0.9563	3.0000e-005	0.0000	0.9571
Total	8.4800e-003	0.2730	0.0493	6.9000e-004	0.0151	1.0400e-003	0.0162	4.1600e-003	9.9000e-004	5.1500e-003	0.0000	66.1374	66.1374	3.4700e-003	0.0000	66.2241

3.4 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	0.1445	0.9237	0.7216	1.0800e-003		0.0574	0.0574		0.0547	0.0547	0.0000	89.6796	89.6796	0.0226	0.0000	90.2453
Total	0.1445	0.9237	0.7216	1.0800e-003		0.0574	0.0574		0.0547	0.0547	0.0000	89.6796	89.6796	0.0226	0.0000	90.2453

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	6.7000e-004	0.0229	3.7900e-003	6.0000e-005	4.4800e-003	9.0000e-005	4.5600e-003	1.1300e-003	8.0000e-005	1.2200e-003	0.0000	5.4792	5.4792	2.9000e-004	0.0000	5.4864
Vendor	8.1200e-003	0.2202	0.0503	4.6000e-004	0.0107	1.5700e-003	0.0123	3.1000e-003	1.5000e-003	4.6100e-003	0.0000	43.8105	43.8105	2.8000e-003	0.0000	43.8806
Worker	0.0332	0.0261	0.2600	6.6000e-004	0.0626	4.6000e-004	0.0631	0.0167	4.2000e-004	0.0171	0.0000	59.1734	59.1734	1.8600e-003	0.0000	59.2198
Total	0.0420	0.2692	0.3141	1.1800e-003	0.0778	2.1200e-003	0.0799	0.0209	2.0000e-003	0.0229	0.0000	108.4631	108.4631	4.9500e-003	0.0000	108.5868

3.4 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	0.3342	2.2351	1.8405	2.8500e-003		0.1315	0.1315		0.1254	0.1254	0.0000	234.3293	234.3293	0.0571	0.0000	235.7579
Total	0.3342	2.2351	1.8405	2.8500e-003		0.1315	0.1315		0.1254	0.1254	0.0000	234.3293	234.3293	0.0571	0.0000	235.7579

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6800e-003	0.0574	9.8100e-003	1.5000e-004	4.9700e-003	2.1000e-004	5.1700e-003	1.3100e-003	2.0000e-004	1.5100e-003	0.0000	14.3024	14.3024	7.4000e-004	0.0000	14.3210
Vendor	0.0194	0.5508	0.1218	1.2000e-003	0.0283	3.5200e-003	0.0318	8.1800e-003	3.3700e-003	0.0116	0.0000	114.7144	114.7144	7.0700e-003	0.0000	114.8911
Worker	0.0790	0.0603	0.6089	1.6800e-003	0.1651	1.1800e-003	0.1663	0.0439	1.0800e-003	0.0450	0.0000	151.4410	151.4410	4.3200e-003	0.0000	151.5489
Total	0.1001	0.6685	0.7406	3.0300e-003	0.1983	4.9100e-003	0.2032	0.0534	4.6500e-003	0.0581	0.0000	280.4577	280.4577	0.0121	0.0000	280.7610

3.4 Building Construction - 2020

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	0.1212	0.8414	0.7281	1.1600e-003		0.0465	0.0465		0.0443	0.0443	0.0000	94.0444	94.0444	0.0224	0.0000	94.6046
Total	0.1212	0.8414	0.7281	1.1600e-003		0.0465	0.0465		0.0443	0.0443	0.0000	94.0444	94.0444	0.0224	0.0000	94.6046

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
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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	3.7600e-003	2.9500e-003	0.0294	7.0000e-005	7.0800e-003	5.0000e-005	7.1400e-003	1.8800e-003	5.0000e-005	1.9300e-003	0.0000	6.6944	6.6944	2.1000e-004	0.0000	6.6996
Total	3.7600e-003	2.9500e-003	0.0294	7.0000e-005	7.0800e-003	5.0000e-005	7.1400e-003	1.8800e-003	5.0000e-005	1.9300e-003	0.0000	6.6944	6.6944	2.1000e-004	0.0000	6.6996

3.5 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	1.5011					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1845	1.3753	1.4867	2.3800e-003		0.0884	0.0884		0.0880	0.0880	0.0000	205.9598	205.9598	0.0265	0.0000	206.6229
Total	1.6856	1.3753	1.4867	2.3800e-003		0.0884	0.0884		0.0880	0.0880	0.0000	205.9598	205.9598	0.0265	0.0000	206.6229

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	0.0158	0.0121	0.1218	3.4000e-004	0.0330	2.4000e-004	0.0333	8.7800e-003	2.2000e-004	9.0000e-003	0.0000	30.2882	30.2882	8.6000e-004	0.0000	30.3098

Total	0.0158	0.0121	0.1218	3.4000e-004	0.0330	2.4000e-004	0.0333	8.7800e-003	2.2000e-004	9.0000e-003	0.0000	30.2882	30.2882	8.6000e-004	0.0000	30.3098
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3.5 Architectural Coating - 2020

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	0.6097					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0684	0.5144	0.6013	9.7000e-004		0.0309	0.0309		0.0308	0.0308	0.0000	83.2990	83.2990	0.0103	0.0000	83.5564
Total	0.6780	0.5144	0.6013	9.7000e-004		0.0309	0.0309		0.0308	0.0308	0.0000	83.2990	83.2990	0.0103	0.0000	83.5564

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	5.8700e-003	4.3300e-003	0.0444	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6500e-003	0.0000	11.9204	11.9204	3.1000e-004	0.0000	11.9281
Total	5.8700e-003	4.3300e-003	0.0444	1.3000e-004	0.0134	9.0000e-005	0.0135	3.5700e-003	9.0000e-005	3.6500e-003	0.0000	11.9204	11.9204	3.1000e-004	0.0000	11.9281

3.6 Paving - 2020

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	0.0186	0.1919	0.2017	3.0000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	26.7595	26.7595	8.6500e-003	0.0000	26.9759
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0186	0.1919	0.2017	3.0000e-004		0.0107	0.0107		9.8400e-003	9.8400e-003	0.0000	26.7595	26.7595	8.6500e-003	0.0000	26.9759

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	8.0000e-005	2.9200e-003	5.1000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7656	0.7656	4.0000e-005	0.0000	0.7666
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	7.3000e-004	5.4000e-004	5.4900e-003	2.0000e-005	1.6600e-003	1.0000e-005	1.6700e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.4760	1.4760	4.0000e-005	0.0000	1.4770
Total	8.1000e-004	3.4600e-003	6.0000e-003	3.0000e-005	1.8300e-003	2.0000e-005	1.8500e-003	4.9000e-004	2.0000e-005	5.1000e-004	0.0000	2.2416	2.2416	8.0000e-005	0.0000	2.2435

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	0.4461	2.9236	4.8426	0.0174	1.3074	0.0172	1.3247	0.3514	0.0162	0.3677	0.0000	1,601.0612	1,601.0612	0.0717	0.0000	1,602.8535
Unmitigated	0.4461	2.9236	4.8426	0.0174	1.3074	0.0172	1.3247	0.3514	0.0162	0.3677	0.0000	1,601.0612	1,601.0612	0.0717	0.0000	1,602.8535

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	726.74	860.99	630.08	1,732,934	1,732,934
Enclosed Parking with Elevator	0.00	0.00	0.00		
Fast Food Restaurant w/o Drive Thru	414.02	402.46	297.43	715,602	715,602
General Office Building	522.26	116.38	49.79	976,609	976,609
Single Family Housing	30.00	31.25	27.15	70,470	70,470
Total	1,693.02	1,411.08	1,004.46	3,495,616	3,495,616

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	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 High Rise	10.80	4.80	5.70	31.00	15.00	54.00	88	12	0
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Fast Food Restaurant w/o Drive	9.50	7.30	7.30	1.50	79.50	19.00	57	43	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	79	21	0
Single Family Housing	10.80	4.80	5.70	31.00	15.00	54.00	88	12	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General 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

Enclosed Parking with Elevator	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
Fast Food Restaurant w/o Drive Thru	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 High 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
Single Family Housing	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

	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	434.7551	434.7551	0.0290	6.0000e-003	437.2667
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	434.7551	434.7551	0.0290	6.0000e-003	437.2667
NaturalGas Mitigated	0.0229	0.2014	0.1279	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.1427	226.1427	4.3300e-003	4.1500e-003	227.4865
NaturalGas Unmitigated	0.0229	0.2014	0.1279	1.2500e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.1427	226.1427	4.3300e-003	4.1500e-003	227.4865

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 High Rise	1.98136e+006	0.0107	0.0913	0.0389	5.8000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003	0.0000	105.7331	105.7331	2.0300e-003	1.9400e-003	106.3614
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	1.12417e+006	6.0600e-003	0.0551	0.0463	3.3000e-004		4.1900e-003	4.1900e-003		4.1900e-003	4.1900e-003	0.0000	59.9901	59.9901	1.1500e-003	1.1000e-003	60.3466
General Office Building	952455	5.1400e-003	0.0467	0.0392	2.8000e-004		3.5500e-003	3.5500e-003		3.5500e-003	3.5500e-003	0.0000	50.8266	50.8266	9.7000e-004	9.3000e-004	51.1287
Single Family Housing	179763	9.7000e-004	8.2800e-003	3.5200e-003	5.0000e-005		6.7000e-004	6.7000e-004		6.7000e-004	6.7000e-004	0.0000	9.5928	9.5928	1.8000e-004	1.8000e-004	9.6498
Total		0.0229	0.2014	0.1279	1.2400e-003		0.0158	0.0158		0.0158	0.0158	0.0000	226.1427	226.1427	4.3300e-003	4.1500e-003	227.4865

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments High Rise	789564	155.7909	0.0104	2.1500e-003	156.6909
Enclosed Parking with Elevator	136741	26.9808	1.8000e-003	3.7000e-004	27.1366
Fast Food Restaurant w/o	178848	35.2890	2.3500e-003	4.9000e-004	35.4928
General Office Building	1.05494e+006	208.1527	0.0139	2.8700e-003	209.3552
Single Family Housing	43290.8	8.5418	5.7000e-004	1.2000e-004	8.5912
Total		434.7551	0.0290	6.0000e-003	437.2667

6.0 Area Detail

	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	1.7000	0.0357	1.3790	2.0000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	25.2048	25.2048	2.6100e-003	4.2000e-004	25.3955
Unmitigated	1.7000	0.0357	1.3790	2.0000e-004		9.1600e-003	9.1600e-003		9.1600e-003	9.1600e-003	0.0000	25.2048	25.2048	2.6100e-003	4.2000e-004	25.3955

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	0.2433					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.4128					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	2.3200e-003	0.0198	8.4400e-003	1.3000e-004		1.6000e-003	1.6000e-003		1.6000e-003	1.6000e-003	0.0000	22.9704	22.9704	4.4000e-004	4.2000e-004	23.1069
Landscaping	0.0416	0.0158	1.3706	7.0000e-005		7.5500e-003	7.5500e-003		7.5500e-003	7.5500e-003	0.0000	2.2344	2.2344	2.1700e-003	0.0000	2.2886
Total	1.7000	0.0357	1.3790	2.0000e-004		9.1500e-003	9.1500e-003		9.1500e-003	9.1500e-003	0.0000	25.2048	25.2048	2.6100e-003	4.2000e-004	25.3955

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	42.7721	0.7817	0.0189	67.9437
Unmitigated	42.7721	0.7817	0.0189	67.9437

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments High Rise	11.6626 / 7.35249	21.2292	0.3812	9.2100e-003	33.5051
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	1.63908 / 0.104622	2.3422	0.0535	1.2900e-003	4.0638
General Office Building	10.2908 / 6.30725	18.6076	0.3364	8.1300e-003	29.4389
Single Family Housing	0.32577 / 0.205377	0.5930	0.0107	2.6000e-004	0.9359
Total		42.7721	0.7817	0.0189	67.9437

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	41.4650	2.4505	0.0000	102.7277
Unmitigated	41.4650	2.4505	0.0000	102.7277

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments High Rise	82.34	16.7143	0.9878	0.0000	41.4089
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
Fast Food Restaurant w/o Drive Thru	62.2	12.6260	0.7462	0.0000	31.2805
General Office Building	53.85	10.9311	0.6460	0.0000	27.0813
Single Family Housing	5.88	1.1936	0.0705	0.0000	2.9571
Total		41.4650	2.4505	0.0000	102.7277

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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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	1341	0.73	Diesel

	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 (750 - 9999 HP)	0.0550	0.2460	0.1403	2.6000e-004		8.0900e-003	8.0900e-003		8.0900e-003	8.0900e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219

Total	0.0550	0.2460	0.1403	2.6000e-004		8.0900e-003	8.0900e-003		8.0900e-003	8.0900e-003	0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
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2044 FRanklin Street, Existing Uses - Alameda County, Annual

2044 FRanklin Street, Existing Uses

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	21.00	1000sqft	0.37	21,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	435	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Most recent and verified PG&E rate

Land Use - Land Use Size from project TIA

Construction Phase - Only operational emissions being modeled

Off-road Equipment - Only operational emissions being modeled

Grading -

Demolition -

Trips and VMT - only operational emissions

Vehicle Trips - Trip rates from proejct TIA

Woodstoves -

Energy Use - Tiittle 2013, Default Values used

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	0.48	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblProjectCharacteristics	CO2IntensityFactor	641.35	435
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	2.46	4.35
tblVehicleTrips	SU_TR	1.05	1.86
tblVehicleTrips	WD_TR	11.03	19.52

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	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	93.9303	93.9303	5.3900e-003	1.3800e-003	94.4760
Mobile	0.1087	0.7048	1.2075	3.8700e-003	0.2784	5.3700e-003	0.2838	0.0749	5.0800e-003	0.0799	0.0000	356.2123	356.2123	0.0171	0.0000	356.6393
Waste						0.0000	0.0000		0.0000	0.0000	3.9644	0.0000	3.9644	0.2343	0.0000	9.8217
Water						0.0000	0.0000		0.0000	0.0000	1.1841	5.5648	6.7489	0.1220	2.9500e-003	10.6773
Total	0.2036	0.7217	1.2219	3.9700e-003	0.2784	6.6600e-003	0.2851	0.0749	6.3700e-003	0.0812	5.1485	455.7077	460.8562	0.3788	4.3300e-003	471.6146

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	0.1087	0.7048	1.2075	3.8700e-003	0.2784	5.3700e-003	0.2838	0.0749	5.0800e-003	0.0799	0.0000	356.2123	356.2123	0.0171	0.0000	356.6393
Unmitigated	0.1087	0.7048	1.2075	3.8700e-003	0.2784	5.3700e-003	0.2838	0.0749	5.0800e-003	0.0799	0.0000	356.2123	356.2123	0.0171	0.0000	356.6393

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	409.92	91.35	39.06	744,241	744,241
Total	409.92	91.35	39.06	744,241	744,241

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
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General 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	75.4958	75.4958	5.0300e-003	1.0400e-003	75.9319
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	75.4958	75.4958	5.0300e-003	1.0400e-003	75.9319
NaturalGas Mitigated	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4345	18.4345	3.5000e-004	3.4000e-004	18.5441
NaturalGas Unmitigated	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4345	18.4345	3.5000e-004	3.4000e-004	18.5441

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					
General Office Building	345450	1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4345	18.4345	3.5000e-004	3.4000e-004	18.5441
Total		1.8600e-003	0.0169	0.0142	1.0000e-004		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	18.4345	18.4345	3.5000e-004	3.4000e-004	18.5441

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	382620	75.4958	5.0300e-003	1.0400e-003	75.9319
Total		75.4958	5.0300e-003	1.0400e-003	75.9319

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

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.7489	0.1220	2.9500e-003	10.6773
Unmitigated	6.7489	0.1220	2.9500e-003	10.6773

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	3.73241 / 2.28761	6.7489	0.1220	2.9500e-003	10.6773
Total		6.7489	0.1220	2.9500e-003	10.6773

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	3.9644	0.2343	0.0000	9.8217
Unmitigated	3.9644	0.2343	0.0000	9.8217

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	19.53	3.9644	0.2343	0.0000	9.8217
Total		3.9644	0.2343	0.0000	9.8217

Attachment 4: Stationary Source and Roadway Screening Health Risk Calculations

This form is required when users request stationary source data from BAAQMD. This form is to be used with the BAAQMD Risk & Hazard Screening Form. For guidance on conducting a risk & hazard screening, including for roadways & freeways, refer to the District's Risk & Hazard Screening Manual.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 MOST RECENT P/O APPROVED (2017)

Printed: JUN 8, 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 #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emissions/lbs per day	Cancer Risk (in millions)
ACETALDEHYDE		0.00E+00
ACETAMIDE		0.00E+00
ACRYLAMIDE		0.00E+00
ACRYLONITRILE		0.00E+00
ALLYL CHLORIDE		0.00E+00
2-AMINOANTHRAQUINONE		0.00E+00
ANILINE		0.00E+00
ARSENIC AND COMPOUNDS (INORGANIC) ^{1,2}		0.00E+00
ASBESTOS ³		0.00E+00
BENZENE ¹		0.00E+00
BENZIDINE (AND ITS SALTS) values also apply to:		0.00E+00
Benzidine based dyes		0.00E+00
Direct Black 38		0.00E+00
Direct Blue 6		0.00E+00
Direct Brown 95 (technical grade)		0.00E+00
BENZYL CHLORIDE		0.00E+00
BERYLLIUM AND COMPOUNDS ²		0.00E+00
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)		0.00E+00
BIS(CHLOROMETHYL)ETHER		0.00E+00
POTASSIUM BROMATE		0.00E+00
1,3-BUTADIENE		0.00E+00
CADMIUM AND COMPOUNDS ²		0.00E+00
CARBON TETRACHLORIDE ¹ (Tetrachloromethane)		0.00E+00
CHLORINATED PARAFFINS		0.00E+00
4-CHLORO-O-PHENYLENEDIAMINE		0.00E+00
CHLOROFORM ¹		0.00E+00
PENTACHLOROPHENOL		0.00E+00
2,4,6-TRICHLOROPHENOL		0.00E+00
p-CHLORO-o-TOLUIDINE		0.00E+00
CHROMIUM 6+2		0.00E+00
Barium chromate2		0.00E+00
Calcium chromate2		0.00E+00
Lead chromate2		0.00E+00
Sodium dichromate2		0.00E+00
Strontium chromate2		0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)		0.00E+00
p-CRESIDINE		0.00E+00
CUPFERRON		0.00E+00
2,4-DIAMINOANISOLE		0.00E+00
2,4-DIAMINOTOLUENE		0.00E+00
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)		0.00E+00
1,4-DICHLOROBENZENE		0.00E+00
3,3-DICHLOROBENZIDINE		0.00E+00
1,1,-DICHLOROETHANE (Ethlidene dichloride)		0.00E+00
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)		0.00E+00
p-DIMETHYLAMINOAZOBENZENE		0.00E+00
2,4-DINITROTOLUENE		0.00E+00
1,4-DIOXANE (1,4-Diethylene dioxide)		0.00E+00
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0.00E+00
ETHYL BENZENE		0.00E+00
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0.00E+00
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0.00E+00
ETHYLENE OXIDE (1,2-Epoxyethane)		0.00E+00
ETHYLENE THIOUREA		0.00E+00
FORMALDEHYDE		0.00E+00
HEXACHLOROBENZENE		0.00E+00
HEXACHLOROCYCLOHEXANES (mixed or technical grade)		0.00E+00
alpha-HEXACHLOROCYCLOHEXANE		0.00E+00
beta- HEXACHLOROCYCLOHEXANE		0.00E+00
gamma-HEXACHLOROCYCLOHEXANE (Lindane)		0.00E+00
HYDRAZINE		0.00E+00
LEAD AND COMPOUNDS 2,4 (inorganic) values also apply to:		0.00E+00
Lead acetate2		0.00E+00
Lead phosphate2		0.00E+00
Lead subacetate2		0.00E+00
METHYL tertiary-BUTYL ETHER		0.00E+00
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)		0.00E+00
METHYLENE CHLORIDE (Dichloromethane)		0.00E+00
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0.00E+00
MICHLER'S KETONE (4,4'-Bis(dimethylamino)benzophenone)		0.00E+00
N-NITROSODI-n-BUTYLAMINE		0.00E+00
N-NITROSODI-n-PROPYLAMINE		0.00E+00
N-NITROSODIETHYLAMINE		0.00E+00
N-NITROSODIMETHYLAMINE		0.00E+00
N-NITROSODIPHENYLAMINE		0.00E+00
N-NITROSO-N-METHYLETHYLAMINE		0.00E+00
N-NITROSOMORPHOLINE		0.00E+00
N-NITROSOPIPERIDINE		0.00E+00
N-NITROSOPYRROLIDINE		0.00E+00
NICKEL AND COMPOUNDS2 (values also apply to:)		0.00E+00
Nickel acetate2		0.00E+00
Nickel carbonate2		0.00E+00
Nickel carbonyl2		0.00E+00
Nickel hydroxide2		0.00E+00
Nickelocene2		0.00E+00
NICKEL OXIDE2		0.00E+00
Nickel refinery dust from the pyrometallurgical process2		0.00E+00
Nickel subsulfide2		0.00E+00
p-NITROSODIPHENYLAMINE		0.00E+00
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.05E-03	3.24E-06
PERCHLOROETHYLENE (Tetrachloroethylene)		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [low risk] 2,6		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [high risk] 2,6		0.00E+00
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0.00E+00
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0.00E+00
POLYCYCLIC AROMATIC HYDROCARBON2 (PAH) (AS B(a)P-EQUIV)5		0.00E+00
BENZO(A)PYRENE2,5		0.00E+00
NAPHTHALENE		0.00E+00
1,3-PROPANE SULTONE		0.00E+00
PROPYLENE OXIDE		0.00E+00
1,1,2,2-TETRACHLOROETHANE		0.00E+00
THIOACETAMIDE		0.00E+00
Toluene diisocyanates		0.00E+00
TOLUENE-2,4-DIISOCYANATE		0.00E+00
TOLUENE-2,6-DIISOCYANATE		0.00E+00
1,1,2-TRICHLOROETHANE (Vinyl trichloride)		0.00E+00
TRICHLOROETHYLENE		0.00E+00
URETHANE (Ethyl carbamate)		0.00E+00
VINYL CHLORIDE (Chloroethylene)		0.00E+00
	TOTAL:	3.24E-06

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emission/lbs per day	Chronic Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLONITRILE		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BERYLLIUM AND COMPOUNDS2		0
1,3-BUTADIENE		0
CADMIUM AND COMPOUNDS2		0
CARBON DISULFIDE1		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLORINE DIOXIDE		0
CHLOROBENZENE		0
CHLOROFORM1		0
2,3,4,6-Tetrachlorophenol		0
CHLOROPICRIN		0
CHROMIUM 6+2		0
Barium chromate2		0
Calcium chromate2		0
Lead chromate2		0
Sodium dichromate2		0
Strontium chromate2		0
CHROMIC TRIOXIDE (as chromic acid mist)		0
CRESOLS		0
M-CRESOL		0
O-CRESOL		0
P-CRESOL		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DICHLOROBENZENE		0
DIETHANOLAMINE		0
DIMETHYLAMINE		0
N,N-DIMETHYL FORMAMIDE		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
1,2-EPOXYBUTANE		0
ETHYL BENZENE		0
ETHYL CHLORIDE (Chloroethane)		0
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0
ETHYLENE GLYCOL		0
ETHYLENE OXIDE (1,2-Epoxyethane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
GASOLINE VAPORS		0
GLUTARALDEHYDE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA		0
n-HEXANE		0
HYDRAZINE		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPHORONE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MALEIC ANHYDRIDE		0
MANGANESE AND COMPOUNDS		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL tertiary-BUTYL ETHER		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ISOCYANATE		0
METHYLENE CHLORIDE (Dichloromethane)		0
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0
METHYLENE DIPHENYL ISOCYANATE		0
NICKEL AND COMPOUNDS2 (values also apply to):		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITROGEN DIOXIDE		0
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.05E-03	0.001151545
PERCHLOROETHYLENE (Tetrachloroethylene)		0
PHENOL		0
PHOSPHINE		0
PHOSPHORIC ACID		0
PHOSPHORUS (WHITE)		0
PHTHALIC ANHYDRIDE		0
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN2,7		0
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0
1,2,3,7,8-PENTACHLORODIBENZOFURAN2,7		0
2,3,4,7,8-PENTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN2,7		0
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN2,7		0
NAPHTHALENE		0
PROPYLENE (PROPENE)		0
PROPYLENE GLYCOL MONOMETHYL ETHER		0
PROPYLENE OXIDE		0
SELENIUM AND COMPOUNDS		0
Selenium sulfide		0
SILICA (Crystalline, Respirable)		0
STYRENE		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
Toluene diisocyanates		0
TOLUENE-2,4-DIISOCYANATE		0
TOLUENE-2,6-DIISOCYANATE		0
TRICHLOROETHYLENE		0
TRIETHYLAMINE		0
VINYL ACETATE		0
VINYLDENE CHLORIDE (1,1-Dichloroethylene)		0
XYLENES (mixed isomers)		0
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
TOTAL:		1.15E-03

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Diesel PM Concentrations	Emissions (lbs/day)	12.5 Concentration (ug/m3)
	3.05E-03	0.005889093
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0.005889093

Plant #:

Plant Name:

Number of Sources:

Fac

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98	0.73		0		0
35	115	0.64				
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31	4.45E+00	1.37957599	0.005889093	0.001825619
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
220	722	0.07		0		0
240	787	0.06		0		0
260	853	0.05		0		0
280	918	0.04		0		0

DWFIU 1999 Harrison, LLC (P# 19997)

S# SOURCE NAME
MATERIAL SOURCE CODE
THROUGHPUT DATE POLLUTANT CODE LBS/DAY

1 Emergency Standby Diesel Fire Pump

C24AG098

Benzene	41	2.66E-03
Formaldehyde	124	2.17E-04
Organics (other, including	990	1.45E-01
Arsenic (all)	1030	2.29E-06
Beryllium (all) pollutant	1040	1.34E-06
Cadmium	1070	5.72E-06
Chromium (hexavalent)	1095	1.18E-07
Lead (all) pollutant	1140	4.85E-06
Manganese	1160	7.61E-06
Nickel pollutant	1180	9.26E-05
Mercury (all) pollutant	1190	1.62E-06
Diesel Engine Exhaust Part	1350	2.52E-02
PAH's (non-speciated)	1840	1.21E-05
Nitrous Oxide (N2O)	2030	7.04E-04
Nitrogen Oxides (part not	2990	1.85E+00
Sulfur Dioxide (SO2)	3990	8.58E-04
Carbon Monoxide (CO) pollu	4990	4.02E-01
Carbon Dioxide, non-biogen	6960	8.80E+01
Methane (CH4)	6970	3.52E-03

2 Emergency Standby Diesel Generator Set

C22AH098

Benzene	41	7.44E-04
Formaldehyde	124	6.16E-05
Organics (other, including	990	3.60E-02
Arsenic (all)	1030	6.48E-07
Beryllium (all) pollutant	1040	3.80E-07
Cadmium	1070	1.62E-06
Chromium (hexavalent)	1095	3.35E-08
Lead (all) pollutant	1140	1.37E-06
Manganese	1160	2.16E-06
Nickel pollutant	1180	2.62E-05
Mercury (all) pollutant	1190	4.58E-07
Diesel Engine Exhaust Part	1350	7.15E-03
PAH's (non-speciated)	1840	3.42E-06
Nitrous Oxide (N2O)	2030	1.99E-04
Nitrogen Oxides (part not	2990	5.24E-01
Sulfur Dioxide (SO2)	3990	2.43E-04
Carbon Monoxide (CO) pollu	4990	1.14E-01
Carbon Dioxide, non-biogen	6960	2.49E+01

Methane (CH₄) 6970 9.97E-04

PLANT TOTAL:

lbs/day Pollutant

2.94E-06 Arsenic (all) (1030)
3.41E-03 Benzene (41)
1.72E-06 Beryllium (all) pollutant (1040)
7.34E-06 Cadmium (1070)
1.13E+02 Carbon Dioxide, non-biogenic CO₂ (6960)
5.16E-01 Carbon Monoxide (CO) pollutant (4990)
1.52E-07 Chromium (hexavalent) (1095)
3.24E-02 Diesel Engine Exhaust Particulate Matter (1350)
2.79E-04 Formaldehyde (124)
6.23E-06 Lead (all) pollutant (1140)
9.77E-06 Manganese (1160)
2.08E-06 Mercury (all) pollutant (1190)
4.52E-03 Methane (CH₄) (6970)
1.19E-04 Nickel pollutant (1180)
2.37E+00 Nitrogen Oxides (part not spec elsewhere) (2990)
9.03E-04 Nitrous Oxide (N₂O) (2030)
1.81E-01 Organics (other, including CH₄) (990)
1.55E-05 PAH's (non-speciated) (1840)
1.10E-03 Sulfur Dioxide (SO₂) (3990)

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emissions/lbs per day	Cancer Risk (in millions)
ACETALDEHYDE		0.00E+00
ACETAMIDE		0.00E+00
ACRYLAMIDE		0.00E+00
ACRYLONITRILE		0.00E+00
ALLYL CHLORIDE		0.00E+00
2-AMINOANTHRAQUINONE		0.00E+00
ANILINE		0.00E+00
ARSENIC AND COMPOUNDS (INORGANIC) ^{1,2}		0.00E+00
ASBESTOS ³		0.00E+00
BENZENE ¹		0.00E+00
BENZIDINE (AND ITS SALTS) values also apply to:		0.00E+00
Benzidine based dyes		0.00E+00
Direct Black 38		0.00E+00
Direct Blue 6		0.00E+00
Direct Brown 95 (technical grade)		0.00E+00
BENZYL CHLORIDE		0.00E+00
BERYLLIUM AND COMPOUNDS ²		0.00E+00
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)		0.00E+00
BIS(CHLOROMETHYL)ETHER		0.00E+00
POTASSIUM BROMATE		0.00E+00
1,3-BUTADIENE		0.00E+00
CADMIUM AND COMPOUNDS ²		0.00E+00
CARBON TETRACHLORIDE ¹ (Tetrachloromethane)		0.00E+00
CHLORINATED PARAFFINS		0.00E+00
4-CHLORO-O-PHENYLENEDIAMINE		0.00E+00
CHLOROFORM ¹		0.00E+00
PENTACHLOROPHENOL		0.00E+00
2,4,6-TRICHLOROPHENOL		0.00E+00
p-CHLORO-o-TOLUIDINE		0.00E+00
CHROMIUM 6+2		0.00E+00
Barium chromate2		0.00E+00
Calcium chromate2		0.00E+00
Lead chromate2		0.00E+00
Sodium dichromate2		0.00E+00
Strontium chromate2		0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)		0.00E+00
p-CRESIDINE		0.00E+00
CUPFERRON		0.00E+00
2,4-DIAMINOANISOLE		0.00E+00
2,4-DIAMINOTOLUENE		0.00E+00
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)		0.00E+00
1,4-DICHLOROBENZENE		0.00E+00
3,3-DICHLOROBENZIDINE		0.00E+00
1,1,-DICHLOROETHANE (Ethlidene dichloride)		0.00E+00
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)		0.00E+00
p-DIMETHYLAMINOAZOBENZENE		0.00E+00
2,4-DINITROTOLUENE		0.00E+00
1,4-DIOXANE (1,4-Diethylene dioxide)		0.00E+00
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0.00E+00
ETHYL BENZENE		0.00E+00
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0.00E+00
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0.00E+00
ETHYLENE OXIDE (1,2-Epoxyethane)		0.00E+00
ETHYLENE THIOUREA		0.00E+00
FORMALDEHYDE		0.00E+00
HEXACHLOROBENZENE		0.00E+00
HEXACHLOROCYCLOHEXANES (mixed or technical grade)		0.00E+00
alpha-HEXACHLOROCYCLOHEXANE		0.00E+00
beta- HEXACHLOROCYCLOHEXANE		0.00E+00
gamma-HEXACHLOROCYCLOHEXANE (Lindane)		0.00E+00
HYDRAZINE		0.00E+00
LEAD AND COMPOUNDS 2,4 (inorganic) values also apply to:		0.00E+00
Lead acetate2		0.00E+00
Lead phosphate2		0.00E+00
Lead subacetate2		0.00E+00
METHYL tertiary-BUTYL ETHER		0.00E+00
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)		0.00E+00
METHYLENE CHLORIDE (Dichloromethane)		0.00E+00
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0.00E+00
MICHLER'S KETONE (4,4'-Bis(dimethylamino)benzophenone)		0.00E+00
N-NITROSODI-n-BUTYLAMINE		0.00E+00
N-NITROSODI-n-PROPYLAMINE		0.00E+00
N-NITROSODIETHYLAMINE		0.00E+00
N-NITROSODIMETHYLAMINE		0.00E+00
N-NITROSODIPHENYLAMINE		0.00E+00
N-NITROSO-N-METHYLETHYLAMINE		0.00E+00
N-NITROSOMORPHOLINE		0.00E+00
N-NITROSOPIPERIDINE		0.00E+00
N-NITROSOPYRROLIDINE		0.00E+00
NICKEL AND COMPOUNDS2 (values also apply to:)		0.00E+00
Nickel acetate2		0.00E+00
Nickel carbonate2		0.00E+00
Nickel carbonyl2		0.00E+00
Nickel hydroxide2		0.00E+00
Nickelocene2		0.00E+00
NICKEL OXIDE2		0.00E+00
Nickel refinery dust from the pyrometallurgical process2		0.00E+00
Nickel subsulfide2		0.00E+00
p-NITROSODIPHENYLAMINE		0.00E+00
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.24E-02	3.44E-05
PERCHLOROETHYLENE (Tetrachloroethylene)		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [low risk] 2,6		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [high risk] 2,6		0.00E+00
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0.00E+00
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0.00E+00
POLYCYCLIC AROMATIC HYDROCARBON2 (PAH) (AS B(a)P-EQUIV)5		0.00E+00
BENZO(A)PYRENE2,5		0.00E+00
NAPHTHALENE		0.00E+00
1,3-PROPANE SULTONE		0.00E+00
PROPYLENE OXIDE		0.00E+00
1,1,2,2-TETRACHLOROETHANE		0.00E+00
THIOACETAMIDE		0.00E+00
Toluene diisocyanates		0.00E+00
TOLUENE-2,4-DIISOCYANATE		0.00E+00
TOLUENE-2,6-DIISOCYANATE		0.00E+00
1,1,2-TRICHLOROETHANE (Vinyl trichloride)		0.00E+00
TRICHLOROETHYLENE		0.00E+00
URETHANE (Ethyl carbamate)		0.00E+00
VINYL CHLORIDE (Chloroethylene)		0.00E+00
	TOTAL:	3.44E-05

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emission/lbs per day	Chronic Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLONITRILE		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BERYLLIUM AND COMPOUNDS2		0
1,3-BUTADIENE		0
CADMIUM AND COMPOUNDS2		0
CARBON DISULFIDE1		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLORINE DIOXIDE		0
CHLOROBENZENE		0
CHLOROFORM1		0
2,3,4,6-Tetrachlorophenol		0
CHLOROPICRIN		0
CHROMIUM 6+2		0
Barium chromate2		0
Calcium chromate2		0
Lead chromate2		0
Sodium dichromate2		0
Strontium chromate2		0
CHROMIC TRIOXIDE (as chromic acid mist)		0
CRESOLS		0
M-CRESOL		0
O-CRESOL		0
P-CRESOL		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DICHLOROBENZENE		0
DIETHANOLAMINE		0
DIMETHYLAMINE		0
N,N-DIMETHYL FORMAMIDE		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
1,2-EPOXYBUTANE		0
ETHYL BENZENE		0
ETHYL CHLORIDE (Chloroethane)		0
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0
ETHYLENE GLYCOL		0
ETHYLENE OXIDE (1,2-Epoxyethane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
GASOLINE VAPORS		0
GLUTARALDEHYDE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA		0
n-HEXANE		0
HYDRAZINE		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPHORONE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MALEIC ANHYDRIDE		0
MANGANESE AND COMPOUNDS		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL tertiary-BUTYL ETHER		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ISOCYANATE		0
METHYLENE CHLORIDE (Dichloromethane)		0
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0
METHYLENE DIPHENYL ISOCYANATE		0
NICKEL AND COMPOUNDS2 (values also apply to):		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITROGEN DIOXIDE		0
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.24E-02	0.012232804
PERCHLOROETHYLENE (Tetrachloroethylene)		0
PHENOL		0
PHOSPHINE		0
PHOSPHORIC ACID		0
PHOSPHORUS (WHITE)		0
PHTHALIC ANHYDRIDE		0
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN2,7		0
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0
1,2,3,7,8-PENTACHLORODIBENZOFURAN2,7		0
2,3,4,7,8-PENTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN2,7		0
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN2,7		0
NAPHTHALENE		0
PROPYLENE (PROPENE)		0
PROPYLENE GLYCOL MONOMETHYL ETHER		0
PROPYLENE OXIDE		0
SELENIUM AND COMPOUNDS		0
Selenium sulfide		0
SILICA (Crystalline, Respirable)		0
STYRENE		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
Toluene diisocyanates		0
TOLUENE-2,4-DIISOCYANATE		0
TOLUENE-2,6-DIISOCYANATE		0
TRICHLOROETHYLENE		0
TRIETHYLAMINE		0
VINYL ACETATE		0
VINYLDIENE CHLORIDE (1,1-Dichloroethylene)		0
XYLENES (mixed isomers)		0
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
TOTAL:		1.22E-02

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Diesel PM Concentrations	Emissions (lbs/day)	12.5 Concentration (ug/m3)
	3.24E-02	0.06255954
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0.06255954

Plant #:

Plant Name:

Number of Sources:

Fac

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98	0.73		0		0
35	115	0.64				
40	131	0.58				
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31		0		0
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
220	722	0.07		0		0
240	787	0.06	4.73E+01	2.84E+00	0.06255954	0.003753572
260	853	0.05		0		0
280	918	0.04		0		0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 MOST RECENT P/O APPROVED (2016)

Printed: JUN 8, 2017

Pacific Bell Telephone Co (dba, AT&T California) (P# 19999)

S#	SOURCE NAME
MATERIAL	SOURCE CODE
THROUGHPUT	DATE POLLUTANT
	CODE LBS/DAY

1 Emergency Diesel Fire Pump Engine

C24AG098

Organics (other, including	990	5.62E-03
Arsenic (all)	1030	9.53E-08
Beryllium (all) pollutant	1040	5.59E-08
Cadmium	1070	2.38E-07
Chromium (hexavalent)	1095	4.93E-09
Lead (all) pollutant	1140	2.02E-07
Manganese	1160	3.17E-07
Nickel pollutant	1180	3.86E-06
Mercury (all) pollutant	1190	6.74E-08
Diesel Engine Exhaust Part	1350	3.09E-03
PAH's (non-speciated)	1840	5.03E-07
Nitrous Oxide (N2O)	2030	2.93E-05
Nitrogen Oxides (part not	2990	6.74E-02
Sulfur Dioxide (SO2)	3990	3.58E-05
Carbon Monoxide (CO) pollu	4990	2.42E-02
Carbon Dioxide, non-biogen	6960	3.67E+00
Methane (CH4)	6970	1.47E-04

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emissions/lbs per day	Cancer Risk (in millions)
ACETALDEHYDE		0.00E+00
ACETAMIDE		0.00E+00
ACRYLAMIDE		0.00E+00
ACRYLONITRILE		0.00E+00
ALLYL CHLORIDE		0.00E+00
2-AMINOANTHRAQUINONE		0.00E+00
ANILINE		0.00E+00
ARSENIC AND COMPOUNDS (INORGANIC) ^{1,2}		0.00E+00
ASBESTOS ³		0.00E+00
BENZENE ¹		0.00E+00
BENZIDINE (AND ITS SALTS) values also apply to:		0.00E+00
Benzidine based dyes		0.00E+00
Direct Black 38		0.00E+00
Direct Blue 6		0.00E+00
Direct Brown 95 (technical grade)		0.00E+00
BENZYL CHLORIDE		0.00E+00
BERYLLIUM AND COMPOUNDS ²		0.00E+00
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)		0.00E+00
BIS(CHLOROMETHYL)ETHER		0.00E+00
POTASSIUM BROMATE		0.00E+00
1,3-BUTADIENE		0.00E+00
CADMIUM AND COMPOUNDS ²		0.00E+00
CARBON TETRACHLORIDE ¹ (Tetrachloromethane)		0.00E+00
CHLORINATED PARAFFINS		0.00E+00
4-CHLORO-O-PHENYLENEDIAMINE		0.00E+00
CHLOROFORM ¹		0.00E+00
PENTACHLOROPHENOL		0.00E+00
2,4,6-TRICHLOROPHENOL		0.00E+00
p-CHLORO-o-TOLUIDINE		0.00E+00
CHROMIUM 6+2		0.00E+00
Barium chromate2		0.00E+00
Calcium chromate2		0.00E+00
Lead chromate2		0.00E+00
Sodium dichromate2		0.00E+00
Strontium chromate2		0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)		0.00E+00
p-CRESIDINE		0.00E+00
CUPFERRON		0.00E+00
2,4-DIAMINOANISOLE		0.00E+00
2,4-DIAMINOTOLUENE		0.00E+00
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)		0.00E+00
1,4-DICHLOROBENZENE		0.00E+00
3,3-DICHLOROBENZIDINE		0.00E+00
1,1,-DICHLOROETHANE (Ethlidene dichloride)		0.00E+00
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)		0.00E+00
p-DIMETHYLAMINOAZOBENZENE		0.00E+00
2,4-DINITROTOLUENE		0.00E+00
1,4-DIOXANE (1,4-Diethylene dioxide)		0.00E+00
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0.00E+00
ETHYL BENZENE		0.00E+00
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0.00E+00
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0.00E+00
ETHYLENE OXIDE (1,2-Epoxyethane)		0.00E+00
ETHYLENE THIOUREA		0.00E+00
FORMALDEHYDE		0.00E+00
HEXACHLOROBENZENE		0.00E+00
HEXACHLOROCYCLOHEXANES (mixed or technical grade)		0.00E+00
alpha-HEXACHLOROCYCLOHEXANE		0.00E+00
beta- HEXACHLOROCYCLOHEXANE		0.00E+00
gamma-HEXACHLOROCYCLOHEXANE (Lindane)		0.00E+00
HYDRAZINE		0.00E+00
LEAD AND COMPOUNDS 2,4 (inorganic) values also apply to:		0.00E+00
Lead acetate2		0.00E+00
Lead phosphate2		0.00E+00
Lead subacetate2		0.00E+00
METHYL tertiary-BUTYL ETHER		0.00E+00
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)		0.00E+00
METHYLENE CHLORIDE (Dichloromethane)		0.00E+00
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0.00E+00
MICHLER'S KETONE (4,4'- Bis(dimethylamino)benzophenone)		0.00E+00
N-NITROSODI-n-BUTYLAMINE		0.00E+00
N-NITROSODI-n-PROPYLAMINE		0.00E+00
N-NITROSODIETHYLAMINE		0.00E+00
N-NITROSODIMETHYLAMINE		0.00E+00
N-NITROSODIPHENYLAMINE		0.00E+00
N-NITROSO-N-METHYLETHYLAMINE		0.00E+00
N-NITROSOMORPHOLINE		0.00E+00
N-NITROSOPIPERIDINE		0.00E+00
N-NITROSOPYRROLIDINE		0.00E+00
NICKEL AND COMPOUNDS2 (values also apply to:)		0.00E+00
Nickel acetate2		0.00E+00
Nickel carbonate2		0.00E+00
Nickel carbonyl2		0.00E+00
Nickel hydroxide2		0.00E+00
Nickelocene2		0.00E+00
NICKEL OXIDE2		0.00E+00
Nickel refinery dust from the pyrometallurgical process2		0.00E+00
Nickel subsulfide2		0.00E+00
p-NITROSODIPHENYLAMINE		0.00E+00
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.09E-03	3.28E-06
PERCHLOROETHYLENE (Tetrachloroethylene)		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [low risk] 2,6		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [high risk] 2,6		0.00E+00
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0.00E+00
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0.00E+00
POLYCYCLIC AROMATIC HYDROCARBON2 (PAH) (AS B(a)P-EQUIV)5		0.00E+00
BENZO(A)PYRENE2,5		0.00E+00
NAPHTHALENE		0.00E+00
1,3-PROPANE SULTONE		0.00E+00
PROPYLENE OXIDE		0.00E+00
1,1,2,2-TETRACHLOROETHANE		0.00E+00
THIOACETAMIDE		0.00E+00
Toluene diisocyanates		0.00E+00
TOLUENE-2,4-DIISOCYANATE		0.00E+00
TOLUENE-2,6-DIISOCYANATE		0.00E+00
1,1,2-TRICHLOROETHANE (Vinyl trichloride)		0.00E+00
TRICHLOROETHYLENE		0.00E+00
URETHANE (Ethyl carbamate)		0.00E+00
VINYL CHLORIDE (Chloroethylene)		0.00E+00
	TOTAL:	3.28E-06

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emission/lbs per day	Chronic Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLONITRILE		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BERYLLIUM AND COMPOUNDS2		0
1,3-BUTADIENE		0
CADMIUM AND COMPOUNDS2		0
CARBON DISULFIDE1		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLORINE DIOXIDE		0
CHLOROBENZENE		0
CHLOROFORM1		0
2,3,4,6-Tetrachlorophenol		0
CHLOROPICRIN		0
CHROMIUM 6+2		0
Barium chromate2		0
Calcium chromate2		0
Lead chromate2		0
Sodium dichromate2		0
Strontium chromate2		0
CHROMIC TRIOXIDE (as chromic acid mist)		0
CRESOLS		0
M-CRESOL		0
O-CRESOL		0
P-CRESOL		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DICHLOROBENZENE		0
DIETHANOLAMINE		0
DIMETHYLAMINE		0
N,N-DIMETHYL FORMAMIDE		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
1,2-EPOXYBUTANE		0
ETHYL BENZENE		0
ETHYL CHLORIDE (Chloroethane)		0
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0
ETHYLENE GLYCOL		0
ETHYLENE OXIDE (1,2-Epoxyethane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
GASOLINE VAPORS		0
GLUTARALDEHYDE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA		0
n-HEXANE		0
HYDRAZINE		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPHORONE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MALEIC ANHYDRIDE		0
MANGANESE AND COMPOUNDS		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL tertiary-BUTYL ETHER		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ISOCYANATE		0
METHYLENE CHLORIDE (Dichloromethane)		0
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0
METHYLENE DIPHENYL ISOCYANATE		0
NICKEL AND COMPOUNDS2 (values also apply to):		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITROGEN DIOXIDE		0
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	3.09E-03	0.001166647
PERCHLOROETHYLENE (Tetrachloroethylene)		0
PHENOL		0
PHOSPHINE		0
PHOSPHORIC ACID		0
PHOSPHORUS (WHITE)		0
PHTHALIC ANHYDRIDE		0
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN2,7		0
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0
1,2,3,7,8-PENTACHLORODIBENZOFURAN2,7		0
2,3,4,7,8-PENTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN2,7		0
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN2,7		0
NAPHTHALENE		0
PROPYLENE (PROPENE)		0
PROPYLENE GLYCOL MONOMETHYL ETHER		0
PROPYLENE OXIDE		0
SELENIUM AND COMPOUNDS		0
Selenium sulfide		0
SILICA (Crystalline, Respirable)		0
STYRENE		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
Toluene diisocyanates		0
TOLUENE-2,4-DIISOCYANATE		0
TOLUENE-2,6-DIISOCYANATE		0
TRICHLOROETHYLENE		0
TRIETHYLAMINE		0
VINYL ACETATE		0
VINYLDIENE CHLORIDE (1,1-Dichloroethylene)		0
XYLENES (mixed isomers)		0
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
TOTAL:		1.17E-03

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Diesel PM Concentrations	Emissions (lbs/day)	12.5 Concentration (ug/m3)
	3.09E-03	0.005966327
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0.005966327

Plant #:

Plant Name:

Number of Sources:

Fac

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98	0.73		0		0
35	115	0.64				
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41	4.51E+00	1.84852969	0.005966327	0.002446194
70	230	0.31		0		0
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
220	722	0.07		0		0
240	787	0.06		0		0
260	853	0.05		0		0
280	918	0.04		0		0

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
 DETAIL POLLUTANTS - ABATED
 MOST RECENT P/O APPROVED (2017)

Printed: JUN 8, 2017

CIM Group/Ordway (P# 20095)

S#	SOURCE NAME	MATERIAL	SOURCE CODE	THROUGHPUT	DATE	POLLUTANT	CODE	LBS/DAY
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1 Emergency Standby Diesel Generator Set

C22BG098

Benzene	41	2.51E-04
Formaldehyde	124	2.08E-05
Organics (other, including	990	1.21E-02
Arsenic (all)	1030	2.18E-07
Beryllium (all) pollutant	1040	1.28E-07
Cadmium	1070	5.46E-07
Chromium (hexavalent)	1095	1.13E-08
Lead (all) pollutant	1140	4.63E-07
Manganese	1160	7.27E-07
Nickel pollutant	1180	8.84E-06
Mercury (all) pollutant	1190	1.54E-07
Diesel Engine Exhaust Part	1350	2.41E-03
PAH's (non-speciated)	1840	1.15E-06
Nitrous Oxide (N2O)	2030	6.72E-05
Nitrogen Oxides (part not	2990	1.77E-01
Sulfur Dioxide (SO2)	3990	8.19E-05
Carbon Monoxide (CO) pollu	4990	3.84E-02
Carbon Dioxide, non-biogen	6960	8.40E+00
Methane (CH4)	6970	3.36E-04

3 Diesel Fire Pump Engine

C24AG098

Benzene	41	3.41E-04
Formaldehyde	124	2.78E-05
Organics (other, including	990	2.36E-03
Arsenic (all)	1030	2.93E-07
Beryllium (all) pollutant	1040	1.72E-07
Cadmium	1070	7.33E-07
Chromium (hexavalent)	1095	1.52E-08
Lead (all) pollutant	1140	6.22E-07
Manganese	1160	9.76E-07
Nickel pollutant	1180	1.19E-05
Mercury (all) pollutant	1190	2.07E-07
Diesel Engine Exhaust Part	1350	2.51E-03
PAH's (non-speciated)	1840	1.55E-06
Nitrous Oxide (N2O)	2030	9.02E-05

Nitrogen Oxides (part not	2990	5.19E-02
Sulfur Dioxide (SO2)	3990	1.10E-04
Carbon Monoxide (CO) pollu	4990	2.36E-02
Carbon Dioxide, non-biogen	6960	1.13E+01
Methane (CH4)	6970	4.51E-04

4 Boiler #1

C1340189

Benzene	41	3.11E-05
Formaldehyde	124	1.11E-03
Toluene	293	5.03E-05
Organics (other, including	990	8.46E-02
Particulates (part not spe	1990	4.44E-02
Nitrous Oxide (N2O)	2030	3.42E-03
Nitrogen Oxides (part not	2990	2.07E+00
Sulfur Dioxide (SO2)	3990	8.40E-03
Carbon Monoxide (CO) pollu	4990	5.18E-01
Carbon Dioxide, non-biogen	6960	1.81E+03
Methane (CH4)	6970	2.81E-02

5 Boiler #2

C1340189

Benzene	41	4.44E-05
Formaldehyde	124	1.58E-03
Toluene	293	7.18E-05
Organics (other, including	990	1.21E-01
Particulates (part not spe	1990	6.34E-02
Nitrous Oxide (N2O)	2030	4.88E-03
Nitrogen Oxides (part not	2990	2.96E+00
Sulfur Dioxide (SO2)	3990	1.20E-02
Carbon Monoxide (CO) pollu	4990	7.40E-01
Carbon Dioxide, non-biogen	6960	2.59E+03
Methane (CH4)	6970	4.01E-02

6 Boiler #3

C1340189

Benzene	41	3.84E-05
Formaldehyde	124	1.37E-03
Toluene	293	6.21E-05
Organics (other, including	990	1.04E-01
Particulates (part not spe	1990	5.48E-02
Nitrous Oxide (N2O)	2030	4.22E-03
Nitrogen Oxides (part not	2990	2.56E+00
Sulfur Dioxide (SO2)	3990	1.04E-02
Carbon Monoxide (CO) pollu	4990	6.39E-01
Carbon Dioxide, non-biogen	6960	2.24E+03
Methane (CH4)	6970	3.47E-02

PLANT TOTAL:

lbs/day Pollutant

5.12E-07 Arsenic (all) (1030)
7.06E-04 Benzene (41)
3.00E-07 Beryllium (all) pollutant (1040)
1.28E-06 Cadmium (1070)
6.66E+03 Carbon Dioxide, non-biogenic CO₂ (6960)
1.96E+00 Carbon Monoxide (CO) pollutant (4990)
2.65E-08 Chromium (hexavalent) (1095)
4.92E-03 Diesel Engine Exhaust Particulate Matter (1350)
4.11E-03 Formaldehyde (124)
1.09E-06 Lead (all) pollutant (1140)
1.70E-06 Manganese (1160)
3.62E-07 Mercury (all) pollutant (1190)
1.04E-01 Methane (CH₄) (6970)
2.07E-05 Nickel pollutant (1180)
7.81E+00 Nitrogen Oxides (part not spec elsewhere) (2990)
1.27E-02 Nitrous Oxide (N₂O) (2030)
3.24E-01 Organics (other, including CH₄) (990)
2.70E-06 PAH's (non-speciated) (1840)
1.63E-01 Particulates (part not spec elsewhere) (1990)
3.10E-02 Sulfur Dioxide (SO₂) (3990)
1.84E-04 Toluene (293)

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emissions/lbs per day	Cancer Risk (in millions)
ACETALDEHYDE		0.00E+00
ACETAMIDE		0.00E+00
ACRYLAMIDE		0.00E+00
ACRYLONITRILE		0.00E+00
ALLYL CHLORIDE		0.00E+00
2-AMINOANTHRAQUINONE		0.00E+00
ANILINE		0.00E+00
ARSENIC AND COMPOUNDS (INORGANIC) ^{1,2}		0.00E+00
ASBESTOS ³		0.00E+00
BENZENE ¹		0.00E+00
BENZIDINE (AND ITS SALTS) values also apply to:		0.00E+00
<i>Benzidine based dyes</i>		0.00E+00
<i>Direct Black 38</i>		0.00E+00
<i>Direct Blue 6</i>		0.00E+00
<i>Direct Brown 95 (technical grade)</i>		0.00E+00
BENZYL CHLORIDE		0.00E+00
BERYLLIUM AND COMPOUNDS ²		0.00E+00
BIS(2-CHLOROETHYL)ETHER (Dichloroethyl ether)		0.00E+00
BIS(CHLOROMETHYL)ETHER		0.00E+00
POTASSIUM BROMATE		0.00E+00
1,3-BUTADIENE		0.00E+00
CADMIUM AND COMPOUNDS ²		0.00E+00
CARBON TETRACHLORIDE ¹ (Tetrachloromethane)		0.00E+00
CHLORINATED PARAFFINS		0.00E+00
4-CHLORO-O-PHENYLENEDIAMINE		0.00E+00
CHLOROFORM ¹		0.00E+00
PENTACHLOROPHENOL		0.00E+00
2,4,6-TRICHLOROPHENOL		0.00E+00
p-CHLORO-o-TOLUIDINE		0.00E+00
CHROMIUM 6+2		0.00E+00
<i>Barium chromate2</i>		0.00E+00
<i>Calcium chromate2</i>		0.00E+00
<i>Lead chromate2</i>		0.00E+00
<i>Sodium dichromate2</i>		0.00E+00
<i>Strontium chromate2</i>		0.00E+00
CHROMIC TRIOXIDE (as chromic acid mist)		0.00E+00
p-CRESIDINE		0.00E+00
CUPFERRON		0.00E+00
2,4-DIAMINOANISOLE		0.00E+00
2,4-DIAMINOTOLUENE		0.00E+00
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)		0.00E+00
1,4-DICHLOROBENZENE		0.00E+00
3,3-DICHLOROBENZIDINE		0.00E+00
1,1,-DICHLOROETHANE (Ethylidene dichloride)		0.00E+00
DI(2-ETHYLHEXYL)PHTHALATE (DEHP)		0.00E+00
p-DIMETHYLAMINOAZOBENZENE		0.00E+00
2,4-DINITROTOLUENE		0.00E+00
1,4-DIOXANE (1,4-Diethylene dioxide)		0.00E+00
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0.00E+00
ETHYL BENZENE		0.00E+00
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0.00E+00
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0.00E+00
ETHYLENE OXIDE (1,2-Epoxyethane)		0.00E+00
ETHYLENE THIOUREA		0.00E+00
FORMALDEHYDE		0.00E+00
HEXACHLOROBENZENE		0.00E+00
HEXACHLOROCYCLOHEXANES (mixed or technical grade)		0.00E+00
alpha-HEXACHLOROCYCLOHEXANE		0.00E+00
beta- HEXACHLOROCYCLOHEXANE		0.00E+00
gamma-HEXACHLOROCYCLOHEXANE (Lindane)		0.00E+00
HYDRAZINE		0.00E+00
LEAD AND COMPOUNDS 2,4 (inorganic) values also apply to:		0.00E+00
<i>Lead acetate2</i>		0.00E+00
<i>Lead phosphate2</i>		0.00E+00
<i>Lead subacetate2</i>		0.00E+00
METHYL tertiary-BUTYL ETHER		0.00E+00
4,4'-METHYLENE BIS (2-CHLOROANILINE) (MOCA)		0.00E+00
METHYLENE CHLORIDE (Dichloromethane)		0.00E+00
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0.00E+00
MICHLER'S KETONE (4,4'-Bis(dimethylamino)benzophenone)		0.00E+00
N-NITROSODI-n-BUTYLAMINE		0.00E+00
N-NITROSODI-n-PROPYLAMINE		0.00E+00
N-NITROSODIETHYLAMINE		0.00E+00
N-NITROSODIMETHYLAMINE		0.00E+00
N-NITROSODIPHENYLAMINE		0.00E+00
N-NITROSO-N-METHYLETHYLAMINE		0.00E+00
N-NITROSOMORPHOLINE		0.00E+00
N-NITROSOPIPERIDINE		0.00E+00
N-NITROSOPYRROLIDINE		0.00E+00
NICKEL AND COMPOUNDS2 (values also apply to:)		0.00E+00
<i>Nickel acetate2</i>		0.00E+00
<i>Nickel carbonate2</i>		0.00E+00
<i>Nickel carbonyl2</i>		0.00E+00
<i>Nickel hydroxide2</i>		0.00E+00
<i>Nickelocene2</i>		0.00E+00
NICKEL OXIDE2		0.00E+00
<i>Nickel refinery dust from the pyrometallurgical process2</i>		0.00E+00
<i>Nickel subsulfide2</i>		0.00E+00
p-NITROSODIPHENYLAMINE		0.00E+00
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	4.92E-03	5.22E-06
PERCHLOROETHYLENE (Tetrachloroethylene)		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [low risk] 2,6		0.00E+00
PCB (POLYCHLORINATED BIPHENYLS) [high risk] 2,6		0.00E+00
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0.00E+00
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0.00E+00
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0.00E+00
POLYCYCLIC AROMATIC HYDROCARBON2 (PAH) (AS B(a)P-EQUIV)5		0.00E+00
BENZO(A)PYRENE2,5		0.00E+00
NAPHTHALENE		0.00E+00
1,3-PROPANE SULTONE		0.00E+00
PROPYLENE OXIDE		0.00E+00
1,1,2,2-TETRACHLOROETHANE		0.00E+00
THIOACETAMIDE		0.00E+00
<i>Toluene diisocyanates</i>		0.00E+00
TOLUENE-2,4-DIISOCYANATE		0.00E+00
TOLUENE-2,6-DIISOCYANATE		0.00E+00
1,1,2-TRICHLOROETHANE (Vinyl trichloride)		0.00E+00
TRICHLOROETHYLENE		0.00E+00
URETHANE (Ethyl carbamate)		0.00E+00
VINYL CHLORIDE (Chloroethylene)		0.00E+00
	TOTAL:	5.22E-06

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emission/lbs per day	Chronic Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLONITRILE		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BERYLLIUM AND COMPOUNDS2		0
1,3-BUTADIENE		0
CADMIUM AND COMPOUNDS2		0
CARBON DISULFIDE1		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLORINE DIOXIDE		0
CHLOROBENZENE		0
CHLOROFORM1		0
2,3,4,6-Tetrachlorophenol		0
CHLOROPICRIN		0
CHROMIUM 6+2		0
Barium chromate2		0
Calcium chromate2		0
Lead chromate2		0
Sodium dichromate2		0
Strontium chromate2		0
CHROMIC TRIOXIDE (as chromic acid mist)		0
CRESOLS		0
M-CRESOL		0
O-CRESOL		0
P-CRESOL		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DICHLOROBENZENE		0
DIETHANOLAMINE		0
DIMETHYLAMINE		0
N,N-DIMETHYL FORMAMIDE		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
1,2-EPOXYBUTANE		0
ETHYL BENZENE		0
ETHYL CHLORIDE (Chloroethane)		0
ETHYLENE DIBROMIDE (1,2-Dibromoethane)		0
ETHYLENE DICHLORIDE (1,2-Dichloroethane)		0
ETHYLENE GLYCOL		0
ETHYLENE OXIDE (1,2-Epoxyethane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
GASOLINE VAPORS		0
GLUTARALDEHYDE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
ETHYLENE GLYCOL METHYL ETHER ACETATE – EGMEA		0
n-HEXANE		0
HYDRAZINE		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPHORONE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MALEIC ANHYDRIDE		0
MANGANESE AND COMPOUNDS		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL tertiary-BUTYL ETHER		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ISOCYANATE		0
METHYLENE CHLORIDE (Dichloromethane)		0
4,4'-METHYLENE DIANILINE (AND ITS DICHLORIDE)		0
METHYLENE DIPHENYL ISOCYANATE		0
NICKEL AND COMPOUNDS2 (values also apply to):		0
Nickel acetate2		0
Nickel carbonate2		0
Nickel carbonyl2		0
Nickel hydroxide2		0
Nickelocene2		0
NICKEL OXIDE2		0
Nickel refinery dust from the pyrometallurgical process2		0
Nickel subsulfide2		0
NITROGEN DIOXIDE		0
PARTICULATE EMISSIONS FROM DIESEL-FUELED ENGINES	4.92E-03	0.001857574
PERCHLOROETHYLENE (Tetrachloroethylene)		0
PHENOL		0
PHOSPHINE		0
PHOSPHORIC ACID		0
PHOSPHORUS (WHITE)		0
PHTHALIC ANHYDRIDE		0
POLYCHLORINATED DIBENZO-P-DIOXINS (PCDD)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8-PENTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZO-P-DIOXIN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZO-P-DIOXIN2,7		0
POLYCHLORINATED DIBENZOFURANS (PCDF)(AS 2,3,7,8-PCDD EQUIV) 2,7		0
2,3,7,8-TETRACHLORODIBENZOFURAN2,7		0
1,2,3,7,8-PENTACHLORODIBENZOFURAN2,7		0
2,3,4,7,8-PENTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,7,8,9-HEXACHLORODIBENZOFURAN2,7		0
2,3,4,6,7,8-HEXACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,7,8,9-HEPTACHLORODIBENZOFURAN2,7		0
1,2,3,4,6,7,8,9-OCTACHLORODIBENZOFURAN2,7		0
NAPHTHALENE		0
PROPYLENE (PROPENE)		0
PROPYLENE GLYCOL MONOMETHYL ETHER		0
PROPYLENE OXIDE		0
SELENIUM AND COMPOUNDS		0
Selenium sulfide		0
SILICA (Crystalline, Respirable)		0
STYRENE		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
Toluene diisocyanates		0
TOLUENE-2,4-DIISOCYANATE		0
TOLUENE-2,6-DIISOCYANATE		0
TRICHLOROETHYLENE		0
TRIETHYLAMINE		0
VINYL ACETATE		0
VINYLDENE CHLORIDE (1,1-Dichloroethylene)		0
XYLENES (mixed isomers)		0
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
TOTAL:		1.86E-03

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Diesel PM Concentrations	Emissions (lbs/day)	12.5 Concentration (ug/m3)
	1.68E-01	0.324228332
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0.324228332

Plant #:

Plant Name:

Number of Sources:

Fac

Distance meters	Distance feet	Distance adjustment multiplier	Enter Risk or Hazard	Adjusted Risk or Hazard	Enter PM2.5 Concentration	Adjusted PM2.5 Concentration
25	82	0.85		0		0
30	98	0.73		0		0
35	115	0.64				
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31		0		0
80	262	0.28		0		0
90	295	0.25		0		0
100	328	0.22		0		0
110	361	0.18		0		0
120	394	0.16		0		0
130	426	0.15		0		0
140	459	0.14		0		0
150	492	0.12		0		0
160	525	0.1		0		0
180	590	0.09		0		0
200	656	0.08		0		0
		0.075	7.18E+00	0.538406706	0.324228332	0.024317125
220	722	0.07		0		0
240	787	0.06		0		0
260	853	0.05		0		0
280	918	0.04		0		0

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	<input type="text" value="Alameda"/>
Roadway Direction	<input type="text" value="North-South"/>
Side of the Roadway	<input type="text" value="West"/>
Distance from Roadway	<input type="text" value="300"/> feet
Annual Average Daily Traffic (ADT)	<input type="text" value="13,800"/>

Results

Alameda County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.032 ($\mu\text{g}/\text{m}^3$)

Cancer Risk

1.87 (per million)

Broadway

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

Adjusted for 2015 OEHHA
and EMFAC2014 for 2018

1.29

(per million)

Note that EMFAC2014 predicts DSL PM2.5 aggregate 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 vehicles 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 Cal3qhc 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: On-site and Off-Site Generator Risk Modeling

NOTES

- ALL INTERIOR PARTITIONS SHALL BE TYPE B3 U.O.N.
ALL FURRING SHALL BE TYPE A3 U.O.N.
- REFER TO SHEET A-601 FOR PARTITION SCHEDULE AND NOTES.
- ALL WALL DIMENSIONS ARE TO FACE OF GWB OR FACE OF TILE FINISH UNLESS OTHERWISE NOTED. DIMENSIONS FOR DOORS AND WINDOWS ARE TO CENTERLINE OF OPENING OR FACE OF ROUGH OPENING.
- REFER TO A-600 FOR DOOR SCHEDULE.
- REFER TO A-100 SERIES FOR DIMENSION.
- REFER TO ELECTRICAL DRAWINGS FOR EXIT SIGNS AND EMERGENCY EXIT LIGHTING.
- REFER TO A-100 SERIES FOR PARTITION TYPE.
- PROVIDE CONTINUOUS FIRE RATED CONSTRUCTION AROUND ALL RECESSED FIXTURES LOCATED IN FIRE RATED PARTITIONS.
- PROVIDE TYPE A INSULATION ALONG ALL EXTERIOR WALLS, U.O.N. INSULATION TO START FROM FLOOR TO UNDERSIDE OF STRUCTURE.
- ADD 3/4" FIRE-RESISTIVE EXT PLYWOOD TO FACE OF SCHEDULED PARTITION AT TELECOM, LOW VOLTAGE AND ELEC. CLOSETS. EXTEND TO 8'-2" HEIGHT.
- SEE SLAB PLAN DRAWINGS FOR SLAB DEPRESSIONS.
- GYPSUM BOARD WALLS AND CEILINGS TO RECEIVE LEVEL 4 FINISH AND P-1 TYP. U.O.N. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ROOF EQUIPMENT SHOWN FOR REFERENCE ONLY. REFER TO MEPT'S DRAWINGS FOR ADDITIONAL INFORMATION.
- COORDINATE CURB SIZES & LOCATIONS WITH MECHANICAL EQUIPMENT. ELECTRICAL EQUIPMENT, PLUMBING EQUIPMENT AND STRUCTURAL DRAWINGS. DIMENSIONS SHOWN ARE BASED UPON SCHEDULED EQUIPMENT. COORDINATE ACTUAL CURB AND PLATFORM SIZES AND LOCATIONS WITH EQUIPMENT PROVIDED.

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ARCHITECT

ENGINEER

ISSUE RECORD

DATE

100% SCHEMATIC DESIGN

05/14/2017

REVISION LIST

DATE

AGENCY APPROVALS

2044 FRANKLIN ST

2044 FRANKLIN STREET
OAKLAND, CA 94612

LEGEND

- | | |
|--|---------------------------|
| | 1HR RATED WALL |
| | 2HR RATED WALL |
| | CMU WALL (SSD) |
| | SMOKE PARTITION |
| | WINDOW TYPE SYMBOL |
| | PARTITION TYPE SYMBOL |
| | DOOR SYMBOL |
| | FIRE EXTINGUISHER CABINET |



PROJECT NO.: 16501
DATE: MAY 14, 2017
SCALE: As indicated

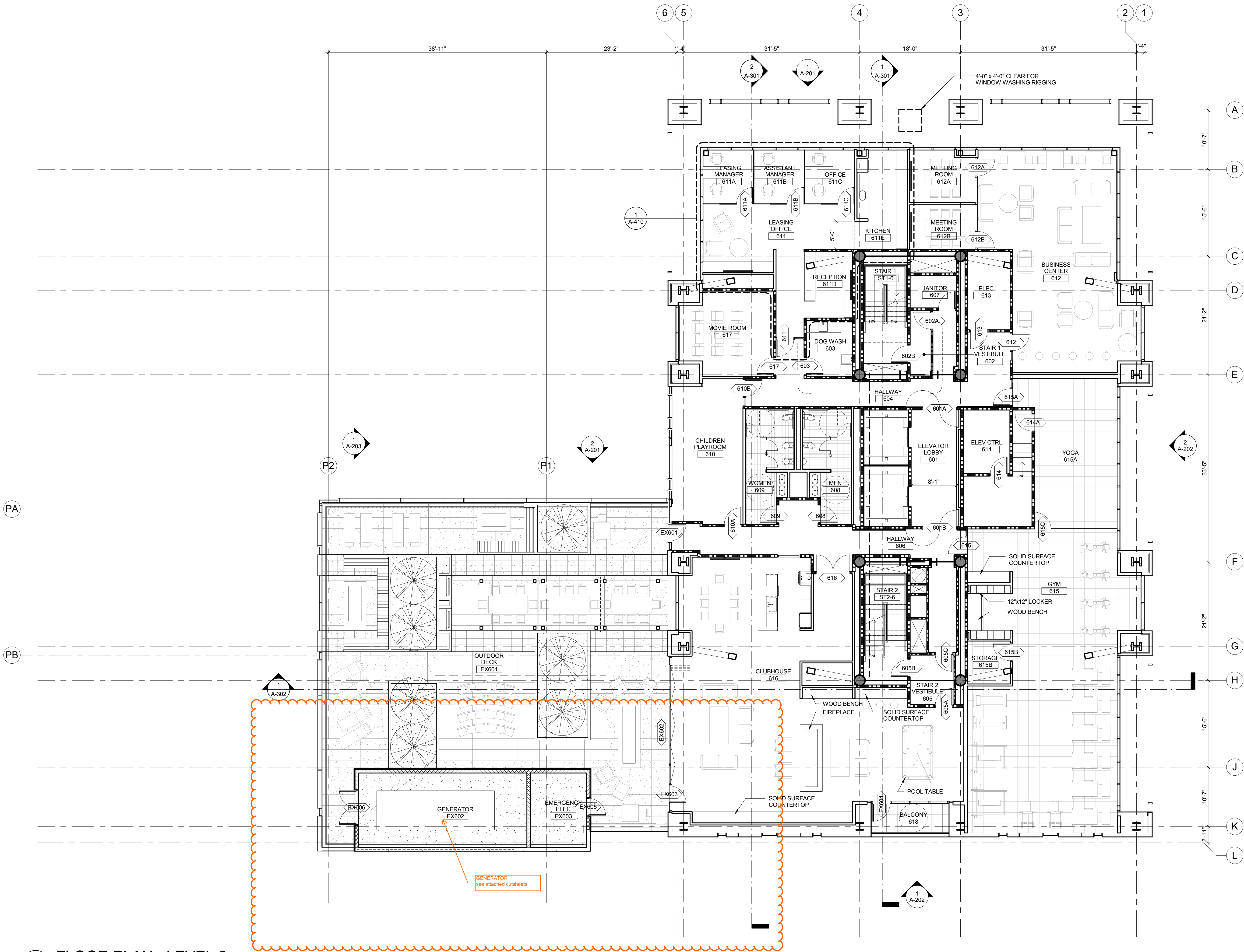
SHEET TITLE:

FLOOR PLAN - LEVEL 6

SHEET NO:

A-106

If this drawing is not 30"x42", then the drawing has been revised from its original size. Noted scales must be adjusted. This line should be equal to one inch



1 FLOOR PLAN - LEVEL 6

1/8" = 1'-0"



The C32 with the upgradeable packaging design has been developed for a wide range of applications, from emergency standby installations such as healthcare and datacenters to continuously powering remote installations. The packages can be optimized for performance to matters to you with either low emissions or low fuel consumption versions available. Backed by the worldwide network of Cat dealers ready to support your operation with technical support, service, parts, and warranty, Cat generator sets will provide the reliability and durability you expect.

Specifications

Generator Set Specifications	
Minimum Rating	830 ekW (910 kVA)
Maximum Rating	1000 ekW (1250 kVA)
Voltage	220 to 4160
Frequency	50 or 60 Hz
Speed	1500 or 1800 RPM

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption, Low Emissions

Engine Specifications	
Engine Model	C32 TA, V-12, 4-Stroke Water-Cooled Diesel
Bore	145 mm (5.71 in)
Stroke	162 mm (6.38 in)
Displacement	32.1 L (1958.86 in3)
Compression Ratio	15.0:1
Aspiration	TA
Governor Type	Adem™ A4
Fuel System	MEUI
Exhaust Flange Size (Internal Diameter)	203.2 mm (8.0 in)
Air Inlet	Single element canister style with service indicator

Benefits and Features

Cat Generator Set Package

Cat generator set packages have been fully prototype tested, and certified torsional vibration analysis reports are available. The packages are designed to accept 100% load in one step, meet the NFPA 110 requirement for loading, and conform to the ISO 8528-5 steady state and transient response requirements.

Cat Diesel Engines

The four cycle Cat diesel engine combines consistent performance with excellent fuel economy and transient response that meets or exceeds ISO 8528-5. The engines have been designed and built for a wide range of applications and can be optimized for lowest fuel consumption, low emissions, or U.S. Environmental Protection Agency (EPA) certified configurations. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide from emergency standby installations to continuously operating power plants.

Cooling System

The cooling system has been designed to operate in standard ambient temperatures up to 50°C (122°F), with optional high ambient radiators available. The factory installed cooling system has been designed and tested to ensure proper generator set cooling, and includes the radiator, fan, belts, and all guarding installed as standard. Contact your Cat Dealer for specific ambient and altitude capabilities.

Generators

The generators used on Cat packages have been designed and tested to work with the Cat engine. The generators are built with robust Class H insulation and provide industry leading motor starting capability. Random wound generators provide good generator performance in a majority of applications and form wound is available for harsh mechanical and electrical environments.

EMCP Control Panels

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. The EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules.

World Wide Product Support

Cat Dealers have over 1,800 dealer branch stores operating in 200 countries, providing extensive pre-sale and post-sale support, from 98% parts availability within 24 hours to an individualized customer support agreement (CSA), the Cat dealer will provide support.

Optional Equipment

Engine Options

- Radiator duct flange
- Dual element air cleaners
- Heavy duty air cleaners
- Muffler (industrial grade)
- Exhaust guards / shields
- Heavy duty electric starting motors
- Battery Charger (10A)
- Heavy Duty Batteries
- Jacket water heater
- Rubber anti-vibration mounts (90% efficient)
- Spring type anti-vibration mounts (95% efficient)

Control System

- EMCP (4.2) (4.3) (4.4)

- Local annunciator module
- Remote annunciator module
- Expansion I/O module
- Remote monitoring software

Generators

- Temperature Rise over 40°C ambient: ☐ 150°C ☐ 125°C ☐ 105°C ☐ 80°C
- Winding: ☐ Random ☐ Random with coastal insulation ☐ Form
- Excitation: ☐ Permanent Magnet Excited (PM) ☐ Internally Excited (IE)
- Anti-condensation heaters
- Generator stator and bearing temperature monitoring & protection

Power Termination

- Circuit breaker, 100% Rated, UL Listed (fully rated)
- Circuit breaker, IEC listed (fully rated)
- Bus bars

Extended Service Contract

- 2 Year Extended Service Contract (ESC)
- 3 Year Extended Service Contract (ESC)
- 5 Year Extended Service Contract (ESC)

The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

C32 ACERT
1000 ekW/ 1250 kVA/ 60 Hz/ 1800 rpm/ 480 V/ 0.8 Power Factor

Rating Type: STANDBY

**Emissions: U.S. EPA Certified for Stationary Emergency
 Use Only (Tier 2 Nonroad Equivalent Emission Standards)**



C32 ACERT
1000 ekW/ 1250 kVA
60 Hz/ 1800 rpm/ 480 V

Image shown may not reflect actual configuration

Metric English

Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	1000 ekW	
Genset Power Rating	1250 kVA	
Aftercooler (Separate Circuit)	N/A	N/A

Fuel Consumption		
100% Load with Fan	272.1 L/hr	71.9 gal/hr
75% Load with Fan	213.4 L/hr	56.4 gal/hr
50% Load with Fan	144.7 L/hr	38.2 gal/hr
25% Load with Fan	82.6 L/hr	21.8 gal/hr

Cooling System ¹		
Engine Coolant Capacity	55.0 L	14.5 gal

Inlet Air		
Combustion Air Inlet Flow Rate	87.6 m³/min	3094.1 cfm
Max. Allowable Combustion Air Inlet Temp	48 ° C	118 ° F

Exhaust System		
Exhaust Stack Gas Temperature	476.4 ° C	889.5 ° F
Exhaust Gas Flow Rate	228.4 m³/min	8065.3 cfm
Exhaust System Backpressure (Maximum Allowable)	N/A	N/A

C32 ACERT
1000 ekW/ 1250 kVA/ 60 Hz/ 1800 rpm/ 480 V/ 0.8 Power Factor

Rating Type: STANDBY

Emissions: U.S. EPA Certified for Stationary Emergency
Use Only (Tier 2 Nonroad Equivalent Emission Standards)

Heat Rejection

Heat Rejection to Jacket Water	352 kW	20033 Btu/min
Heat Rejection to Exhaust (Total)	1024 kW	58206 Btu/min
Heat Rejection to Aftercooler	288 kW	16385 Btu/min
Heat Rejection to Atmosphere from Engine	127 kW	7238 Btu/min
Heat Rejection to Atmosphere from Generator	55 kW	3122 Btu/min

Alternator²

Motor Starting Capability @ 30% Voltage Dip	2734 skVA
Current	1504 amps
Frame Size	1402
Excitation	IE
Temperature Rise	125 ° C

Emissions (Nominal)³

NOx	2348.6 mg/Nm ³	4.9 g/hp-hr
CO	62.1 mg/Nm ³	0.1 g/hp-hr
HC	5.5 mg/Nm ³	0.0 g/hp-hr
PM	7.2 mg/Nm ³	0.0 g/hp-hr

DEFINITIONS AND CONDITIONS

1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.
2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.
3. Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

C32 ACERT
1000 ekW/ 1250 kVA/ 60 Hz/ 1800 rpm/ 480 V/ 0.8 Power Factor

Rating Type: STANDBY

**Emissions: U.S. EPA Certified for Stationary Emergency
Use Only (Tier 2 Nonroad Equivalent Emission Standards)**

Applicable Codes and Standards:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200,
NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528,
NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

Fuel Rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

www.Cat-ElectricPower.com

Performance No.: DM9933-03

Feature Code: C32DR38

Generator Arrangement: 4326118

Date: 07/05/2016

Source Country: U.S.

The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S•O•S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

**2044 Franlin St - Emergency Backup Generator
Emissions From Periodic Generator Testing (50 Hours per Year)**

Periodic Generator Load Testing

Manufacturer/Model	Caterpillar	
Generator Set	-	
Engine	C32	Tier 2 Engine
Engine Output (hp) at Full Load	1,474	
Generator Output (kW) at Full Load	1,000	
Total No. Units	1	
Engine Load During Testing	100%	
Engine Output (hp) at Load	1,474	
Fuel Use (gal/hr) at Load	71.9	
Fuel Sulfur Content (%)	0.0015	

0.73

Emission Testing Information

	Max. Daily Testing	Maximum Annual Testing
No. Units Tested. =	1	1
Test Duration/Unit (min) =	60	60
Tests per Period/Unit =	1	50
Operation./Unit (hours) =	1	50
Total Operation (hours) =	1	50

Pollutant	Emission ¹ Factor (g/hp-hr)	Emission Rate per Unit (lb/hr)	Operational Emissions per Unit			Operational - Total Emissions ²		
			Daily (lb/day)	Annual (lb/yr)	Annual (ton/yr)	Average ⁴ Daily (lb/day)	Annual	
							(lb/yr)	(ton/yr)
NOx	4.93	16.02	16.02	801.0	0.40	2.2	801	0.40
HC	0.01	0.03	0.03	1.6	0.00	0.0	2	0.00
CO	0.13	0.42	0.42	21.1	0.01	0.1	21	0.01
PM10	0.02	0.06	0.06	3.2	0.0016	0.0	3.2	0.00
PM2.5 ³	0.02	0.06	0.06	3.0	0.0015	0.0	3	0.00
SOx ^{1a}	-	0.02	0.015	0.8	0.0004	0.0	1	0.00
CO ₂ ^{1b}	22.38 lb/gal	1,609	1,609	80,444	40.2	220	80,444	40

Notes: 1) Based on Caterpillar specification sheet for 1000 kW diesel generator set with a C32 TA diesel engine (Performance No.: DM9933-03).

1a) Calculated based on fuel sulfur content and EPA AP-42 Table 3.4-1 emission factor.

1b) CO2 emission factor from California Climate Action Registry, General Reporting Protocol, Version 3.1, January 2009

2) Based on the number of units operating for the specified time period

3) Based on CARB CEIDERS PM profile for diesel IC engines, PM2.5 fraction of PM = 0.937

4) Average daily emissions calculated from total annual emissions and 365 days per year

**2044 Franklin St, Oakland, CA - AERMOD Modeling Parameters
On-Site Project Emergency Generator**

DPM Emission Rates			
Source Type	Annual Operation (hr)	DPM Emissions	
		Daily (lb/day)	Annual* (lb/yr)
Generator	-	0.0088	3.2

* Calculated using manufacturer emission factors and engine operation of 50 hours per year.

Modeling Information	
Model:	AERMOD
Source	Diesel Engine
Source Type	Point
Distance to Residences (ft)	various
Receptor Spacing	variable - in residential areas
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data
Point Source Stack Parameters	
Generator engine size (hp)	1,474
Stack Height (ft)	89 on 6th floor level
Stack Diameter (ft)	0.67
Stack Exit Velocity (ft/sec)	385
Exhaust Temperature (F)	890
Annual Emission Rate (lb/year)	3.20
Hourly Emission Rate (lb/hr)	3.65E-04

2044 Franklin St, Oakland, CA - DPM Cancer Risks at Project Site
On-Site Project Emergency Generator
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-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 (µg/m³)

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-day)⁻¹

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
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
Off-Site Residential Receptors

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	7.00E-05	0.001
2	1 - 2	10	7.00E-05	0.023
14	3 - 16	3	7.00E-05	0.025
14	17 - 30	1	7.00E-05	0.003
Total Increased Cancer Risk				0.05

* Third trimester of pregnancy

2044 Franklin St, 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-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 (µg/m³)

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-day)⁻¹

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
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
8th 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	0.0032	0.04
2	1 - 2	10	0.0032	1.05
14	3 - 16	3	0.0032	1.16
14	17 - 30	1	0.0032	0.13
Total Increased Cancer Risk				2.4

* 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)
7th	30.0	0.00165	1.23
8th	22.2	0.00321	2.39
9th	25.3	0.00169	1.26

2044 Franklin St, Oakland, CA - AERMOD Modeling Parameters
BAAQMD Plant # 19514 (Oakland Center 21)- Ground Level Stack

DPM Emission Rates			
Source Type	Annual Operation (hr)	DPM Emissions	
		Daily* (lb/day)	Annual (lb/yr)
3 Generators	-	0.0175	6.39

* From BAAQMD permit inventory

Modeling Information		
Model:	AERMOD	
Source	Diesel Engine	
Source Type	Point	
Distance to Residences (ft)	various	
Receptor Spacing	various	
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data	
Point Source Stack Parameters		
Generator engine size (hp)	unknown	
Stack Height (ft)	6	
Stack Diameter** (ft)	0.25	
Stack Exit Velocity** (ft/sec)	164	
Exhaust Temperature** (F)	656	
Annual Emission Rate (lb/year)	6.39	from BAAQMD inventory data
Hourly Emission Rate (lb/hr)	7.30E-04	

** BAAQMD default generator parameters

2044 Franklin St, Oakland, CA - DPM Cancer Risks at Project Site
BAAQMD Plant # 19514 (Oakland Center 21)- Ground Level Stack
On-Site MEI Residential Receptors

Cancer Risk Calculation Method

Cancer Risk (per million) = $\text{CPF} \times \text{Inhalation Dose} \times \text{ASF} \times \text{ED/AT} \times \text{FAH} \times 1.0\text{E}6$

Where: CPF = Cancer potency factor $(\text{mg/kg-day})^{-1}$

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

Where: C_{air} = concentration in air $(\mu\text{g}/\text{m}^3)$

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

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
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

On-Site MEI Cancer Risk From: BAAQMD Plant # 19514 (Oakland Center 21)- Ground Level Stack
3rd Floor Receptor

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0033	0.04
2	1 - 2	10	0.0033	1.08
14	3 - 16	3	0.0033	1.19
14	17 - 30	1	0.0033	0.13
Total Increased Cancer Risk				2.4

* Third trimester of pregnancy

Off-Site MEI Cancer Risk From: BAAQMD Plant # 19514 (Oakland Center 21)- Ground Level Stack
2nd Floor Level Receptor

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0024	0.03
2	1 - 2	10	0.0024	0.79
14	3 - 16	3	0.0024	0.87
14	17 - 30	1	0.0024	0.10
Total Increased Cancer Risk				1.8

* Third trimester of pregnancy

2044 Franklin St, Oakland, CA - DPM Cancer Risks at Project Site
BAAQMD Plant # 19514 & Project Generator
On-Site MEI Residential Receptors

Cancer Risk Calculation Method

Cancer Risk (per million) = $CPF \times \text{Inhalation Dose} \times ASF \times ED/AT \times FAH \times 1.0E6$

Where: $CPF = \text{Cancer potency factor (mg/kg-day)}^{-1}$

$ASF = \text{Age sensitivity factor for specified age group}$

$ED = \text{Exposure duration (years)}$

$AT = \text{Averaging time for lifetime cancer risk (years)}$

$FAH = \text{Fraction of time spent at home (unitless)}$

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

Where: $C_{\text{air}} = \text{concentration in air (}\mu\text{g/m}^3\text{)}$

$DBR = \text{daily breathing rate (L/kg body weight-day)}$

$A = \text{Inhalation absorption factor}$

$EF = \text{Exposure frequency (days/year)}$

$10^{-6} = \text{Conversion factor}$

Values

Cancer Potency Factors (mg/kg-day)⁻¹

TAC	CPF
DPM	1.10E+00

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - <2	2 - <16	16 - 30
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

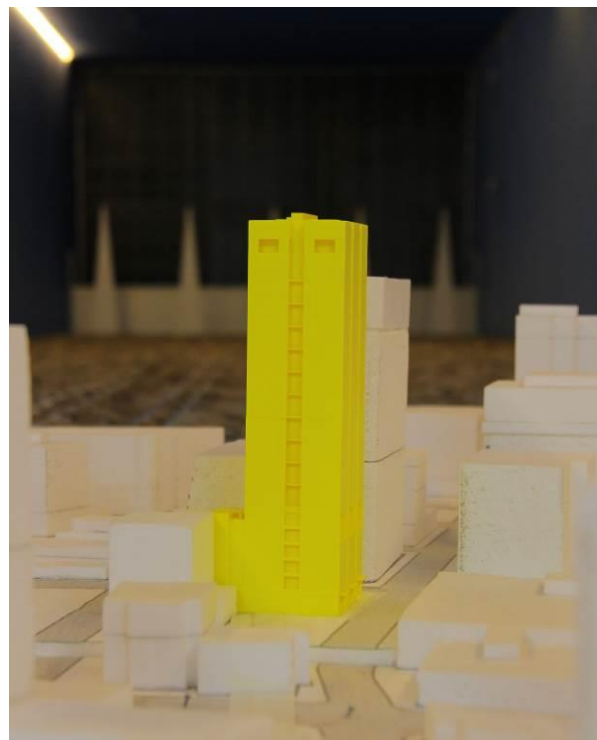
* 95th percentile breathing rates for infants and 80th percentile for children and adults

On-Site MEI Cancer Risk From: BAAQMD Plant # 19514 & Project Generator
3rd Floor Town Home Receptor

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0036	0.05
2	1 - 2	10	0.0036	1.18
14	3 - 16	3	0.0036	1.30
14	17 - 30	1	0.0036	0.14
Total Increased Cancer Risk				2.7

* Third trimester of pregnancy

ATTACHMENT C: 2044 FRANLIN ST. WIND TUNNEL ANALYSIS



PEDESTRIAN WIND ENVIRONMENT STUDY

2044 FRANKLIN STREET, OAKLAND, CA

WD535-01F02(REV1)- WE REPORT

JUNE 21, 2017

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DOCUMENT CONTROL

Date	Revision History	Issued Revision	Prepared By (initials)	Instructed By (initials)	Reviewed & Authorized by (initials)
June 15, 2017	Initial.	0	AZ	TR	TR
June 21, 2017	Incorporating results after design refinement	1	AZ	TR	TR

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EXECUTIVE SUMMARY

This report presents the results of a detailed investigation into the wind environment impact of the development located at 2044 Franklin St, Oakland, CA. Testing was performed using Windtech's boundary layer wind tunnel, which has a 10ft wide working section and has a fetch length of 46ft. Measurements were made at 38 critical study locations in the wind tunnel from 36 wind directions at 10 degree increments using a 1:400 scale model of the development, including the land topography and surrounding buildings for a radius of approximately 1640ft.

Peak gust and mean wind speeds were measured at selected critical outdoor trafficable locations within and around the subject development, as well as nearby blocks and the Kaiser Rooftop Garden. Wind velocity coefficients representing the local wind speeds are derived from the wind tunnel and are combined with a statistical model of the regional wind climate (which accounts for the directional strength and frequency of occurrence of the prevailing regional winds) to provide the equivalent full-scale wind speeds at the site. These wind speed measurements are compared against the CEQA Wind Hazard Threshold. In addition, the 20-percentile Gust-Equivalent Mean (GEM) wind speeds were assessed against established comfort criteria. The existing wind conditions around the site have also been tested to determine the impact of the subject development. A cumulative scenario case has also been tested to account for the inclusion of the various surrounding future developments, and to determine the impact of the subject development and cumulative developments with regards to pedestrian wind comfort and compliance with the CEQA Wind Hazard Threshold.

The model of the development was based on architectural drawings of the proposed building that included impermeable canopies/awnings over Level 1 along Webster Street that extend outward from the face of the building by 6.5ft. The model also included elements indicated in the landscape design drawings that call for large evergreen trees along Webster Street that are expected to be densely foliated and capable of growing to a height of 15ft to 20ft with a 15ft wide canopy. The model of the project including these features was tested in the wind tunnel without the effect of any other forms of wind ameliorating devices, which are not already shown in the architectural drawings. The effect of other forms of vegetation was also excluded from testing, in accordance with current AWES (2001) and ASCE (2012) guidelines.

The results of the study indicate that the wind conditions at each of the 38 study points are below the City of Oakland's CEQA Wind Hazard Threshold.

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APPENDIX A - Directional Results of the Wind Tunnel Test

APPENDIX B - Velocity and Turbulence Intensity Profiles

1 WIND CLIMATE FOR THE OAKLAND REGION

A detailed analysis of recorded directional wind climate data for the region has been undertaken by Windtech Consultants. This data, obtained from the meteorological recording station located at Oakland International Airport, has been acquired over a 44 year period (from 1973 to 2016) from 7am to 6pm, and corrected to be representative of wind speeds in standard open terrain (i.e.: Terrain Exposure C in accordance with ASCE-7-10), and at a height of 33ft above ground.

The corrected data is summarized in Table 1 for the annual recurrence, as well as the 20% probability of exceedance winds, in the form of hourly means and the corresponding 3-second gust values. These directional wind speeds are also presented in Figure 1 (referenced as hourly mean wind speeds). The directional frequency of occurrences of the regional winds is also shown in Figure 1.

As shown in Figure 1, the westerly winds are the most frequently occurring winds for the region, and are also the strongest.

**Table 1: Directional Mean and Gust Wind Speeds for the Oakland Region (mph)
(referenced to Exposure C, 33ft above ground)**

Angle	20% Probability of Exceedance		Annual Recurrence	
	Hourly Mean	3-second Gust	Hourly Mean	3-second Gust
0	3.0	4.6	19.4	29.6
10	3.3	5.1	19.2	29.3
20	2.5	3.9	18.7	28.6
30	2.5	3.8	19.0	29.0
40	2.9	4.4	18.2	27.9
50	3.3	5.1	17.3	26.4
60	4.7	7.2	16.0	24.4
70	4.1	6.2	15.0	22.8
80	4.2	6.5	14.3	21.9
90	3.9	6.0	14.0	21.3
100	3.3	5.1	15.1	23.1
110	3.5	5.4	17.5	26.8
120	6.0	9.1	19.7	30.1
130	8.7	13.3	22.7	34.7
140	10.1	15.4	24.3	37.1
150	10.2	15.5	24.4	37.3
160	8.9	13.6	23.1	35.3

Angle	20% Probability of Exceedance		Annual Recurrence	
	Hourly Mean	3-second Gust	Hourly Mean	3-second Gust
170	6.8	10.4	20.8	31.8
180	5.8	8.9	19.3	29.5
190	5.6	8.6	18.8	28.7
200	5.0	7.6	19.2	29.4
210	6.2	9.5	19.7	30.1
220	6.7	10.2	20.0	30.5
230	9.4	14.4	19.5	29.8
240	10.5	16.0	20.3	30.9
250	12.0	18.4	21.1	32.3
260	13.0	19.8	22.3	34.1
270	13.8	21.0	23.1	35.3
280	13.8	21.0	23.9	36.5
290	13.5	20.7	23.4	35.7
300	12.7	19.5	22.9	34.9
310	12.1	18.5	21.3	32.5
320	10.5	16.0	20.7	31.6
330	8.2	12.5	19.6	29.9
340	5.8	8.9	19.2	29.4
350	4.5	6.9	19.5	29.8

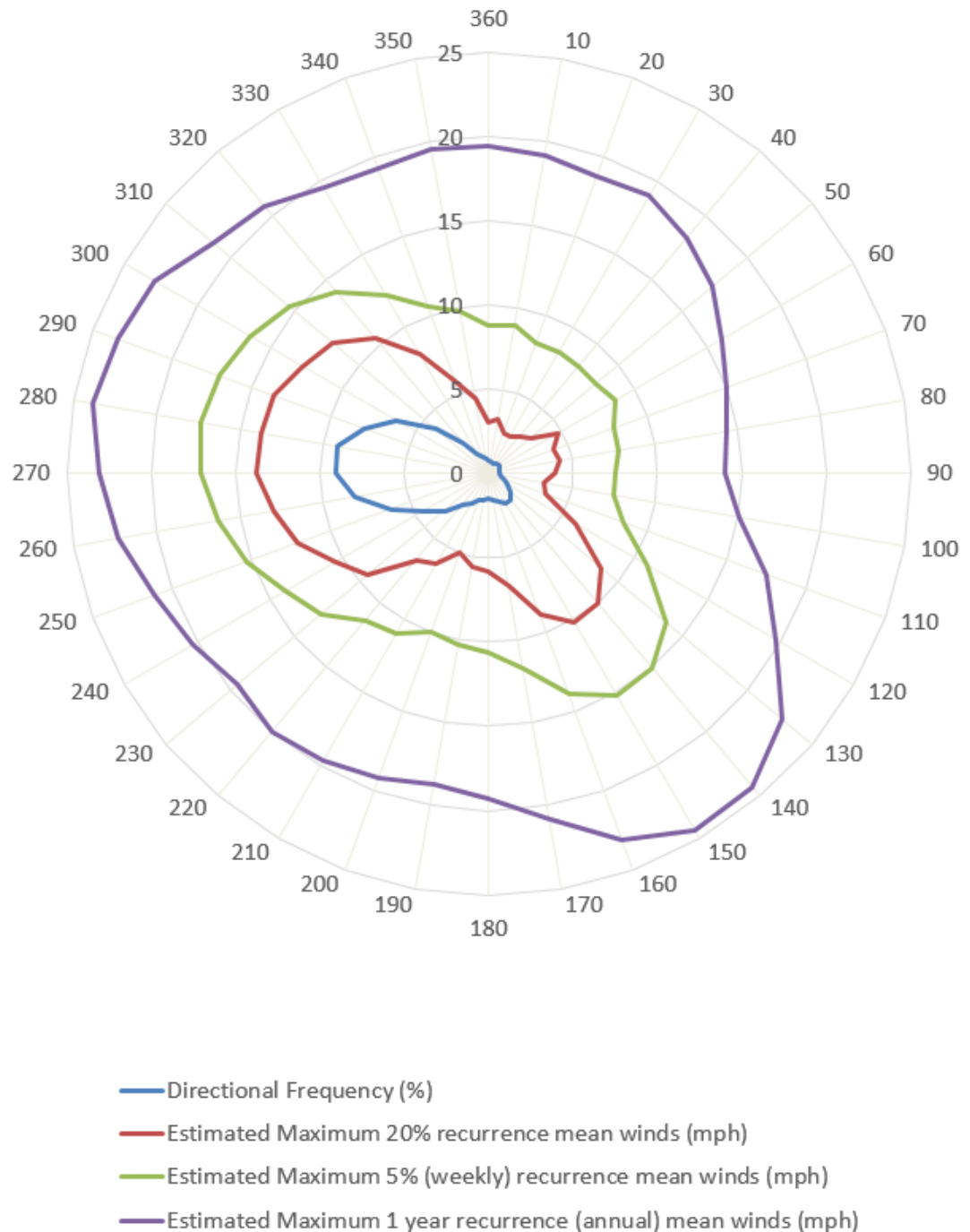


Figure 1: Annual, Weekly, and 20% Probability of Exceedance Recurrence Hourly Mean Wind Speeds, and Frequencies of Occurrence, for the Oakland Region (referenced to Exposure C, 33ft above ground)

2 THE WIND TUNNEL MODEL

Wind tunnel testing was carried out using a 1:400 scale model of the development, including the land topography and surrounding buildings for a radius of approximately 1640ft. The study model was constructed using a Computer Aided Manufacturing (CAM) process to ensure that a high level of detail and accuracy is achieved, and incorporates all necessary architectural features on the façade to ensure an accurate wind flow is achieved around the model.

The model of the development was based on architectural drawings of the proposed building that included impermeable canopies/awnings over Level 1 along Webster Street that extend outward from the face of the building by 6.5ft. The model also included elements indicated in the landscape design drawings that call for large evergreen trees along Webster Street that are expected to be densely foliated and capable of growing to a height of 15ft to 20ft with a 15ft wide canopy. The model of the project including these features was tested in the wind tunnel without the effect of any other forms of wind ameliorating devices, which are not already shown in the architectural drawings. The effect of other forms of vegetation was also excluded from testing, in accordance with current AWES (2001) and ASCE (2012) guidelines.

A total of three surrounds configurations were tested in the wind tunnel. This allowed for a quantitative assessment of the subject development onto the wind conditions affecting the surrounding region, as well as the determination of any undesirable wind effects that may arise from the emerging cumulative scheme (ie: the addition of future proposed developments to the surrounding area). The configurations tested include:

- Surrounds case 1: Existing site conditions without the development.
- Surrounds case 2: With the development and existing surrounds.
- Surrounds case 3: With the development and cumulative surrounds.

Photographs of the wind tunnel model in its various configurations are presented in Figures 2a to 2n on the following pages. Figure 2o displays a surrounds map for the cumulative scenario to identify the buildings included in that particular study case.

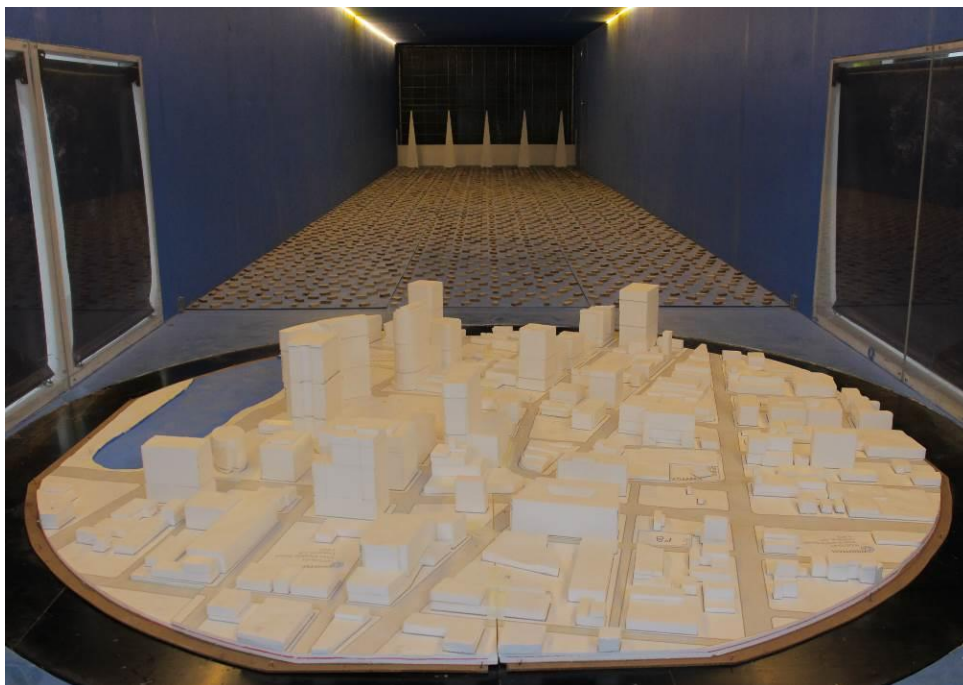


Figure 2a: Photograph of the Wind Tunnel Model (view from the north)
Surrounds Case 1: Existing site conditions without the development



Figure 2b: Photograph of the Wind Tunnel Model (view from the east)
Surrounds Case 1: Existing site conditions without the development

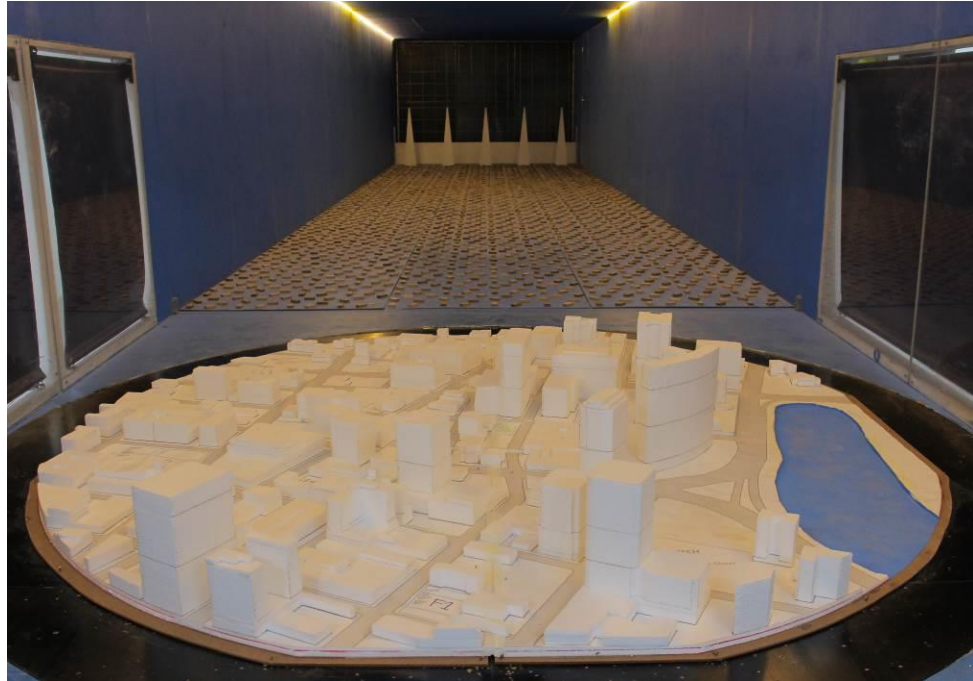


Figure 2c: Photograph of the Wind Tunnel Model (view from the south)
Surrounds Case 1: Existing site conditions without the development

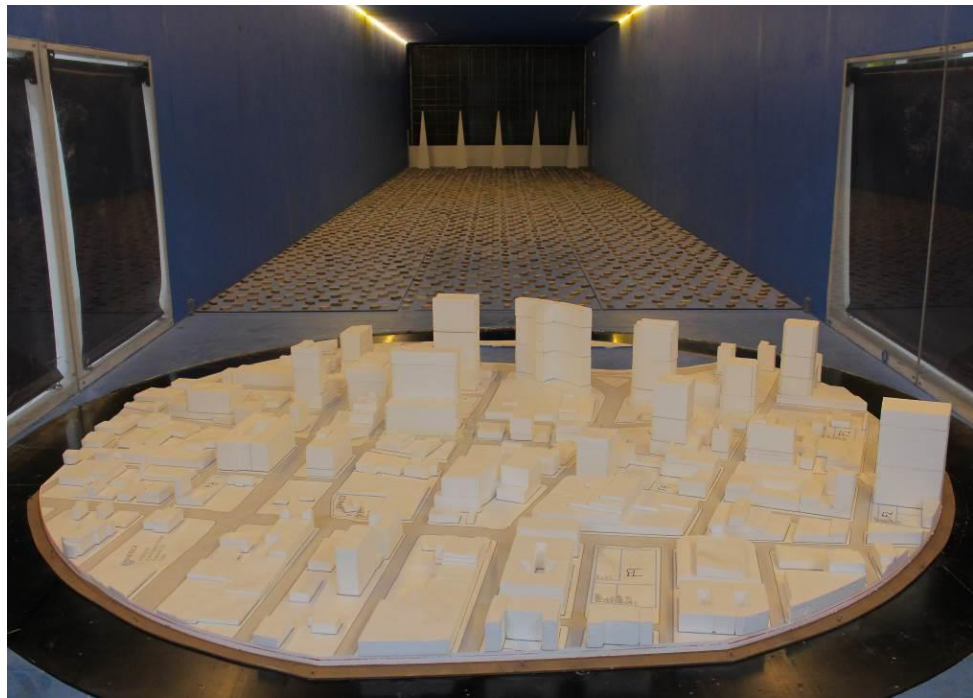


Figure 2d: Photograph of the Wind Tunnel Model (view from the west)
Surrounds Case 1: Existing site conditions without the development



Figure 2e: Photograph of the Wind Tunnel Model (view from the east)
Surrounds Case 1: Existing site conditions without the development



Figure 2f: Photograph of the Wind Tunnel Model (view from the north)
Surrounds Case 2: With the development and existing surrounds

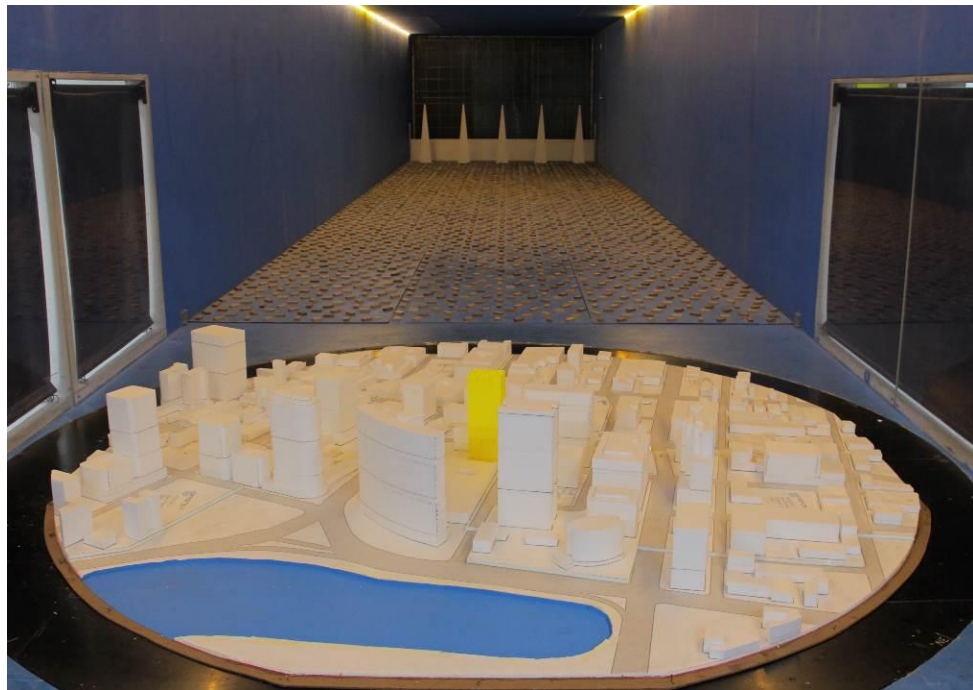


Figure 2g: Photograph of the Wind Tunnel Model (view from the east)
Surrounds Case 2: With the development and existing surrounds

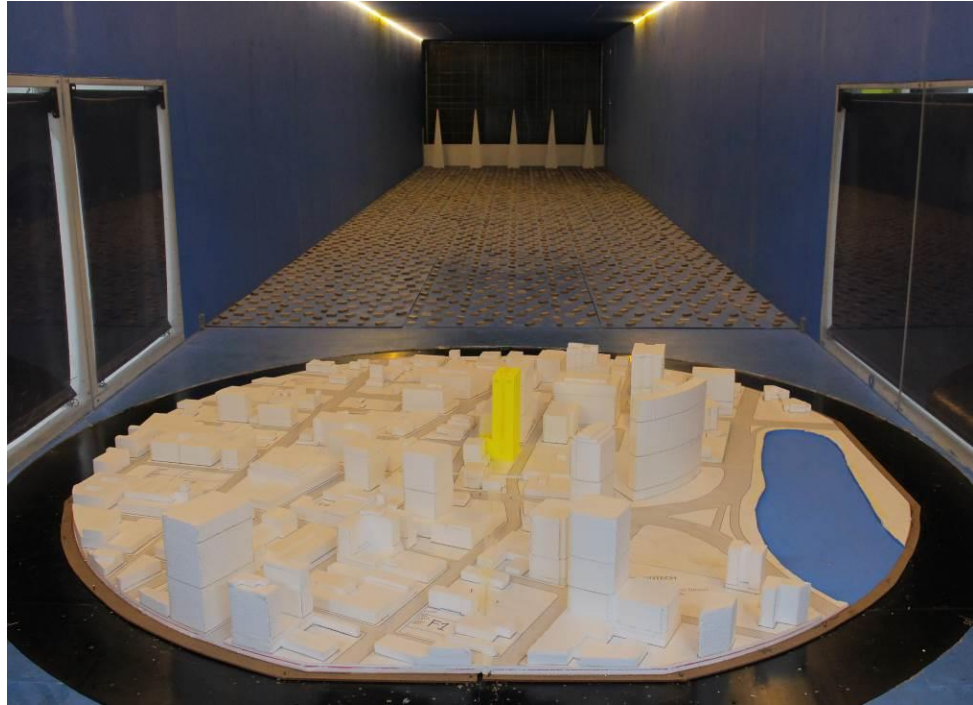


Figure 2h: Photograph of the Wind Tunnel Model (view from the south)
Surrounds Case 2: With the development and existing surrounds

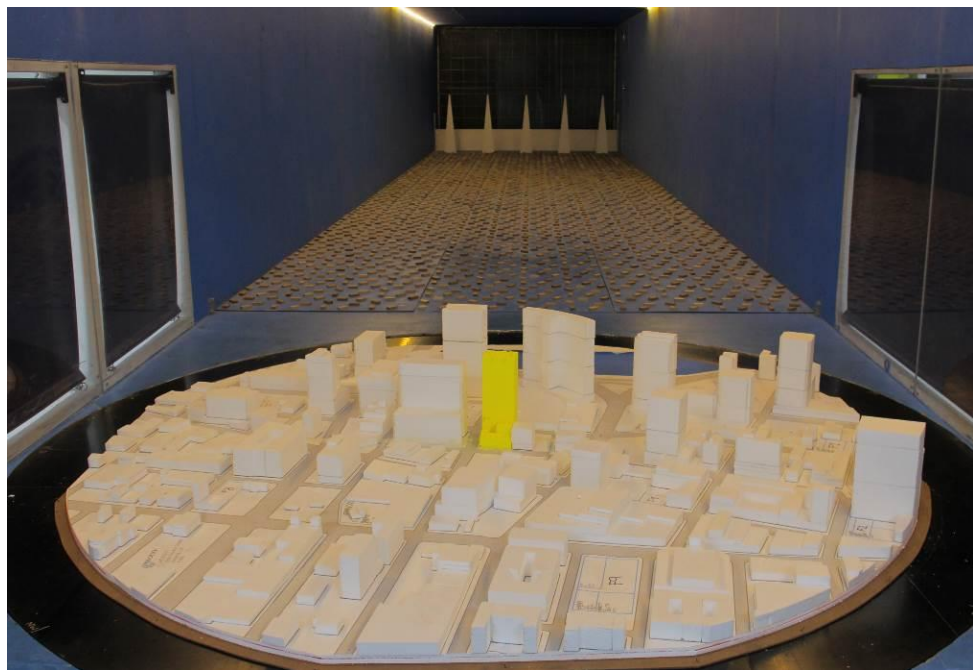
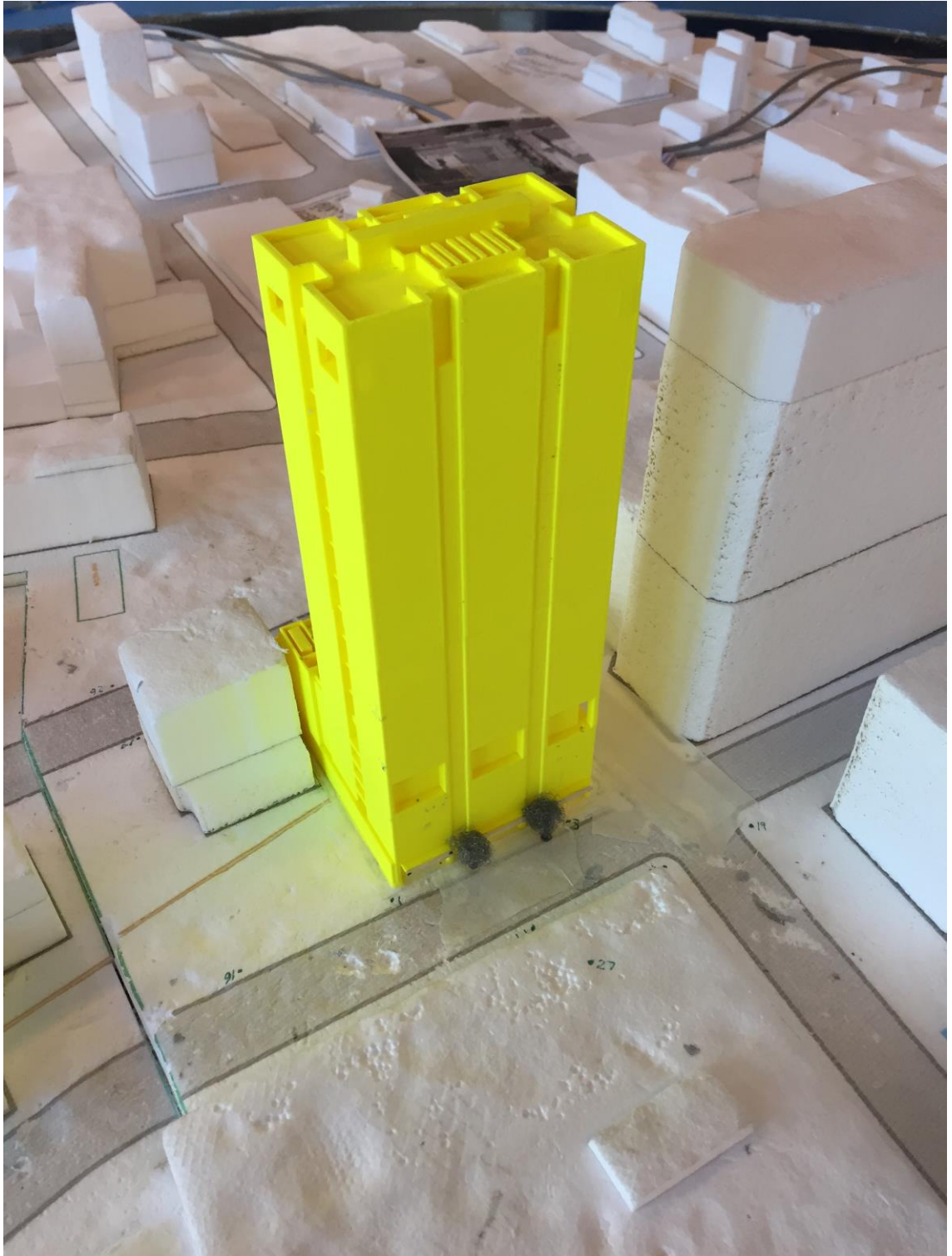


Figure 2i: Photograph of the Wind Tunnel Model (view from the west)
Surrounds Case 2: With the development and existing surrounds



**Figure 2j: Photograph of the Wind Tunnel Model (view from the south-east)
Surrounds Case 2: With the development and existing surrounds**

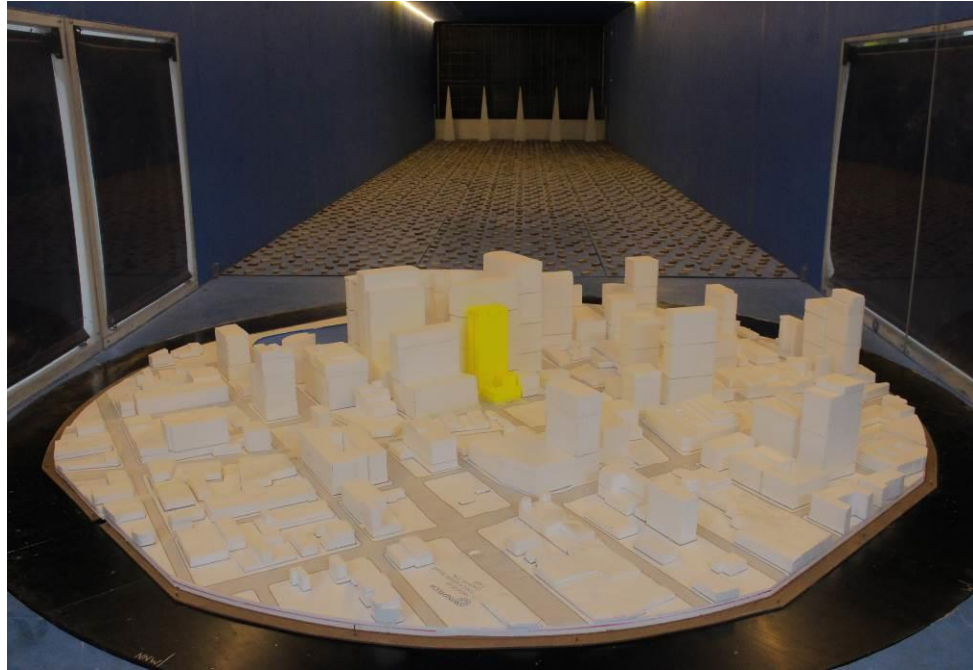


Figure 2k: Photograph of the Wind Tunnel Model (view from the north-west)
Surrounds Case 3: With the development and cumulative surrounds



Figure 2l: Photograph of the Wind Tunnel Model (view from the east)
Surrounds Case 3: With the development and cumulative surrounds

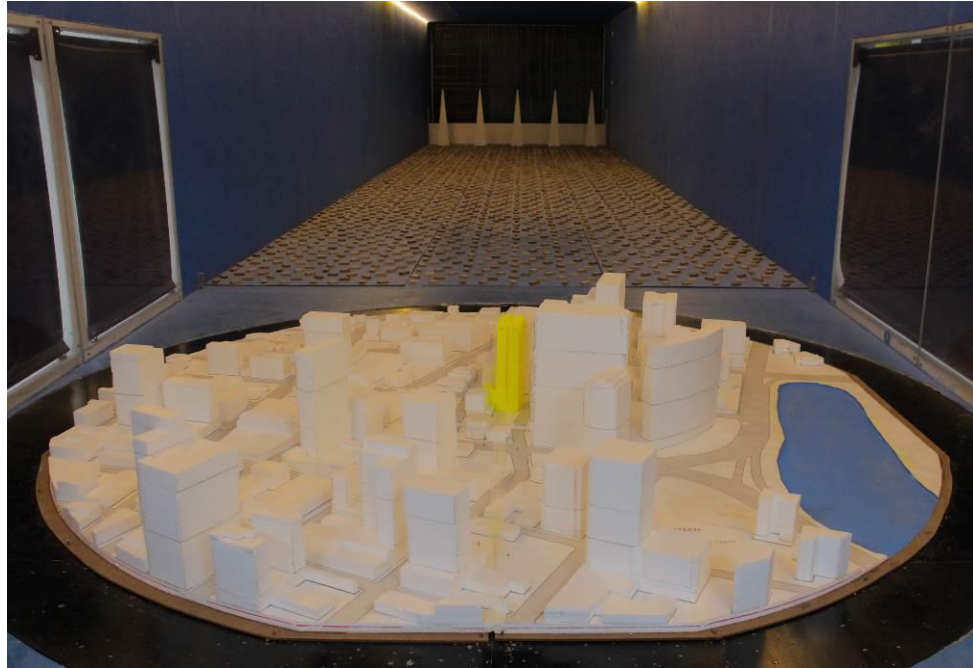


Figure 2m: Photograph of the Wind Tunnel Model (view from the south)
Surrounds Case 3: With the development and cumulative surrounds

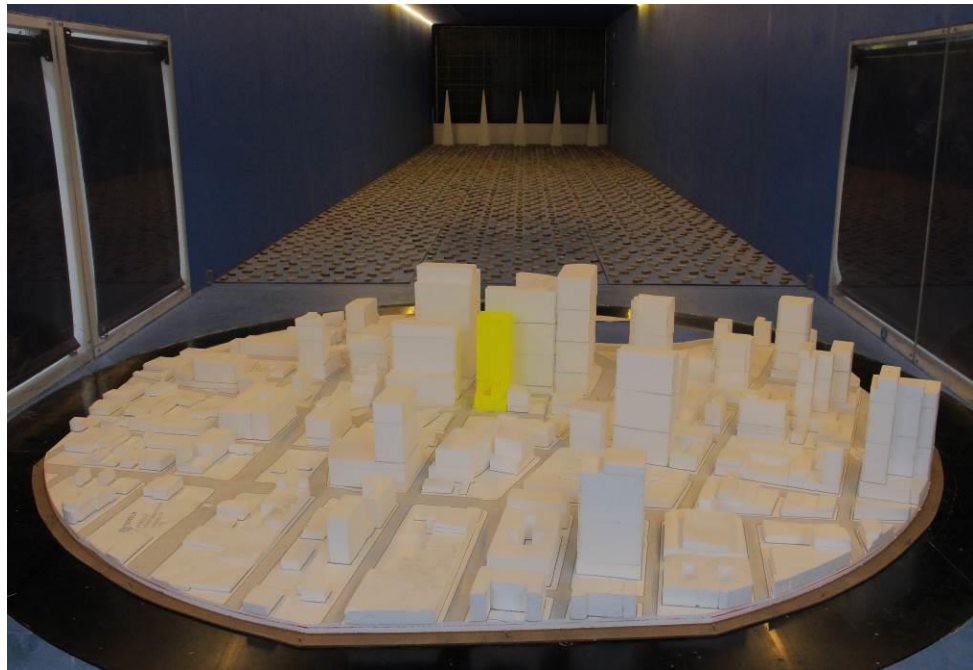


Figure 2n: Photograph of the Wind Tunnel Model (view from the west)
Surrounds Case 3: With the development and cumulative surrounds



KEY

1. 1700 Webster: 25 story building with a total height of 263ft.
2. 1640 Broadway (449 17th St): 33 story building with a total height of 380ft.
- 3-1. Webster and 21st: 34 story building on top of Kaiser centre rooftop garden with a total height of 423ft.
- 3-2. Webster and 20th: 42 story building with a total height of 482ft.
4. 1900 Broadway: 33 story building with a total height of 380ft.
5. 2 Kaiser Plaza: 34 story building with a total height of 470ft.
6. 1721 Webster: 25 story building with a total height of 288ft.
7. 2100 Telegraph: Total building height of 288ft.
8. Corner of Valley St and 23rd St: Total building height of 68ft.
- 9-1. 1911 Telegraph: Total building height of 187ft.
- 9-2. 1911 Telegraph: Total building height of 308ft.

Figure 2o: Surrounds Case 3 map – With the development and cumulative surrounds

3 BOUNDARY LAYER WIND FLOW MODEL

Testing was performed using Windtech's boundary layer wind tunnel, which has a 10ft wide working section and has a fetch length of 46ft. The model was placed in the appropriate boundary layer wind flow for each of the prevailing wind directions for the wind tunnel testing. The type of wind flow used in a wind tunnel study is determined by a detailed analysis of the surrounding terrain types around the subject site.

The roughness of the earth's surface has the effect of slowing down the prevailing wind near the ground. This effect is observed up to what is known as the *boundary layer height*, which can range between approximately 1,600ft to 10,000ft above the earth's surface depending on the roughness of the surface (i.e.: oceans, open farmland, dense urban cities, etc.). Within this range the prevailing wind forms what is known as a *boundary layer wind profile*.

Various wind codes and standards classify various types of boundary layer wind flows depending on the surface roughness. However, it should be noted that the wind profile does not change instantly due to changes in the terrain roughness. It can take many miles (at least 60 miles) of a constant surface roughness for the boundary layer profile to achieve a state of equilibrium. Descriptions of the standard boundary layer profiles for various terrain types are summarized as follows (in accordance with ASCE-7-10):

- **Exposure D:** Extremely flat terrain. Examples include oceans and other water bodies such as lakes, dams, rivers, etc.
- **Exposure C:** Open terrain. Examples include grassy fields and plains, and open farmland (without buildings or trees).
- **Exposure B:** Suburban and forest terrain. Examples include suburban areas of towns, and areas with dense vegetation such as forests.

For this study, the shape of the boundary layer wind flows over the standard ASCE-7-10 terrain types is defined in accordance with Deaves & Harris (1978). These are summarized in Table 2. The modelled upstream terrain profile is based on the best fit at approximately half the height of the development.

Table 2: Terrain and Height Multipliers, Turbulence Intensities, and Corresponding Roughness Lengths, for the Standard ASCE-7-10 Boundary Layer Profiles (at the study reference height)

Exposure Category	Terrain & Height Multipliers			Turbulence Intensity I_v	Roughness Length (ft) $z_{0,r}$
	$k_{tr,T=3600s}$ (hourly)	$k_{tr,T=600s}$ (10-minute)	$k_{tr,T=3s}$ (3-second)		
Exposure D	0.96	0.99	1.28	0.112	0.01
Exposure C	0.84	0.88	1.21	0.147	0.1
Exposure B	0.69	0.73	1.12	0.208	1

An analysis of the effect of changes in the upwind terrain roughness was carried out for each of the wind directions studied. This has been undertaken using the method given in ESDU-82026:2002 and ESDU-83045:2002. Aerial images showing the surrounding terrain are presented in Figures 3a and 3b for ranges of 3.1 miles and 31 miles from the edge of the proximity model used for the wind tunnel study, respectively. The modelled upstream terrain profile is based on the best fit at approximately half the height of the development. The resulting 3-second gust, 10-minute mean and hourly mean terrain and height multipliers at the site location are presented in Table 3, referenced to the study reference height.

For each of the 36 wind directions tested in this study, the approaching boundary layer wind profiles modelled in the wind tunnel matched the model scale and the overall surrounding terrain characteristics beyond the extent of the proximity model. Plots of the boundary layer wind profiles used in the wind tunnel are presented in Appendix B.

**Table 3: Terrain and Height Multipliers for Each Directional Sector
(at the study reference height)**

Wind Sector (degrees)	$k_{tr,T=3600s}$ (hourly mean)	$k_{tr,T=600s}$ (10-minute mean)	$k_{tr,T=3s}$ (3-second gust)
0	0.67	0.71	1.11
30	0.70	0.75	1.13
60	0.68	0.73	1.12
90	0.71	0.75	1.13
120	0.76	0.79	1.13
150	0.75	0.79	1.13
180	0.68	0.73	1.11
210	0.71	0.76	1.14
240	0.70	0.75	1.13
270	0.76	0.81	1.18
300	0.74	0.79	1.15
330	0.68	0.72	1.10

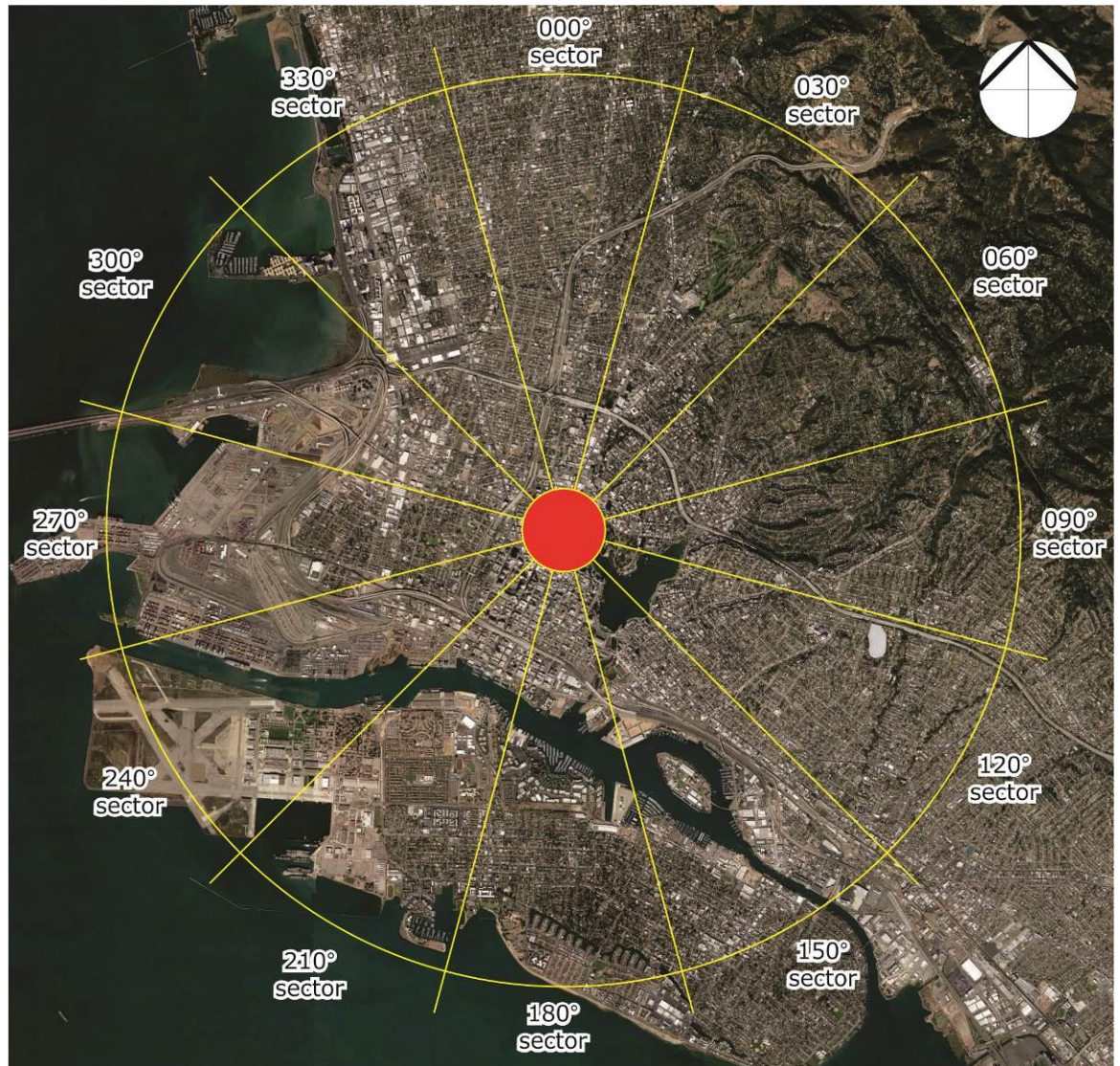


Figure 3a: Aerial Image of the Surrounding Terrain
(radius of 3.1 miles from the edge of the proximity model, which is colored red)



Figure 3b: Aerial Image of the Surrounding Terrain (radius of 31 miles)

4 ENVIRONMENTAL WIND SPEED CRITERIA

For this study, the measured wind conditions for the various critical outdoor trafficable areas within and around the subject development are compared against two sets of criteria. The criteria for wind comfort is based on a Gust-Equivalent Mean (GEM) which must not have more than an exceedance of 1 hour per year (20% probability of exceedance) including only daylight hours, from all directions combined. Note that the Gust-Equivalent Mean (GEM) criteria has proven over time, and through field observations, to be the most reliable indicator of pedestrian comfort (Rofail, 2007). The other criterion used for this study is based on the CEQA Wind Hazard Threshold, which the City of Oakland considers to be a significant wind hazard. The City of Oakland, based on an Equivalent Wind Speed (EWS), considers a significant wind hazard to occur if a development/project were to "Create winds that exceed 36 mph for more than one hour during daylight hours during the year". Equivalent Wind Speeds (EWS) have been calculated in accordance to the City of Oakland Significant Wind Impact Criterion, based on the following relationship:

$$EWS = V_m \times (2 \times TI + 0.7) \quad (4.1)$$

Definitions of the terms above are described as follows:

EWS Equivalent wind speed

TI Turbulence intensity

V_m Mean pedestrian-level wind speed

The criteria applied for this analysis is based on a range of pedestrian comfort criteria, and the CEQA Wind Hazard Threshold, described as follows:

- **Long Exposure:** less than 7mph GEM wind speeds for at least 80% of the time.
- **Short Exposure:** less than 9mph GEM wind speeds for at least 80% of the time.
- **Comfortable Walking:** less than 11mph GEM wind speeds for at least 80% of the time.
- **CEQA Wind Hazard Threshold:** Equivalent wind speeds must not exceed 36mph for more than one hour during daylight hours during the year.
- **Existing Site Conditions:** Where relevant, if the existing site conditions exceed the abovementioned wind comfort criterion, then the target wind speed for that area with the inclusion of the subject development is to at least match the existing site conditions and the CEQA Wind Hazard Threshold.

The results of the wind tunnel study are summarized in the following section, and presented in the form of directional plots attached in Appendix A of this report. Each study point has 2 plots, one for the criteria of maximum GEM wind speeds (which are representative of a 20% probability of exceedance wind speed), and the other presents the Equivalent Wind Speed with a comparison to the CEQA Wind Hazard Threshold.

Notes:

- The GEM is defined as the maximum of the mean wind speed and the gust wind speed divided by a gust factor of 1.85.
- The gust wind speed is defined as 3.0 standard deviations from the mean.
- Long Exposure applies typically to outdoor dining areas in restaurants, amphitheaters, etc.
- Short Exposure applies typically to areas where short duration stationary activities are involved (less than 1 hour). This includes window shopping, waiting areas, etc.
- Comfortable Walking applies typically to areas used mainly for pedestrian thoroughfares. This also includes private swimming pools, balconies, terraces and communal areas.
- Fast walking applies typically to car parks, laneways, infrequently used public pedestrian thoroughfares and parks, etc.
- In all areas, the wind conditions are also checked against the CEQA Wind Hazard Threshold.

5 TEST PROCEDURE AND METHODOLOGY

5.1 Measurement of the Velocity Coefficients

Testing was performed using Windtech's boundary layer wind tunnel facility, which has a 10ft wide working section and has a fetch length of 46ft. The test procedures followed for the wind tunnel testing performed for this study generally adhere to the guidelines set out in ASCE-7-10 (Chapter C31), the Australasian Wind Engineering Society Quality Assurance Manual (AWES-QAM-1-2001), and CTBUH (2013) guidelines.

The model of the subject development was setup within the wind tunnel, and the wind velocity measurements were monitored using Dantec hot-wire probe anemometers at selected critical outdoor locations at a full-scale height of approximately 5ft above ground/slab level. The probe support for each study location was mounted such that the probe wire was vertical as much as possible, which ensures that the measured wind speeds are independent of wind direction along the horizontal plane. In addition, care was taken in the alignment of the probe wire and in avoiding wall-heating effects. Wind speed measurements are made in the wind tunnel for 36 wind directions, at 10° increments. The output from the hot-wire probes was obtained using a National Instruments 12-bit data acquisition card. A sample rate of 1,024Hz was used, which is more than adequate for the given frequency band. The signal was low pass filtered at 32Hz, which results in the peak gust being the equivalent of a 2 to 3 second gust (which is what the criteria for pedestrian comfort and the CEQA Wind Hazard Threshold are based upon).

The mean and the maximum 3-second duration peak gust velocity coefficients are derived from the wind tunnel test by the following relation:

$$\hat{C}_V = \bar{C}_V + g \cdot \sigma_V \quad (5.1)$$

where: \hat{C}_V is the 3-second gust velocity coefficient.

\bar{C}_V is the mean velocity coefficient.

g is the gust factor, which is taken to be 3.0.

σ_V is the standard deviation of the velocity measurement.

The mean free-stream wind speed measured in the wind tunnel for this study was approximately 20mph. The measurement location for the mean free-stream wind speed is at a height of 650ft at the upwind edge of the proximity model. A sample length of 10 seconds was used for each wind direction tested, which is equivalent to a minimum sample time of approximately 37 minutes in full-scale for the annual maximum gust wind speeds, which is suitable for this type of study.

5.2 Calculation of the Full-Scale Results

To determine if the wind conditions at each study point location will satisfy the relevant criteria for pedestrian comfort and the CEQA Wind Hazard Threshold, the measured velocity coefficients need to be combined with information about the local wind climate. The aim of combining the wind tunnel measurements with wind climate information is to determine the probability of exceedance of a given wind speed at the site. The local wind climate is normally described using a statistical model, which relates wind speed to a probability of exceedance. Details of the wind climate model used in this study are outlined in Section 1.

A feature of this process is to include the impact of wind directionality, which includes any local variations in wind speed or frequency with wind direction. This is important as the wind directions which produce the highest wind speed events for a region may not coincide with the most wind exposed direction at the site.

The methodology adopted for the derivation of the full-scale results for the maximum GEM wind speeds and the Equivalent wind speeds (EWS) are outlined in the following sub-sections.

5.2.1 Equivalent Wind Speeds

The full-scale Equivalent wind speed at each study point location is derived from the measured velocity coefficient using the following relationship:

$$V_{study} = V_{ref,RH} \left(\frac{k_{650ft,tr,T=3600s}}{k_{RH,tr,T=3600s}} \right) C_v \quad (5.2)$$

V_{study} is the full-scale wind velocity at the study point location, in mph.

$V_{ref,RH}$ is the full-scale reference wind speed at the upwind edge of the proximity model at the study reference height. This value is determined by combining the directional wind speed data for the region (detailed in Section 1) and the upwind terrain and height multipliers for the site (detailed in Section 3).

$k_{650ft,tr,T=3600s}$ is the hourly mean terrain and height multiplier at 650ft for the standard terrain category setup used in the wind tunnel tests.

$k_{RH,tr,T=3600s}$ is the hourly mean terrain and height multiplier at the study reference height (see Table 2).

C_v is the velocity coefficient measurement obtained from the hot-wire anemometer, which is derived from the following relationship:

$$C_v = \frac{C_{v,study}}{C_{v,650ft}} \quad (5.3)$$

$C_{v,study}$ is the velocity coefficient measurement obtained from the hot-wire anemometer at the study point location.

$C_{v,650ft}$ is the measurement obtained from the hot-wire anemometer at the free-stream reference location at 650ft height upwind of the model in the wind tunnel.

The value of $V_{ref,RH}$ varies with each prevailing wind direction. Wind directions where there is a high probability that a strong wind will occur will have a higher directional wind speed than other directions. To determine the directional wind speeds, a probability level must be assigned for each wind direction. These probability levels are set following the approach used in AS/NZS1170.2:2011, which assumes that the major contributions to the combined probability of exceedance of a typical load effect comes from only two 45 degree sectors.

5.2.2 Maximum Gust-Equivalent Mean Wind Speeds

Conversion to the corresponding full-scale GEM wind speed from the wind tunnel wind speed coefficients follows the same relationships outlined in Section 5.2.1.

The contribution to the probability of exceedance of a specified wind speed (ie: the desired wind speed for pedestrian comfort, as per the criteria) is calculated for each wind direction. These contributions are then combined over all wind directions to calculate the total probability of exceedance of the specified wind speed. To calculate the probability of exceedance for a specified wind speed a statistical wind climate model was used to describe the relationship between directional wind speeds and the probability of exceedance. A detailed description of the methodology is given by T.V. Lawson (1980).

The criteria used in this study, is referenced to a probability of exceedance of 20% of a specified wind speed based on an exceedance of 1 hour per year including only daylight hours.

5.3 Layout of Study Points

For this study a total of 38 study point locations have been selected for analysis. This includes the following:

- 29 study points along the outdoor trafficable areas on the Ground level public and private spaces, including the Kaiser Rooftop Garden.
- 9 study points on the balconies and podium rooftop terraces on Level 4 to Level 6.

The locations of the various study points tested are presented in Figures 5a to 5d in the form of marked-up plan drawings. The appropriate wind speed criteria for the outdoor trafficable areas are also presented in these figures.

It should be noted that only the most critical outdoor locations of the development have been selected for analysis.

Target Criteria

Comfort Criterion of 11mph (GEM) for comfortable walking, based on an exceedance of 1 hour per year including only daylight hours.

City of Oakland Significant Wind Impact Criterion of 36mph (Equivalent Wind Speed) for safety, based on an exceedance of 1 hour per year including only daylight hours.

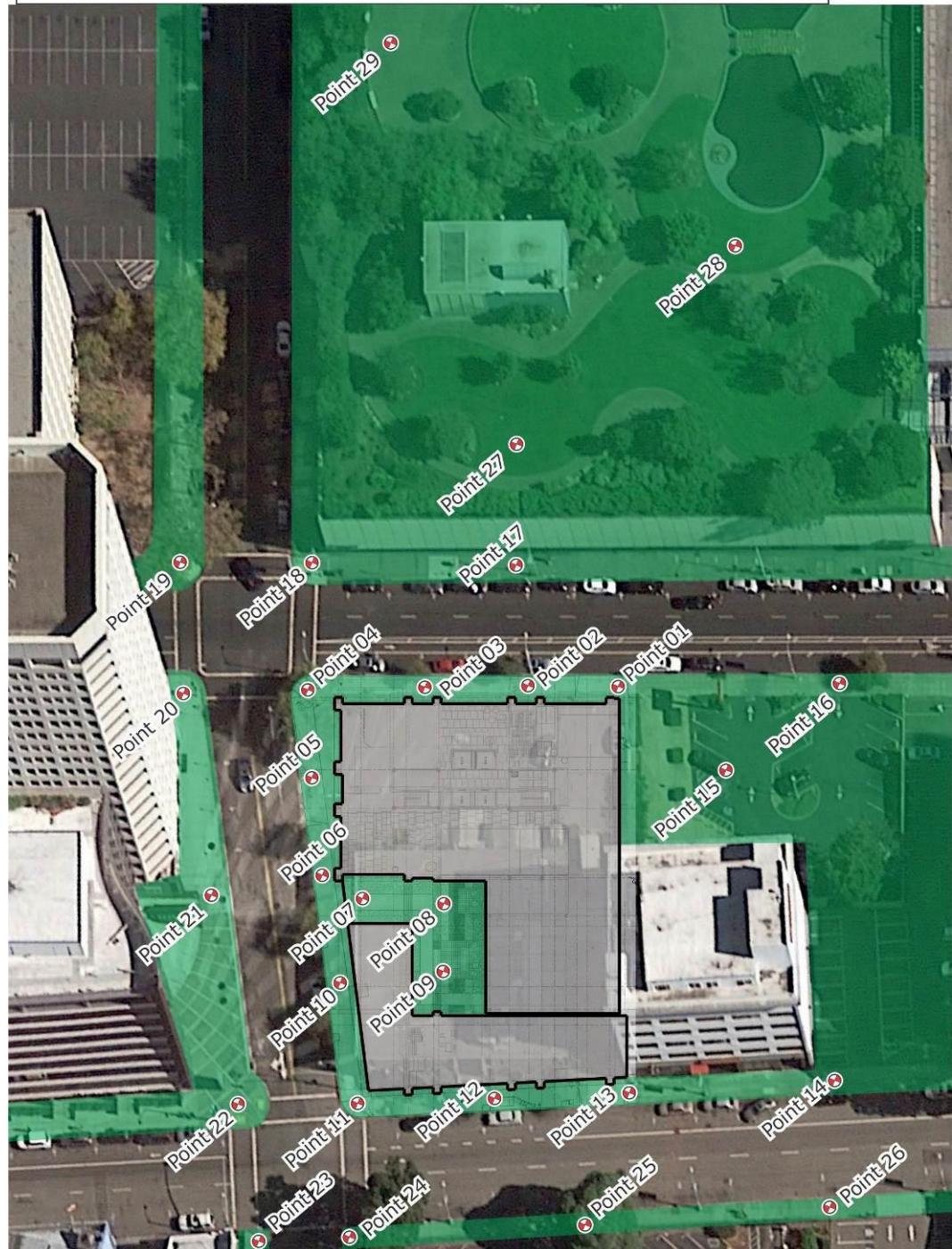
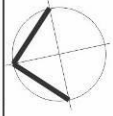


Figure 5a: Study Point Locations and Target Wind Speed Criteria – Level 01 and Kaiser Rooftop Garden

Target Criteria

Comfort Criterion of 11mph (GEM) for comfortable walking, based on an exceedance of 1 hour per year including only daylight hours.

City of Oakland Significant Wind Impact Criterion of 36mph (Equivalent Wind Speed) for safety, based on an exceedance of 1 hour per year including only daylight hours.

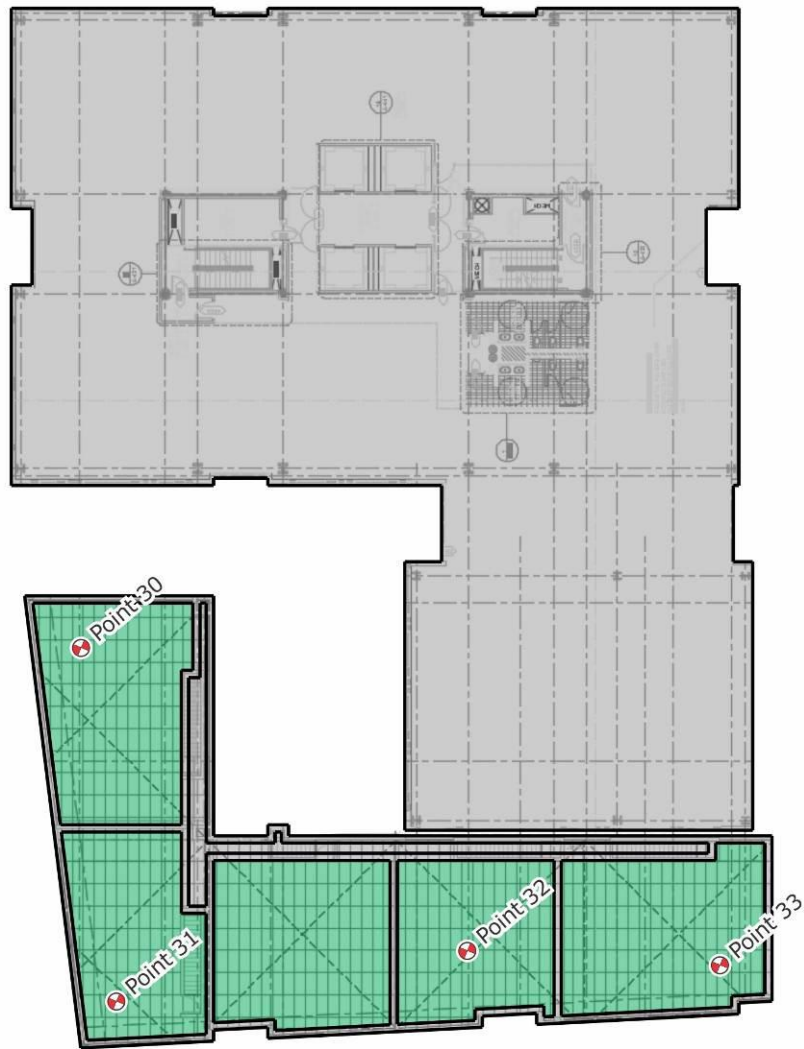


Figure 5b: Study Point Locations and Target Wind Speed Criteria – Level 04

Target Criteria

Comfort Criterion of 11mph (GEM) for comfortable walking, based on an exceedance of 1 hour per year including only daylight hours.

City of Oakland Significant Wind Impact Criterion of 36mph (Equivalent Wind Speed) for safety, based on an exceedance of 1 hour per year including only daylight hours.

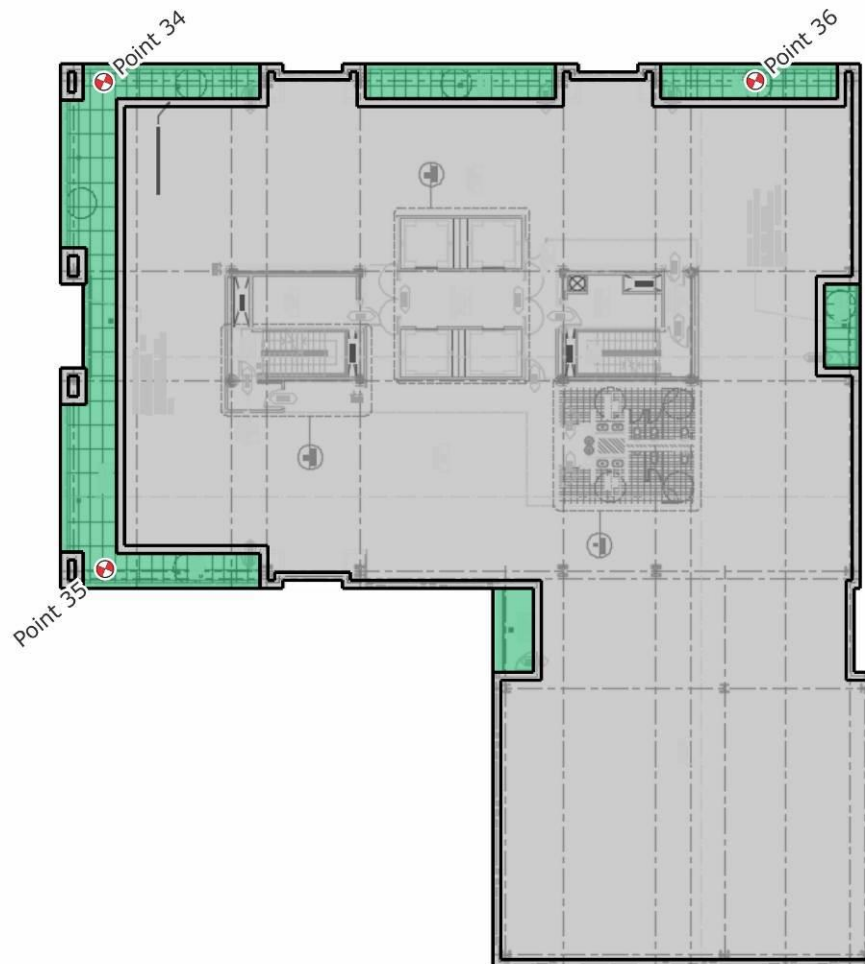


Figure 5c: Study Point Locations and Target Wind Speed Criteria – Level 05

Target Criteria

Comfort Criterion of 11mph (GEM) for comfortable walking, based on an exceedance of 1 hour per year including only daylight hours.

City of Oakland Significant Wind Impact Criterion of 36mph (Equivalent Wind Speed) for safety, based on an exceedance of 1 hour per year including only daylight hours.

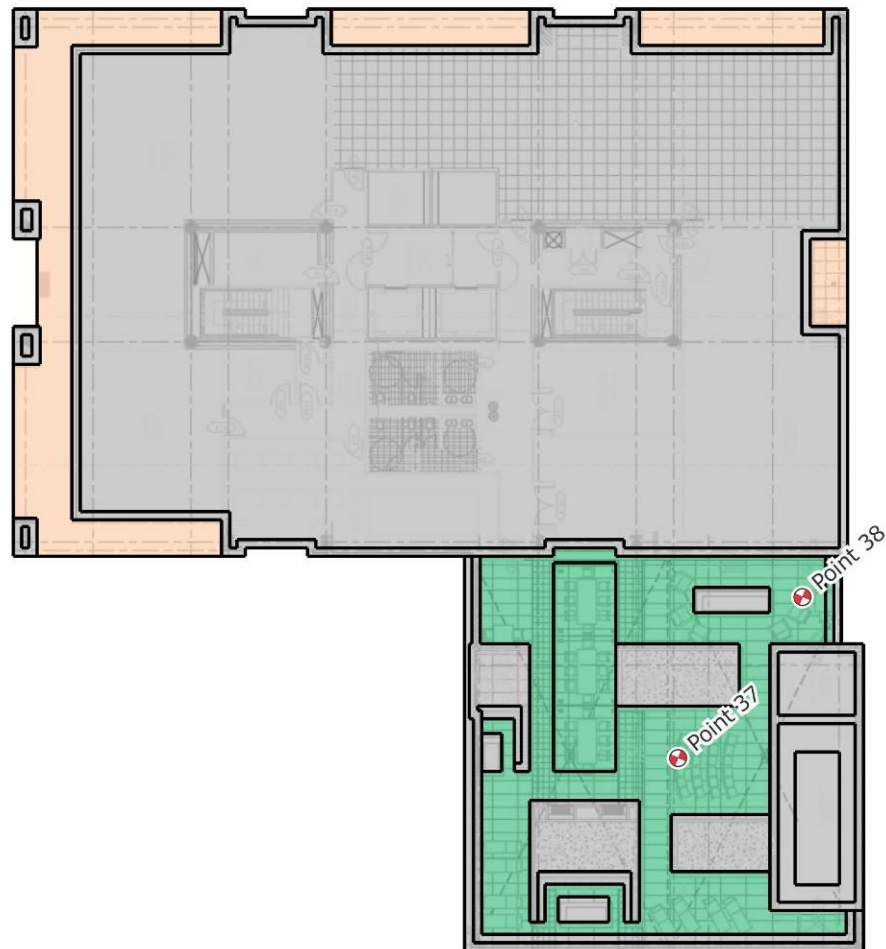


Figure 5d: Study Point Locations and Target Wind Speed Criteria – Level 06

6 RESULTS AND DISCUSSION

6.1 Results

The results for the wind conditions at each of the study point locations are presented in the form of directional plots in Appendix A, and are summarized in Tables 9, 10 and 11 below, and in Figures 6a to 6i. The wind speed criteria that the wind conditions should achieve are also listed in Tables 9, 10 and 11 for each study point location, as well as in Figures 5a to 5d.

Table 9: Wind Tunnel Results Summary
(Surrounds case 1: Existing site conditions without the development)

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold
	20% Exceedance GEM	CEQA Threshold		
Point 01	11.0	36.0	YES	YES
Point 02	11.0	36.0	YES	YES
Point 03	11.0	36.0	YES	YES
Point 04	11.0	36.0	NO	YES
Point 05	11.0	36.0	NO	YES
Point 06	11.0	36.0	NO	YES
Point 10	11.0	36.0	YES	YES
Point 11	11.0	36.0	NO	YES
Point 12	11.0	36.0	YES	YES
Point 13	11.0	36.0	YES	YES
Point 14	11.0	36.0	NO	YES
Point 15	11.0	36.0	YES	YES
Point 16	11.0	36.0	YES	YES
Point 17	11.0	36.0	YES	YES
Point 18	11.0	36.0	YES	YES
Point 19	11.0	36.0	NO	YES
Point 20	11.0	36.0	NO	YES
Point 21	11.0	36.0	YES	YES
Point 22	11.0	36.0	YES	NO
Point 23	11.0	36.0	YES	YES
Point 24	11.0	36.0	NO	YES
Point 25	11.0	36.0	YES	YES
Point 26	11.0	36.0	NO	YES
Point 27	11.0	36.0	NO	YES

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold
	20% Exceedance GEM	CEQA Threshold		
Point 28	11.0	36.0	YES	YES
Point 29	11.0	36.0	YES	YES

**Table 10: Wind Tunnel Results Summary
(Surrounds case 2: With the development and existing surrounds)**

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 01	11.0	36.0	NO	YES	-
Point 02	11.0	36.0	YES	YES	-
Point 03	11.0	36.0	YES	YES	-
Point 04	11.0	36.0	NO	YES	Equivalent to Existing site conditions
Point 05	11.0	36.0	YES	YES	-
Point 06	11.0	36.0	NO	YES	Better than Existing site conditions
Point 07	11.0	36.0	YES	YES	-
Point 08	11.0	36.0	YES	YES	-
Point 09	11.0	36.0	YES	YES	-
Point 10	11.0	36.0	YES	YES	-
Point 11	11.0	36.0	YES	YES	-
Point 12	11.0	36.0	YES	YES	-
Point 13	11.0	36.0	YES	YES	-
Point 14	11.0	36.0	NO	YES	Equivalent to Existing site conditions
Point 15	11.0	36.0	NO	YES	-
Point 16	11.0	36.0	NO	YES	-
Point 17	11.0	36.0	NO	YES	-
Point 18	11.0	36.0	YES	YES	-
Point 19	11.0	36.0	NO	YES	-
Point 20	11.0	36.0	NO	YES	-
Point 21	11.0	36.0	YES	YES	-
Point 22	11.0	36.0	YES	YES	-
Point 23	11.0	36.0	YES	YES	-
Point 24	11.0	36.0	YES	YES	-
Point 25	11.0	36.0	YES	YES	-

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 26	11.0	36.0	-	YES	-
Point 27	11.0	36.0	NO	YES	-
Point 28	11.0	36.0	YES	YES	-
Point 29	11.0	36.0	YES	YES	-
Point 30	11.0	36.0	YES	YES	-
Point 31	11.0	36.0	YES	YES	-
Point 32	11.0	36.0	YES	YES	-
Point 33	11.0	36.0	YES	YES	-
Point 34	11.0	36.0	YES	YES	-
Point 35	11.0	36.0	YES	YES	-
Point 36	11.0	36.0	YES	YES	-
Point 37	11.0	36.0	YES	YES	-
Point 38	11.0	36.0	YES	YES	-

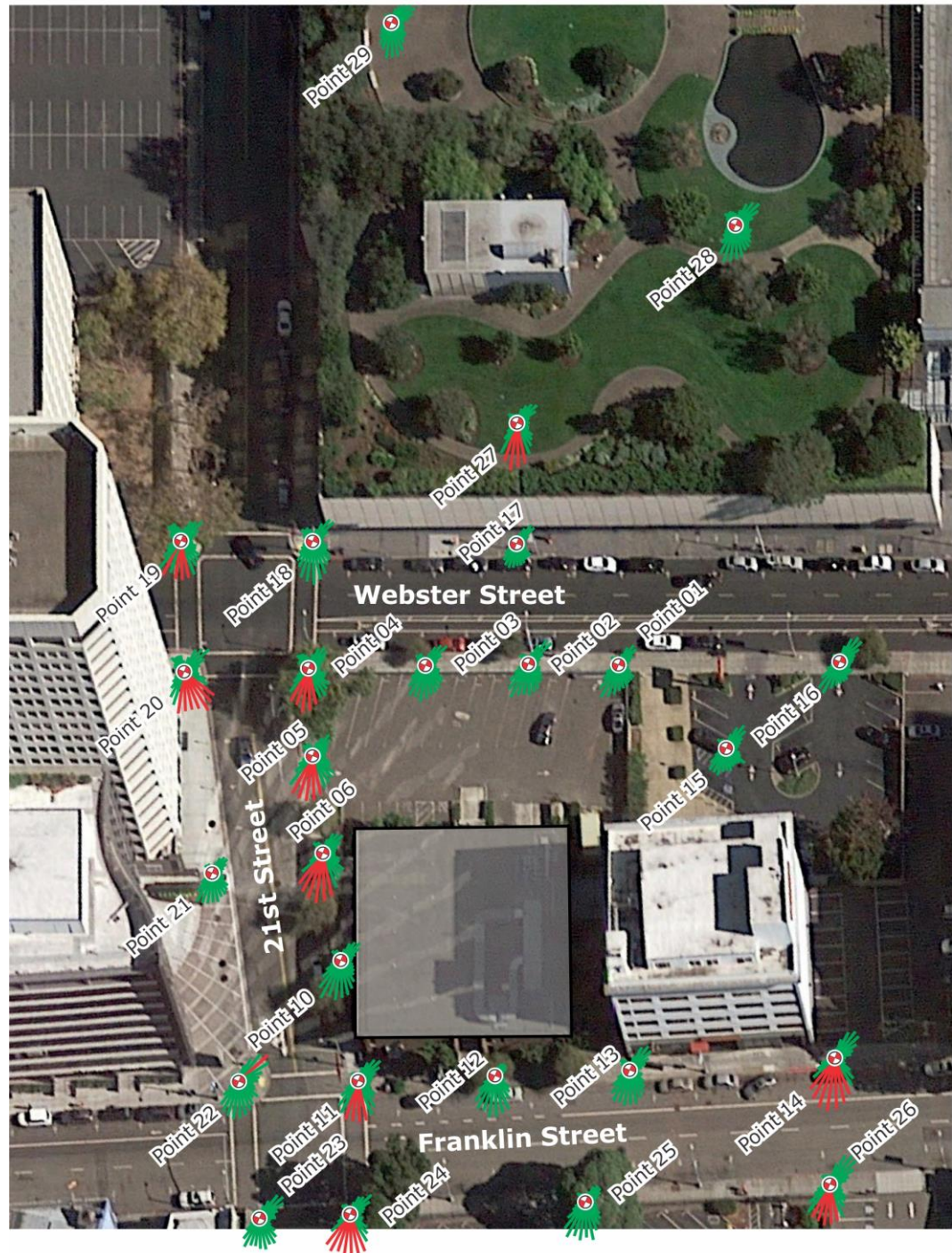
Table 11: Wind Tunnel Results Summary
(Surrounds case 3: With the development and cumulative surrounds)

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 01	11.0	36.0	NO	YES	-
Point 02	11.0	36.0	YES	YES	-
Point 03	11.0	36.0	YES	YES	-
Point 04	11.0	36.0	YES	YES	-
Point 05	11.0	36.0	YES	YES	-
Point 06	11.0	36.0	NO	YES	Better than Existing site conditions
Point 07	11.0	36.0	YES	YES	-
Point 08	11.0	36.0	YES	YES	-
Point 09	11.0	36.0	YES	YES	-
Point 10	11.0	36.0	YES	YES	-
Point 11	11.0	36.0	YES	YES	-
Point 12	11.0	36.0	YES	YES	-
Point 13	11.0	36.0	YES	YES	-
Point 14	11.0	36.0	NO	YES	Better than Existing site conditions

Study Point	Desired Criterion (mph)		Meet Comfort Criterion	Meet CEQA Threshold	Better than Existing/Notes
	20% Exceedance GEM	CEQA Threshold			
Point 15	11.0	36.0	NO	YES	-
Point 16	11.0	36.0	NO	YES	-
Point 17	11.0	36.0	YES	YES	-
Point 18	11.0	36.0	NO	YES	-
Point 19	11.0	36.0	NO	YES	-
Point 20	11.0	36.0	NO	YES	-
Point 21	11.0	36.0	YES	YES	-
Point 22	11.0	36.0	NO	YES	-
Point 23	11.0	36.0	YES	YES	-
Point 24	11.0	36.0	YES	YES	-
Point 25	11.0	36.0	YES	YES	-
Point 26	11.0	36.0	NO	YES	Equivalent to existing site conditions
Point 28	11.0	36.0	YES	YES	-
Point 29	11.0	36.0	NO	YES	-
Point 30	11.0	36.0	YES	YES	-
Point 31	11.0	36.0	YES	YES	-
Point 32	11.0	36.0	YES	YES	-
Point 33	11.0	36.0	YES	YES	-
Point 34	11.0	36.0	YES	YES	-
Point 35	11.0	36.0	YES	YES	-
Point 36	11.0	36.0	YES	YES	-
Point 37	11.0	36.0	YES	YES	-
Point 38	11.0	36.0	YES	YES	-

Legend

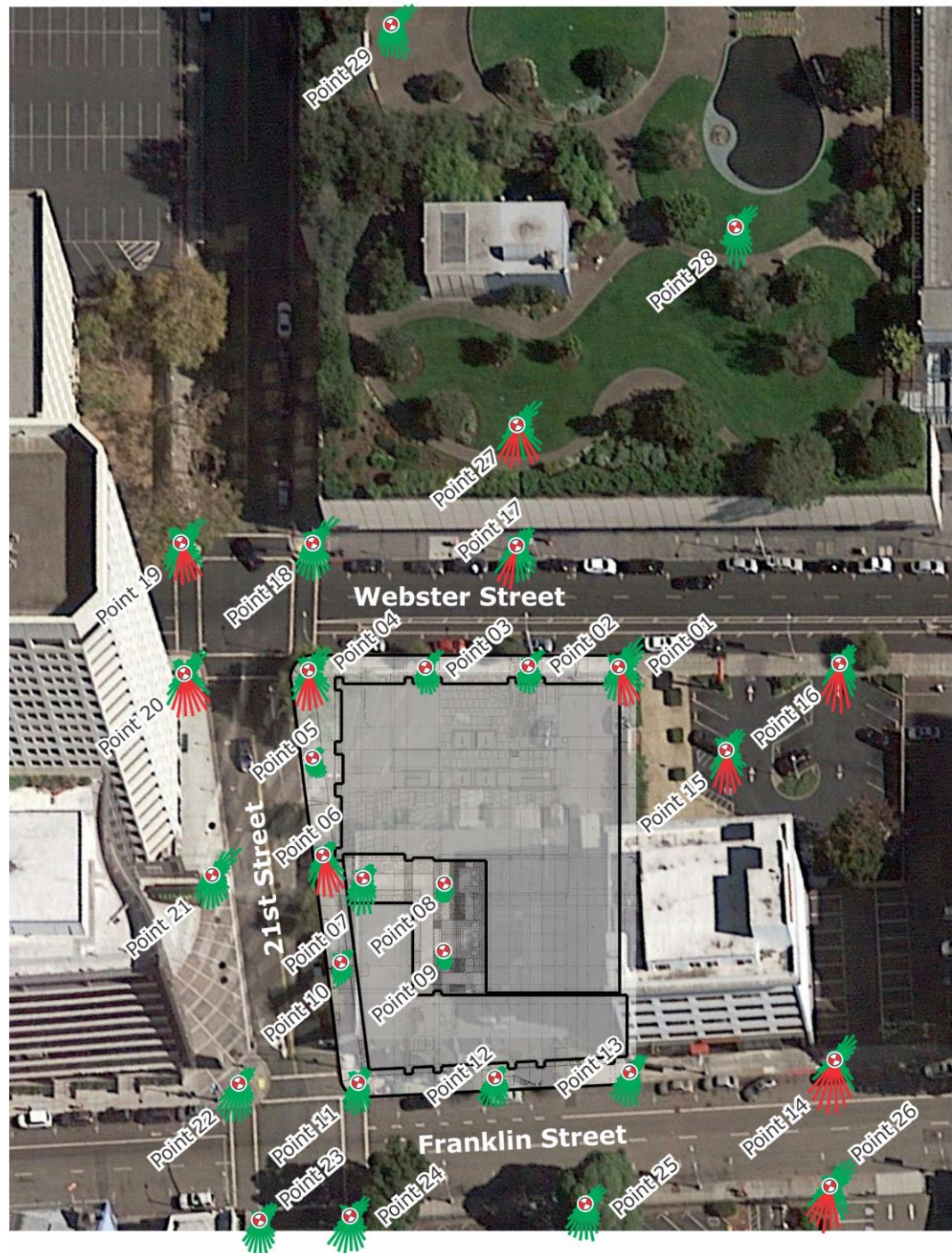
- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6a: Wind Directionality Results Plots – Level 01 and Kaiser Rooftop Garden
(Surrounds Case 1: EXISTING SITE CONDITIONS WITHOUT THE DEVELOPMENT)**

Legend

- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6b: Wind Directionality Results Plots – Level 01 and Kaiser Rooftop Garden
(Surrounds case 2: WITH THE DEVELOPMENT AND EXISTING SURROUNDS)**

Legend

- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria

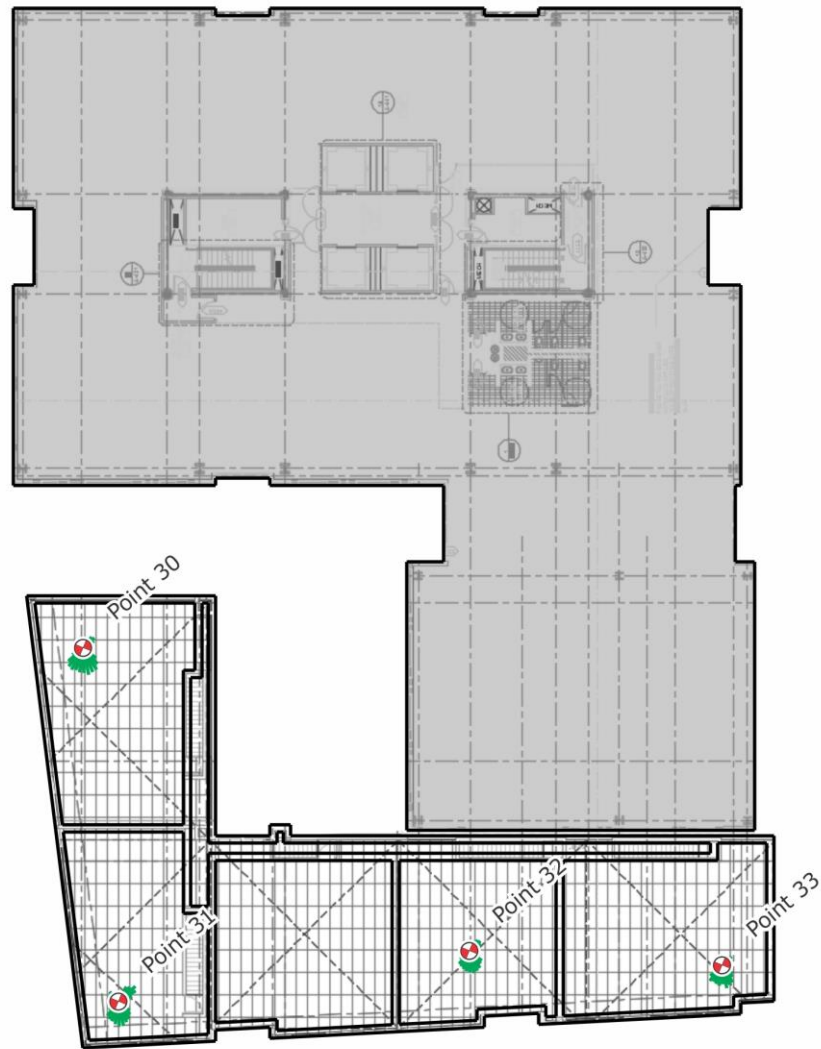
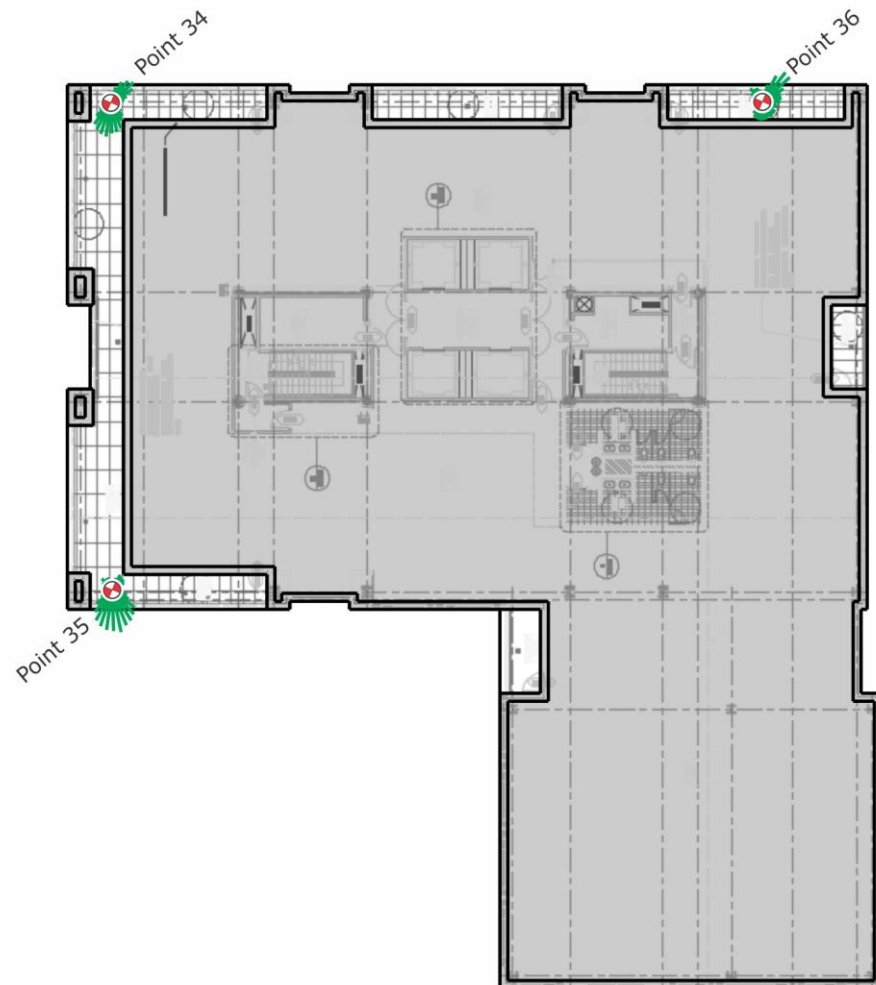


Figure 6c: Wind Directionality Results Plots – Level 04
(Surrounds case 2: WITH THE DEVELOPMENT AND EXISTING SURROUNDS)

Legend

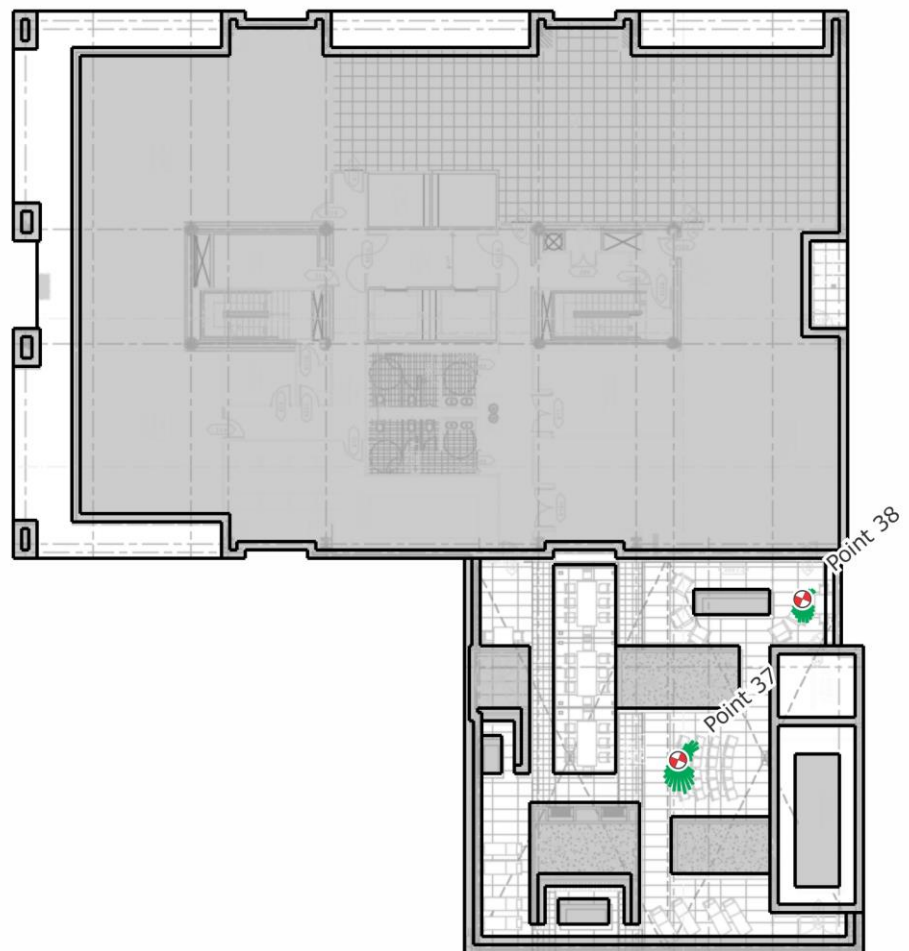
- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6d: Wind Directionality Results Plots – Level 05
(Surrounds case 2: WITH THE DEVELOPMENT AND EXISTING SURROUNDS)**

Legend

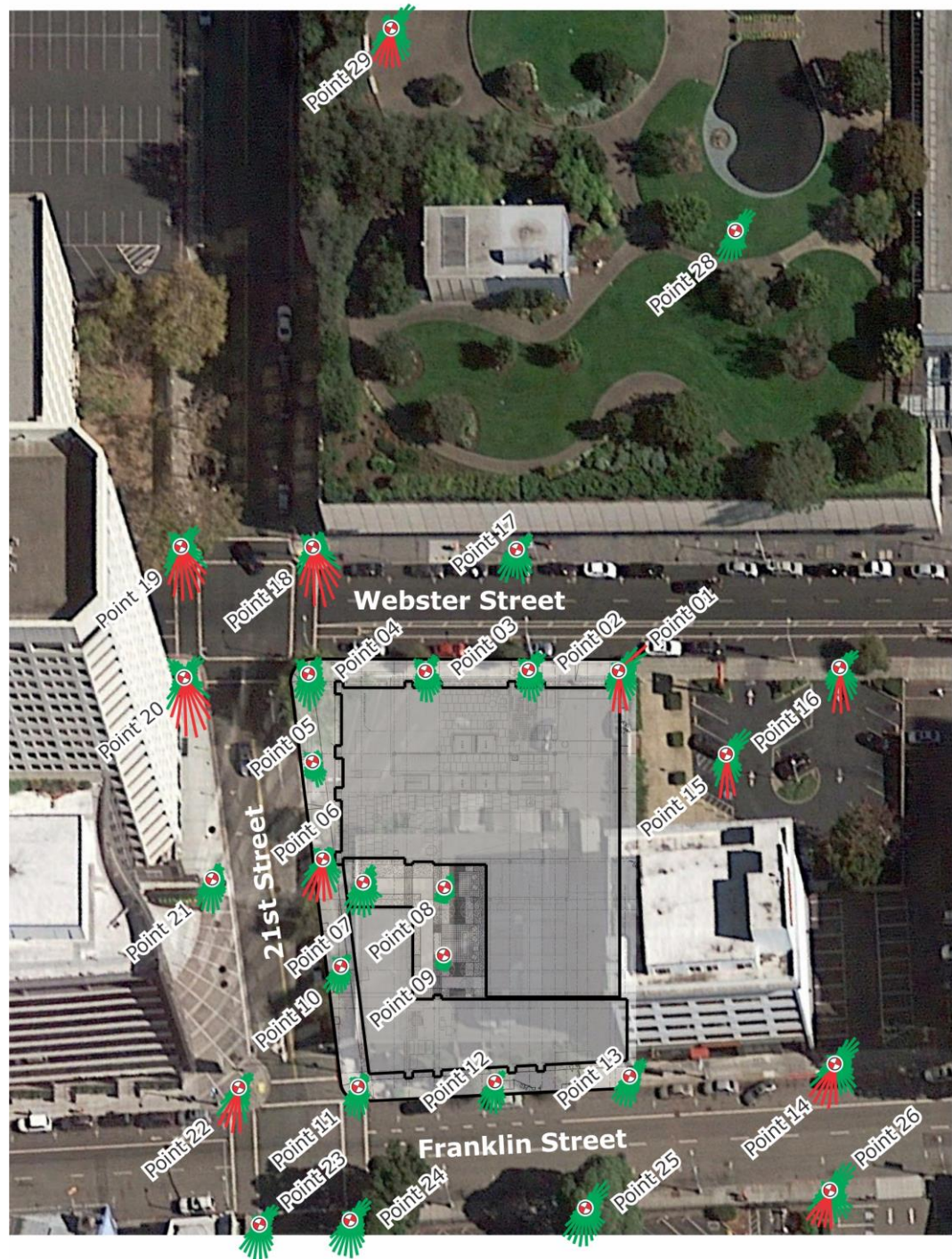
- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6e: Wind Directionality Results Plots – Level 06
(Surrounds case 2: WITH THE DEVELOPMENT AND EXISTING SURROUNDS)**

Legend

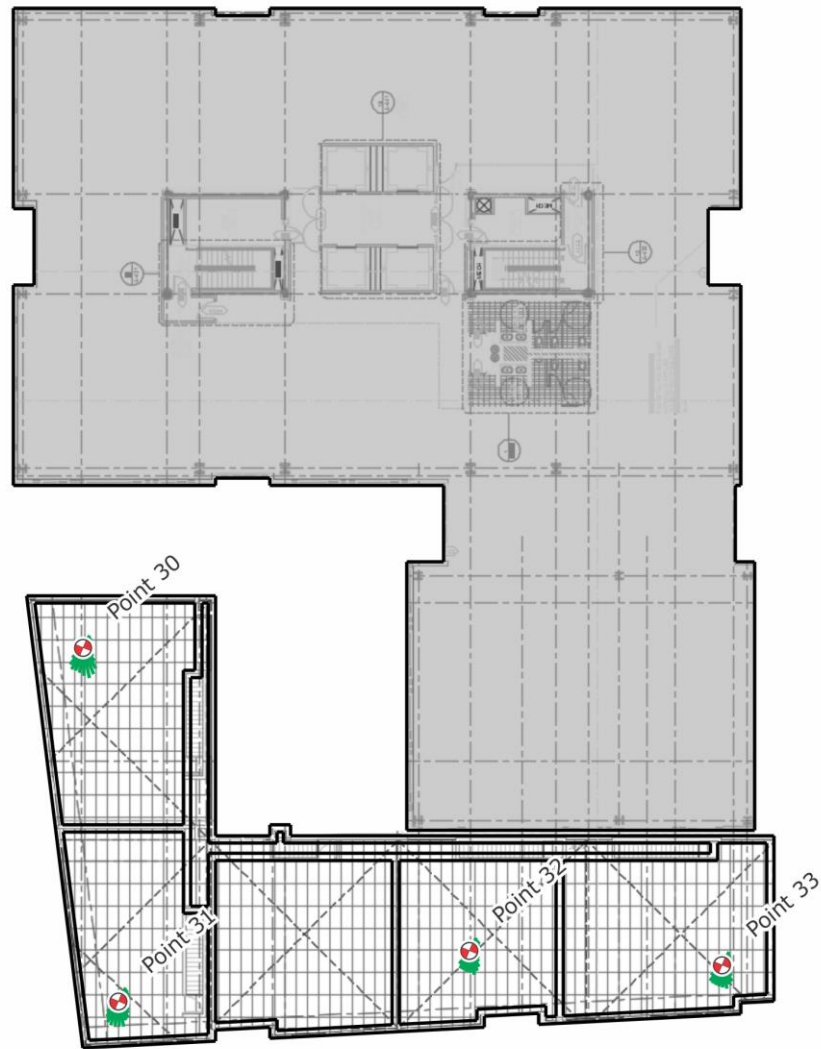
- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6f: Wind Directionality Results Plots – Level 01 and Kaiser Rooftop Garden
(Surrounds case 3: WITH THE DEVELOPMENT AND CUMULATIVE SURROUNDS)**

Legend

- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6g: Wind Directionality Results Plots – Level 04
(Surrounds case 3: WITH THE DEVELOPMENT AND CUMULATIVE SURROUNDS)**

Legend

- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria

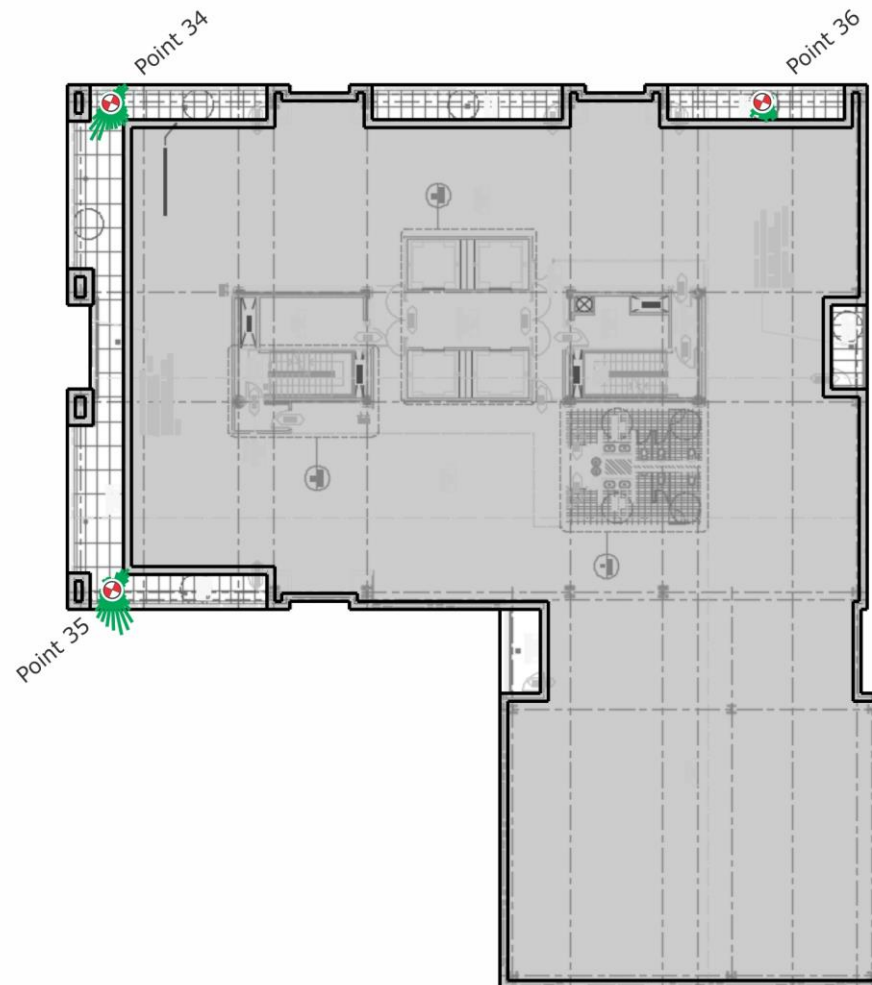
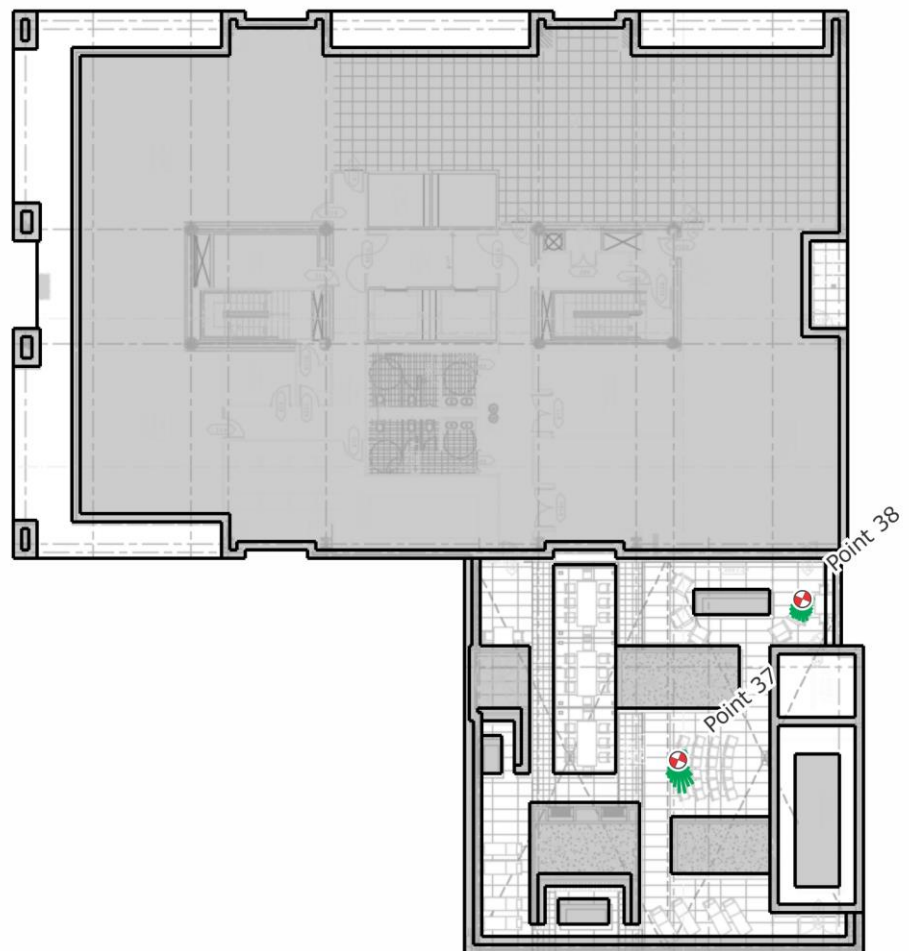


Figure 6h: Wind Directionality Results Plots – Level 05
(Surrounds case 3: WITH THE DEVELOPMENT AND CUMULATIVE SURROUNDS)

Legend

- Wind Speed Magnitude from Directions Exceeding Comfort Criteria
- Wind Speed Magnitude from Directions Satisfying Comfort Criteria



**Figure 6i: Wind Directionality Results Plots – Level 06
(Surrounds case 3: WITH THE DEVELOPMENT AND CUMULATIVE SURROUNDS)**

6.2 Discussion

6.2.1 Surrounds Case 1 - Existing site conditions without the development

Assessing the existing site conditions without the subject development, it was found that wind conditions at Point 22 currently slightly exceeds the City of Oakland CEQA Wind Hazard Threshold. This is due to a south-easterly wind that is upwashing off the existing building and subsequently reattaching onto that location.

As shown in the wind rose plots in Figure 6a, it can be seen that the dominant wind direction for this scenario is due to the westerly wind, which tends to result in an exceedance of the comfort criterion for a number of areas along 21st Street and to a lesser extent, Franklin Street.

6.2.2 Surrounds Case 2: With the development and existing surrounds

Assessing the wind conditions with the inclusion of the subject development and the existing surrounds was carried out with the inclusion of the proposed 6.5ft deep awnings on the eastern aspect of Level 1 and large evergreen trees along Webster Street. The results indicate that all outdoor trafficable locations experience wind conditions that are within the City of Oakland's CEQA Wind Hazard Threshold, including Point 22. The improvement in the wind conditions at Point 22 was brought about due to the shielding effect provided by the proposed tower at that point, with respect to the south-easterly winds.

As shown in the wind rose plots in Figure 6b, it can be seen that the dominant wind direction for this scenario causing an exceedance of the pedestrian comfort criteria is due to the westerly wind.

Comparison between Surrounds Case 1 and Surrounds Case 2 show that the proposed development site results in some increase in the wind speeds along Webster Street and the carpark located south of the development but still within the CEQA Wind Hazard Threshold. The development has also resulted in some improvement in the wind conditions for certain areas along 21st Street.

It is noted that the development will not adversely impact the wind conditions on the Kaiser Rooftop Garden. The minor impact with respect to the comfort criterion at Point 27 would be ameliorated by the effect of the existing vegetation along the western perimeter of the Kaiser Rooftop Garden.

6.2.3 Surrounds Case 3: With the development and cumulative surrounds

Assessing the wind conditions with the inclusion of the subject development and with the cumulative surrounds, all outdoor trafficable locations will remain within the City of Oakland CEQA Wind Hazard Threshold.

As shown in the wind rose plots in Figure 6f, it can be seen that the dominant wind direction for this scenario resulting in an exceedance of the pedestrian wind comfort criteria is due to the westerly wind. The impact of the proposed development with the effect of the cumulative surrounds is similar to the effect of the proposed development with the effect of the existing surrounds. The key differences between the two surrounds cases is that the slight impact at Point 17 with respect to the comfort criterion will be mitigated with the effect of the cumulative surrounds, due to shielding provided by the proposed future buildings at the corner Webster and 21st and Webster and 20th (Buildings 3-1 and 3-2 in Figure 2o). The cumulative surrounds will result in some increase in the wind speeds at the opposite corners of the intersection of Webster and 21st Streets but still within the CEQA Wind Hazard Threshold.

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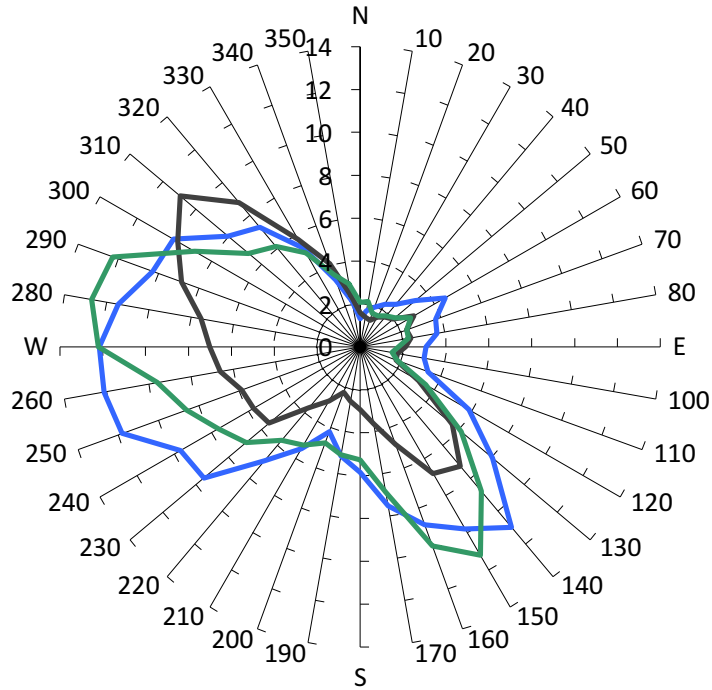
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APPENDIX A - DIRECTIONAL RESULTS OF THE WIND TUNNEL TEST

Measured Wind Speeds at Point 01

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence
(existing site conditions)

7%

Probability of Criterion
Exceedence (Proposed)

27%

Probability of Criterion
Exceedence (Cumulative)

21%

NOTE: The desired criterion is
exceeded if the probability of
exceedence is greater than
20%

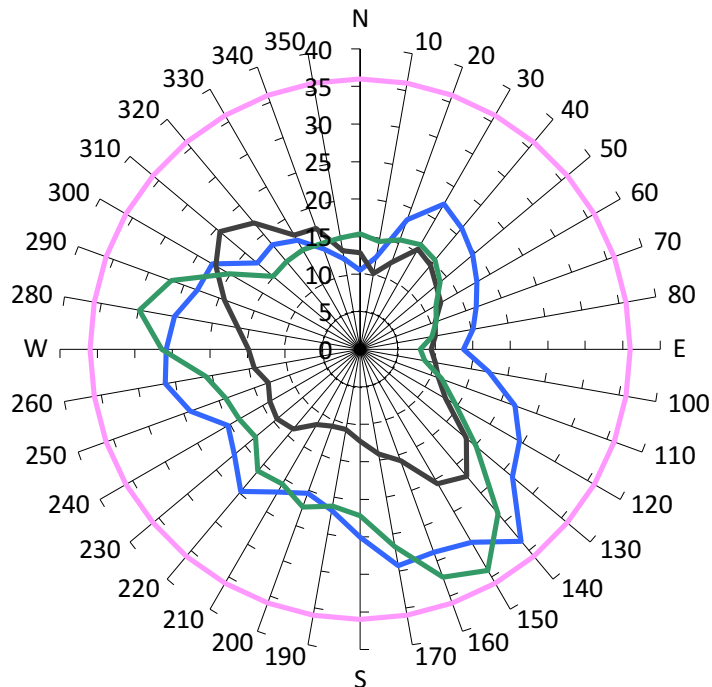
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

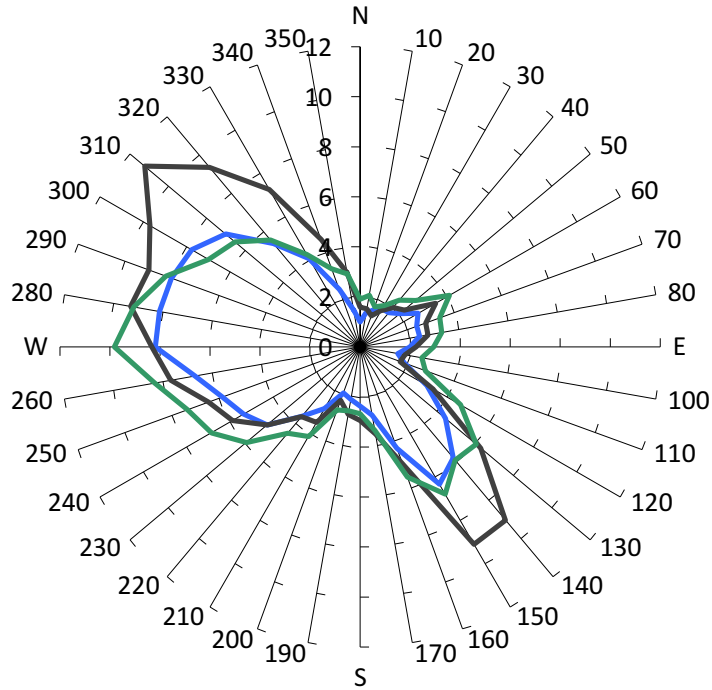


Desired Criterion

36mph

Measured Wind Speeds at Point 02

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

11%

Probability of Criterion
Exceedance (Proposed)

3%

Probability of Criterion
Exceedance (Cumulative)

6%

NOTE: The desired criterion is exceeded if the probability of exceedance is greater than 20%

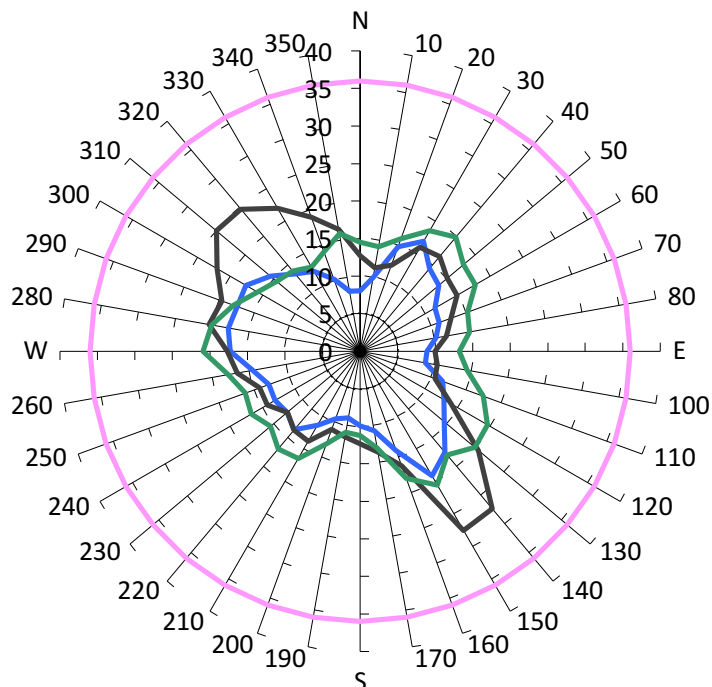
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

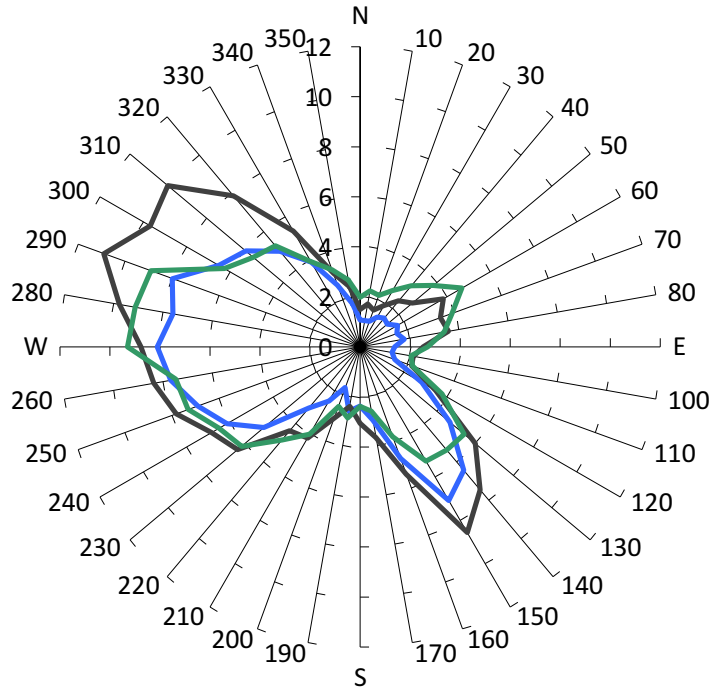


Desired Criterion

36mph

Measured Wind Speeds at Point 03

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence
(existing site conditions)

11%

Probability of Criterion
Exceedence (Proposed)

2%

Probability of Criterion
Exceedence (Cumulative)

6%

NOTE: The desired criterion is
exceeded if the probability of
exceedence is greater than
20%

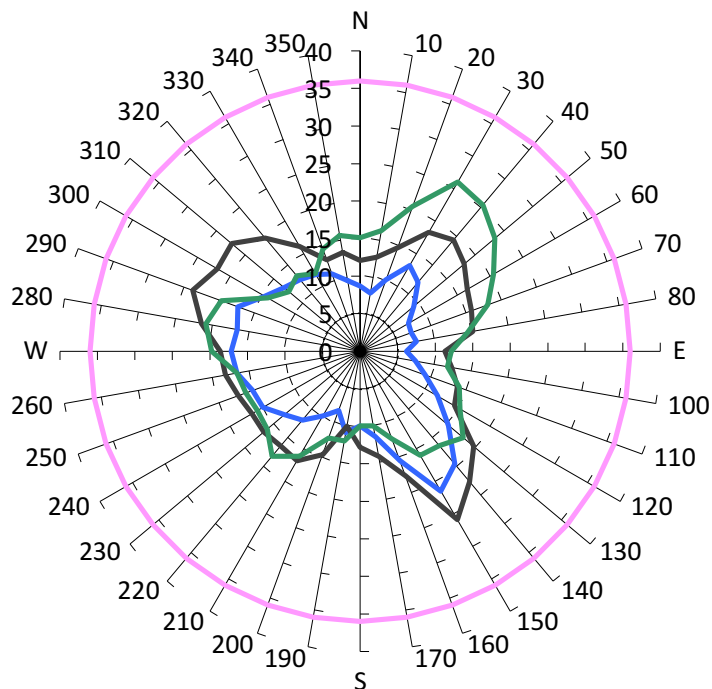
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

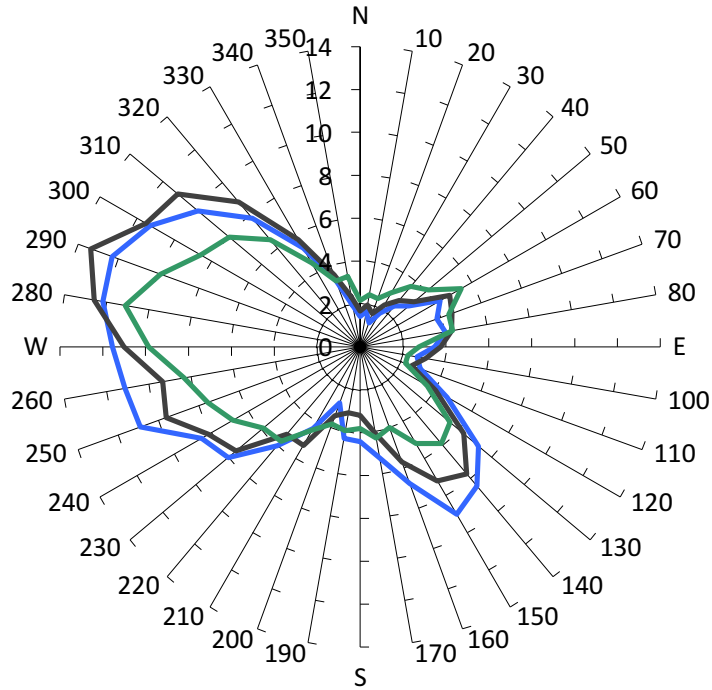


Desired Criterion

36mph

Measured Wind Speeds at Point 04

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

23%

Probability of Criterion
Exceedance (Proposed)

24%

Probability of Criterion
Exceedance (Cumulative)

11%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

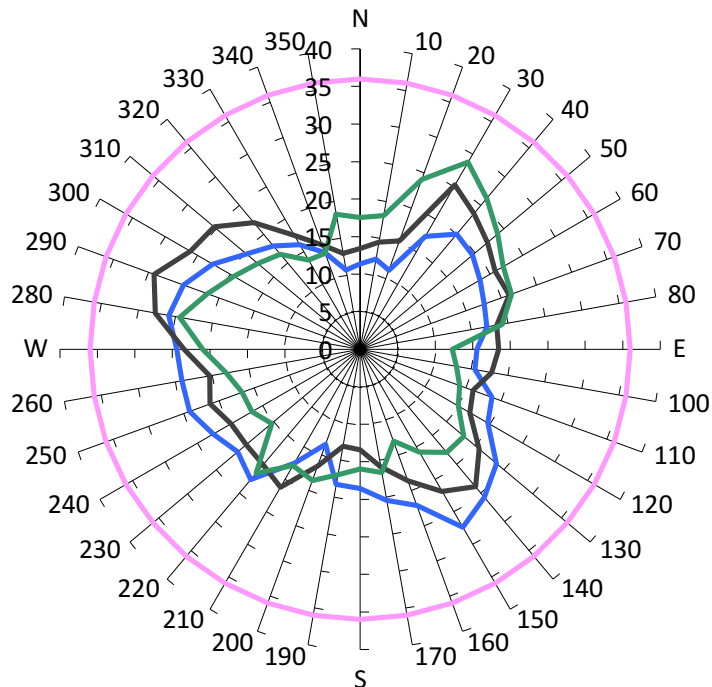
Criterion.

With development as proposed. Including 6.5ft awnings and proposed trees along Webster Street

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

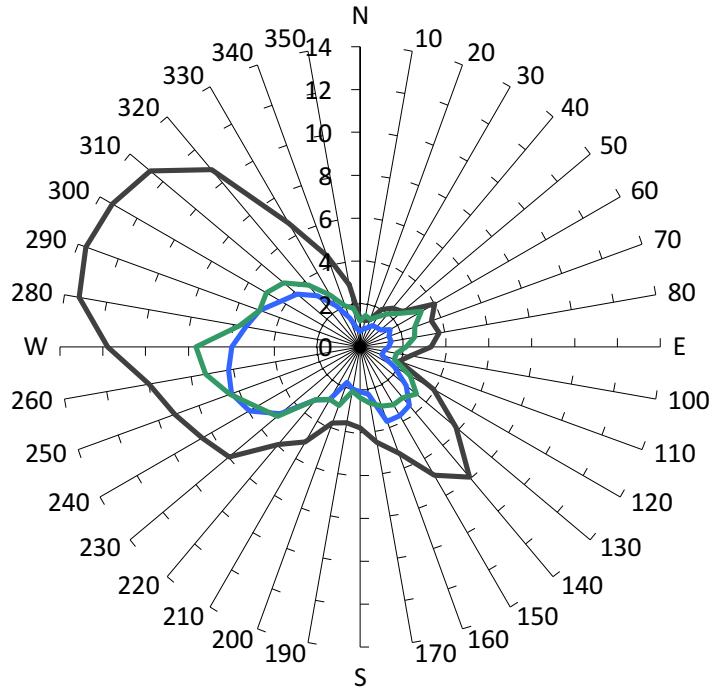


Desired Criterion

36mph

Measured Wind Speeds at Point 05

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

29%

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

1%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

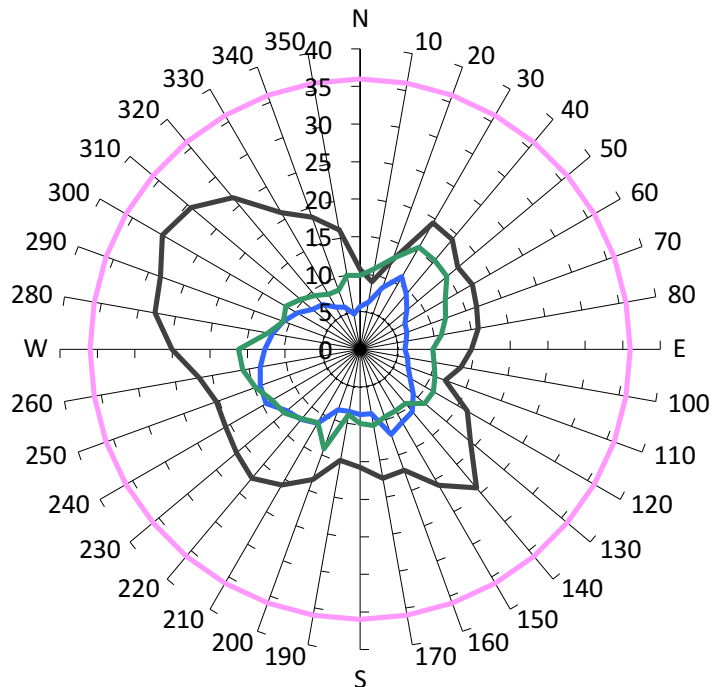
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

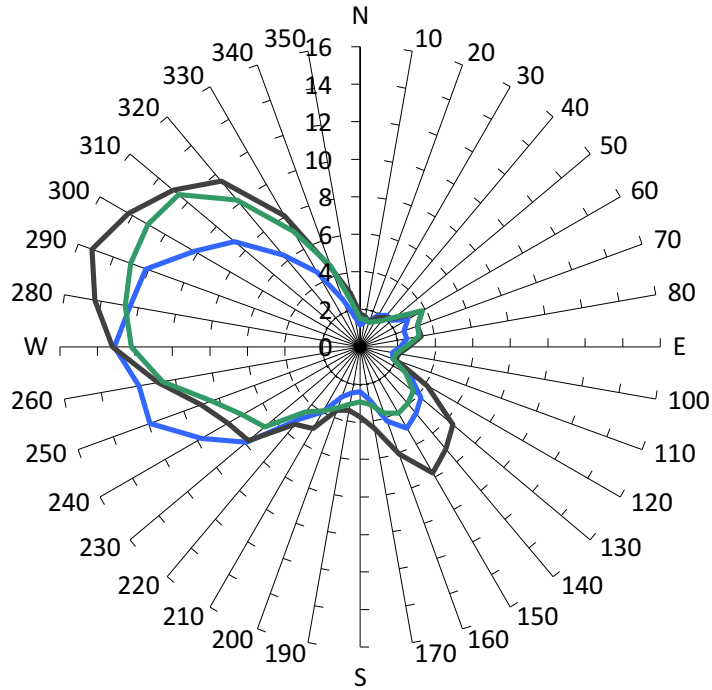


Desired Criterion

36mph

Measured Wind Speeds at Point 06

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

34%

Probability of Criterion
Exceedance (Proposed)

23%

Probability of Criterion
Exceedance (Cumulative)

25%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

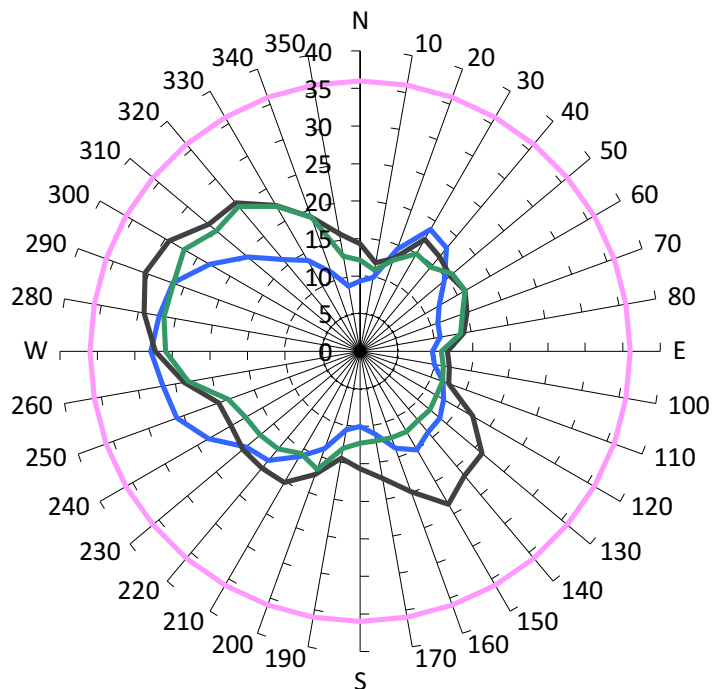
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

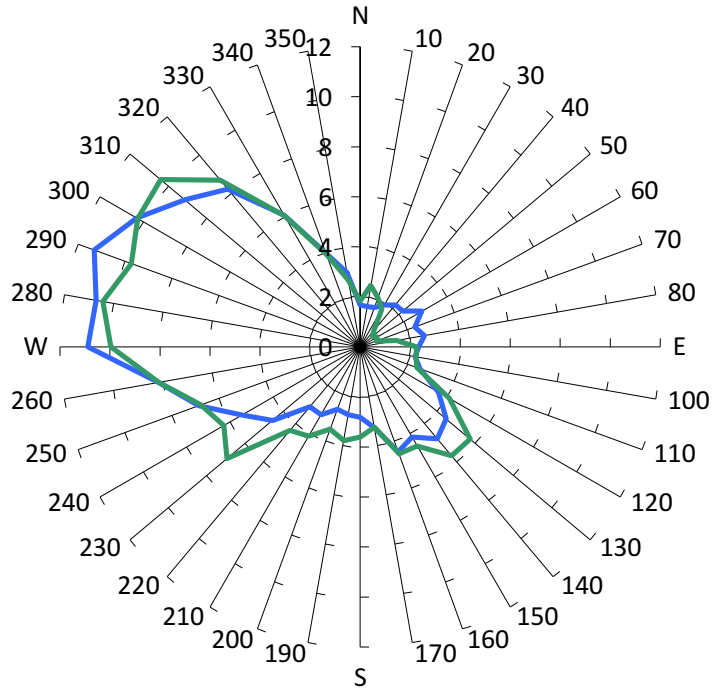


Desired Criterion

36mph

Measured Wind Speeds at Point 07

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

11%

Probability of Criterion
Exceedance (Cumulative)

10%

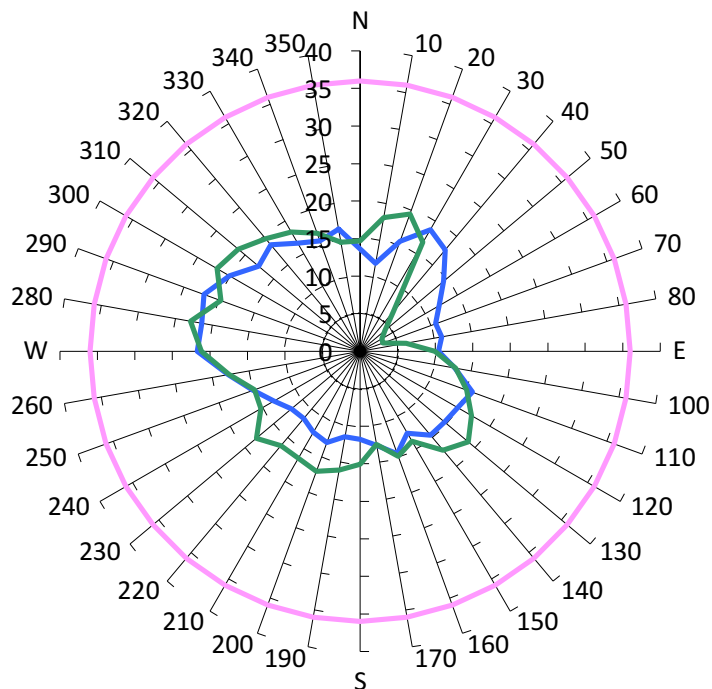
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

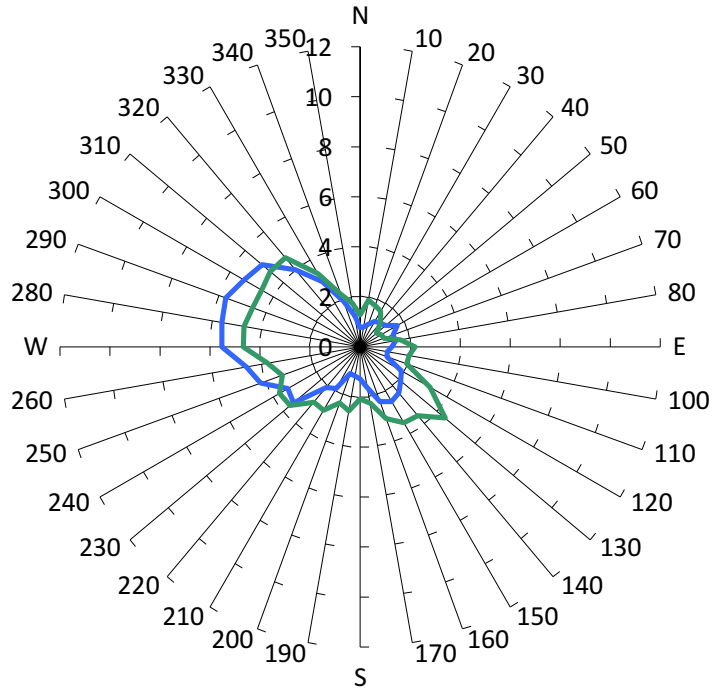


Desired Criterion

36mph

Measured Wind Speeds at Point 08

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

0%

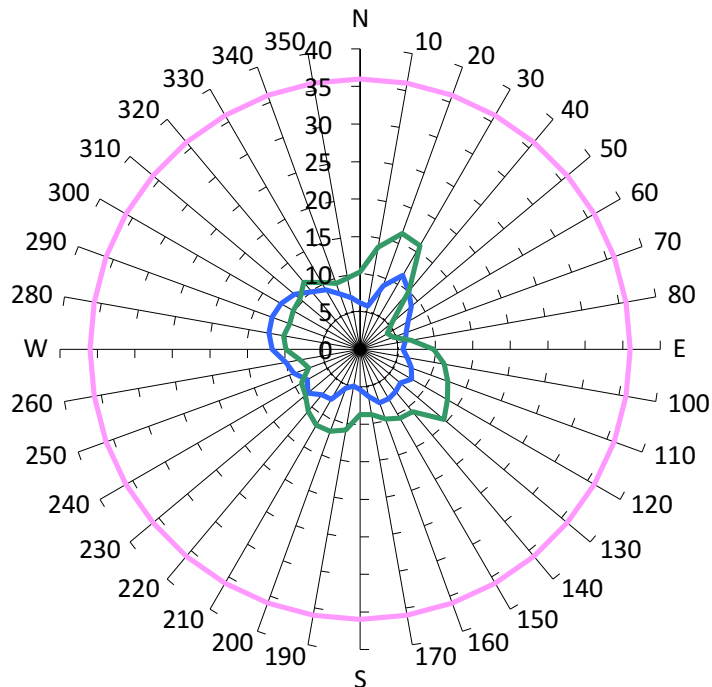
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

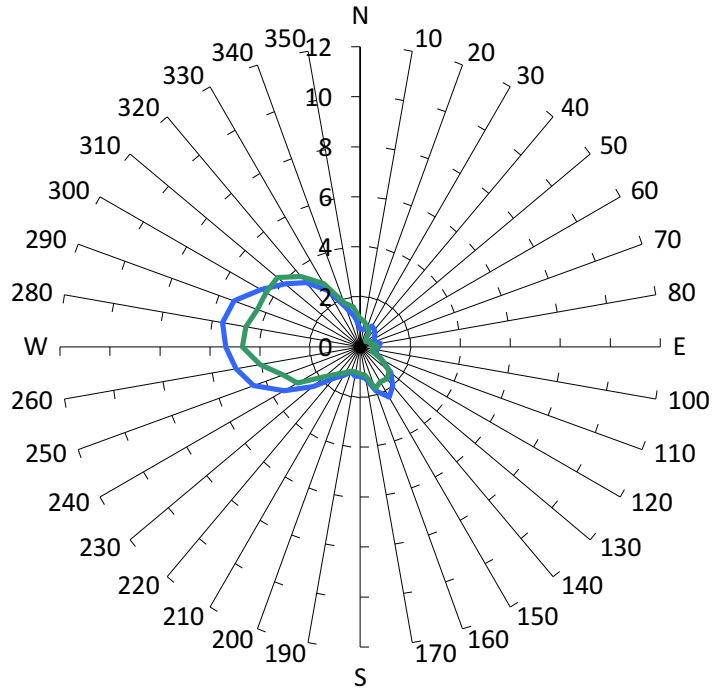


Desired Criterion

36mph

Measured Wind Speeds at Point 09

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

0%

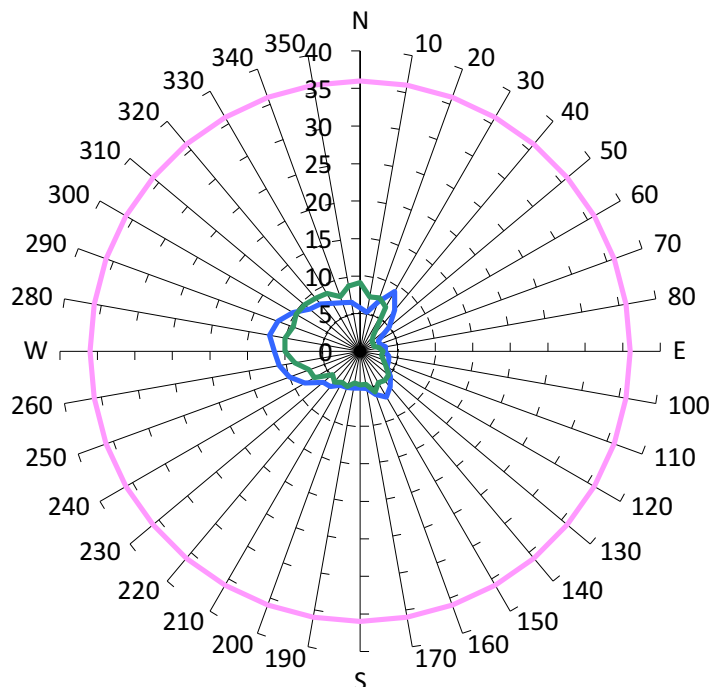
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

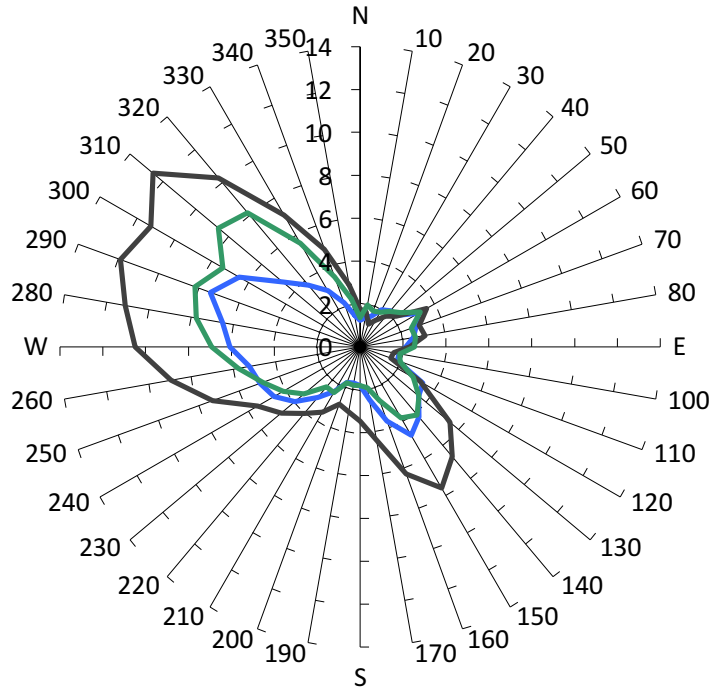


Desired Criterion

36mph

Measured Wind Speeds at Point 10

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

18%

Probability of Criterion
Exceedance (Proposed)

1%

Probability of Criterion
Exceedance (Cumulative)

3%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

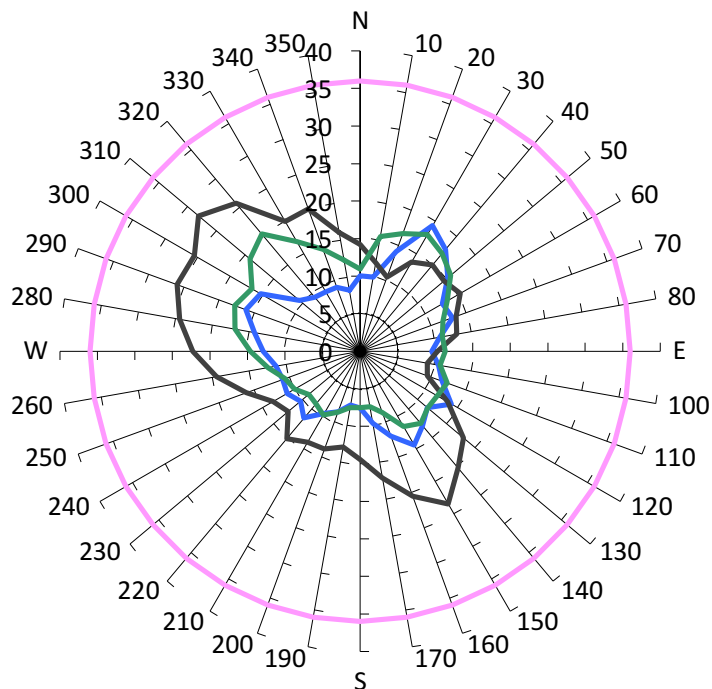
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

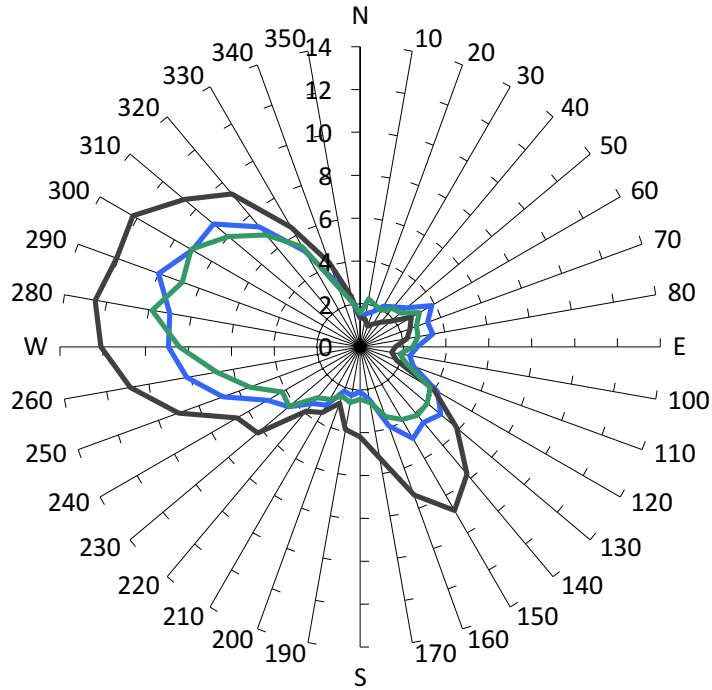


Desired Criterion

36mph

Measured Wind Speeds at Point 11

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

23%

Probability of Criterion
Exceedance (Proposed)

6%

Probability of Criterion
Exceedance (Cumulative)

5%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

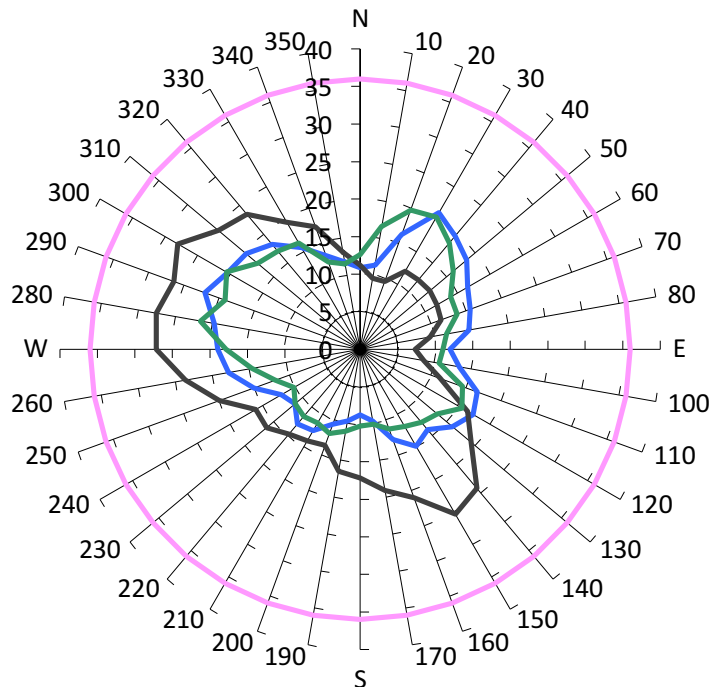
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

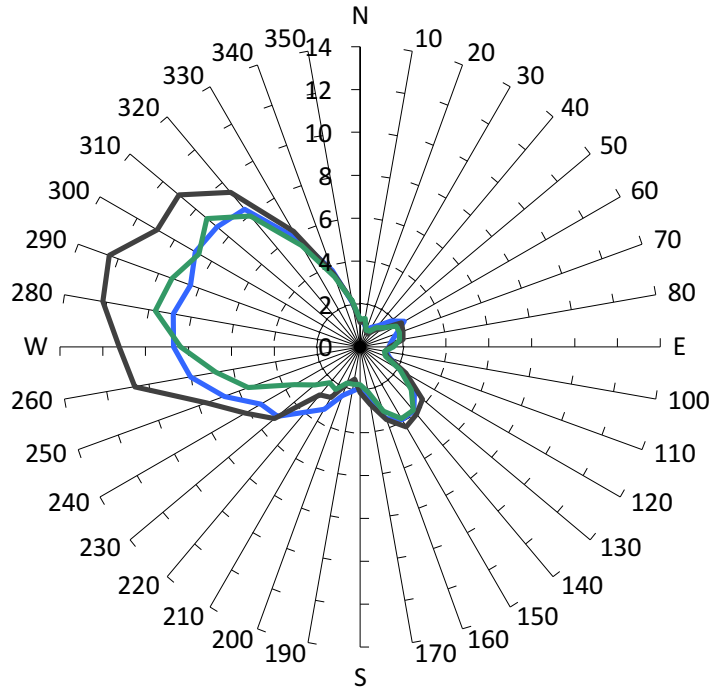


Desired Criterion

36mph

Measured Wind Speeds at Point 12

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence
(existing site conditions)

17%

Probability of Criterion
Exceedence (Proposed)

4%

Probability of Criterion
Exceedence (Cumulative)

5%

NOTE: The desired criterion is
exceeded if the probability of
exceedence is greater than
20%

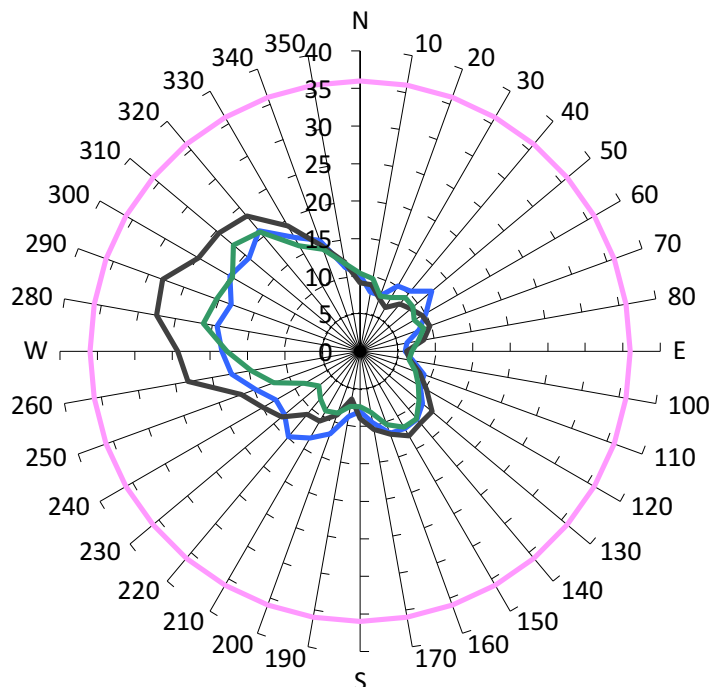
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

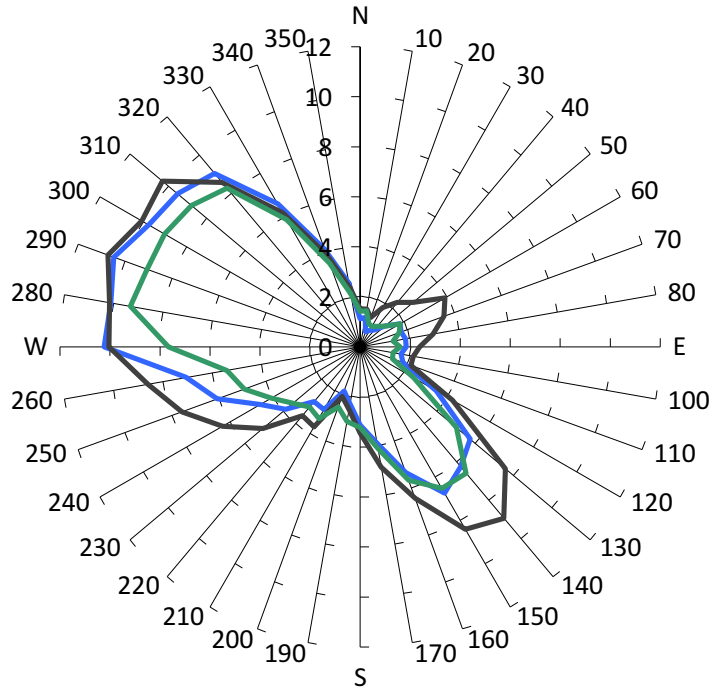


Desired Criterion

36mph

Measured Wind Speeds at Point 13

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

13%

Probability of Criterion
Exceedance (Proposed)

9%

Probability of Criterion
Exceedance (Cumulative)

5%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

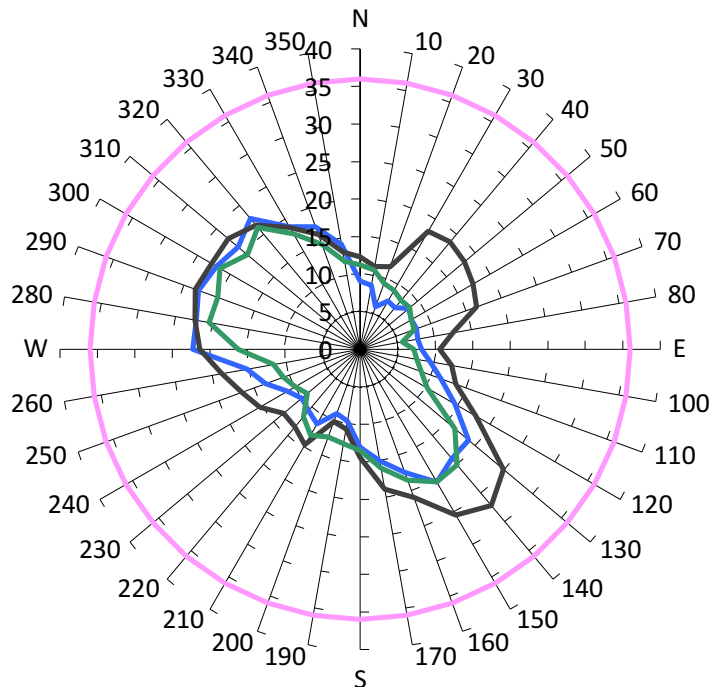
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

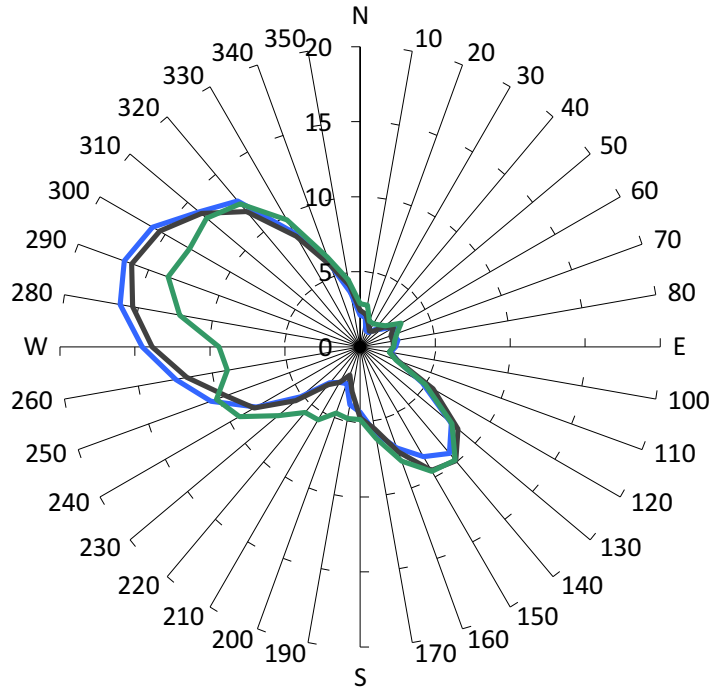


Desired Criterion

36mph

Measured Wind Speeds at Point 14

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

38%

Probability of Criterion
Exceedance (Proposed)

40%

Probability of Criterion
Exceedance (Cumulative)

30%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

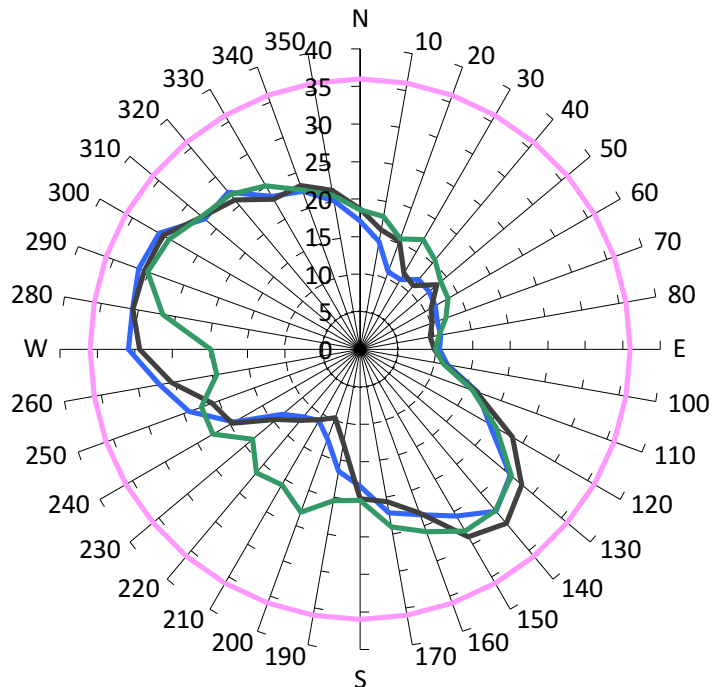
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

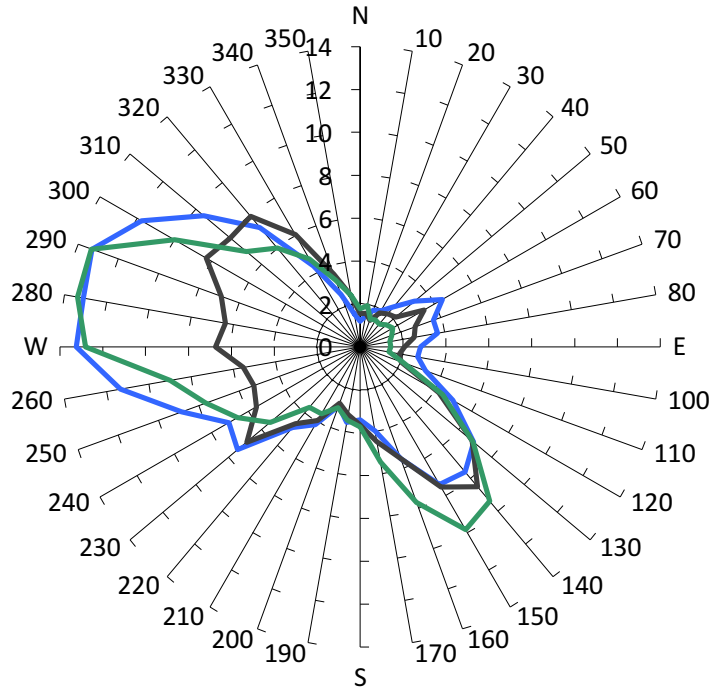


Desired Criterion

36mph

Measured Wind Speeds at Point 15

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

5%

Probability of Criterion
Exceedance (Proposed)

26%

Probability of Criterion
Exceedance (Cumulative)

22%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

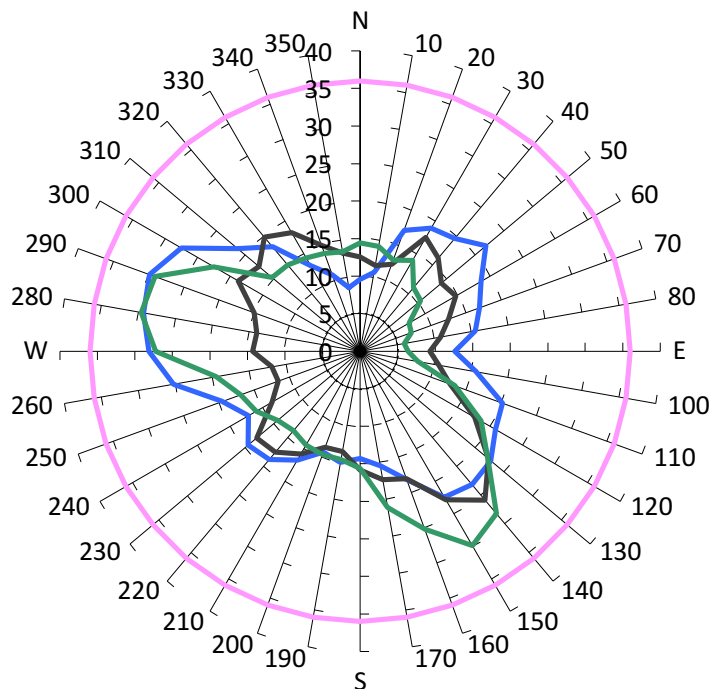
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

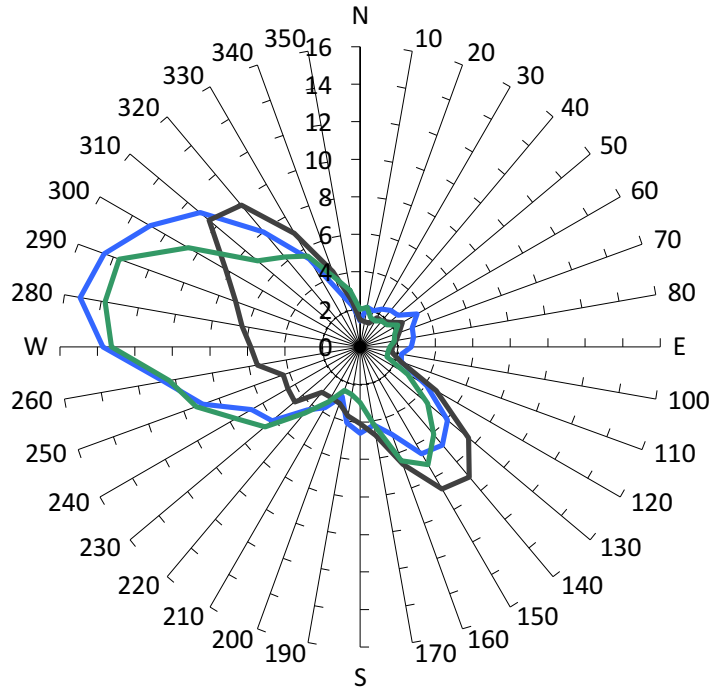


Desired Criterion

36mph

Measured Wind Speeds at Point 16

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

9%

Probability of Criterion
Exceedance (Proposed)

31%

Probability of Criterion
Exceedance (Cumulative)

24%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

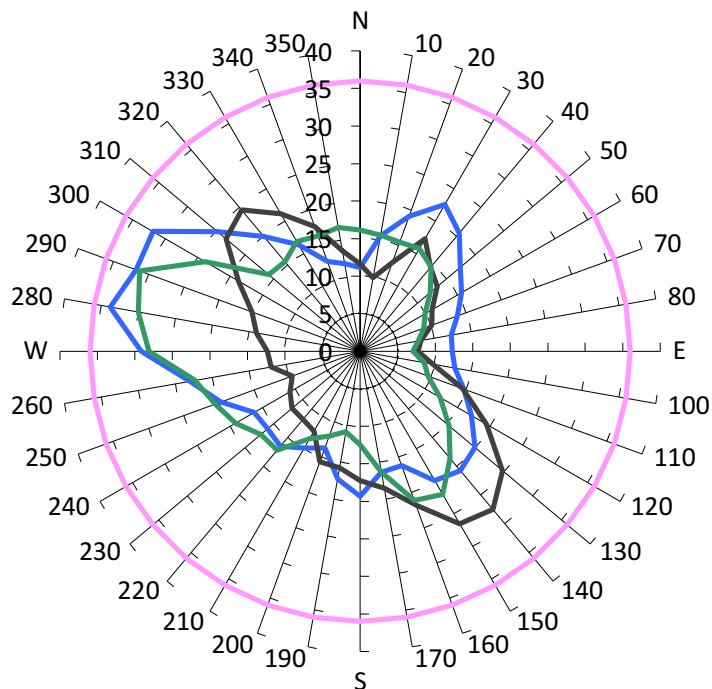
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

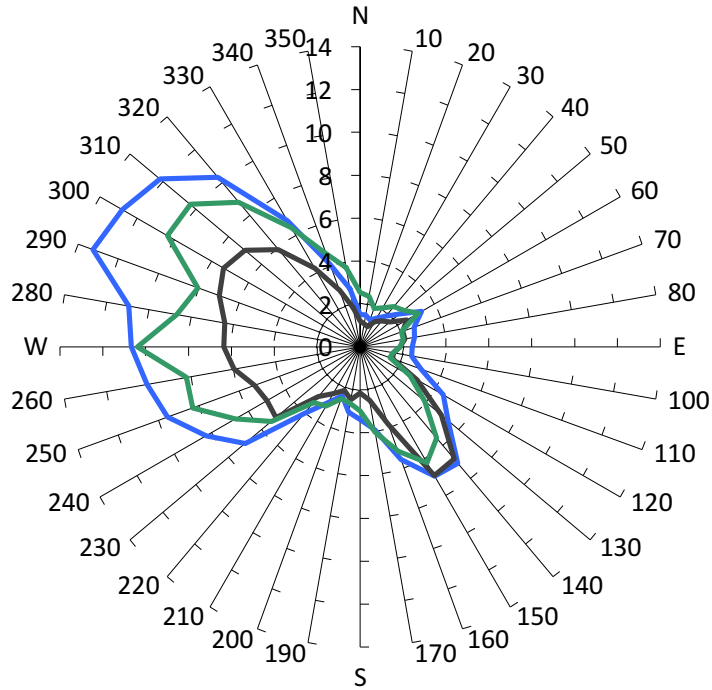


Desired Criterion

36mph

Measured Wind Speeds at Point 17

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

2%

Probability of Criterion
Exceedance (Proposed)

23%

Probability of Criterion
Exceedance (Cumulative)

10%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

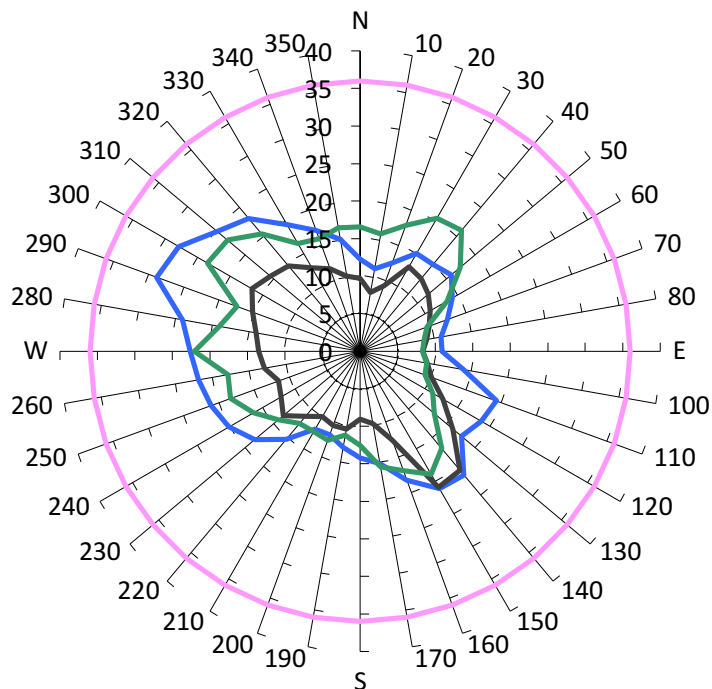
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

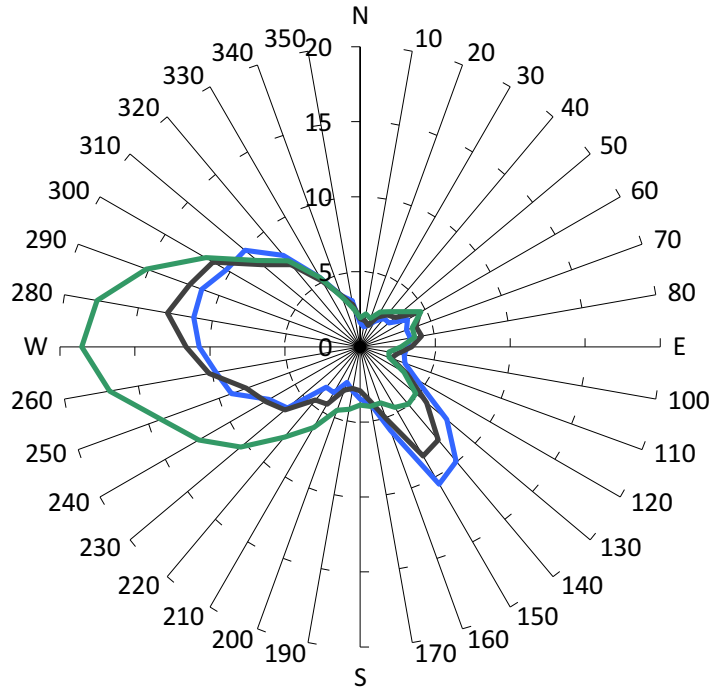


Desired Criterion

36mph

Measured Wind Speeds at Point 18

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

20%

Probability of Criterion
Exceedance (Proposed)

17%

Probability of Criterion
Exceedance (Cumulative)

41%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

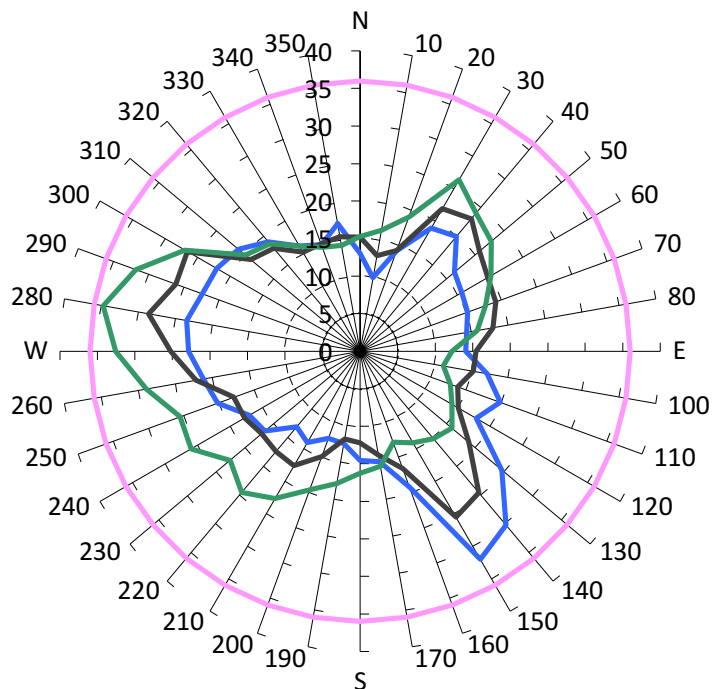
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

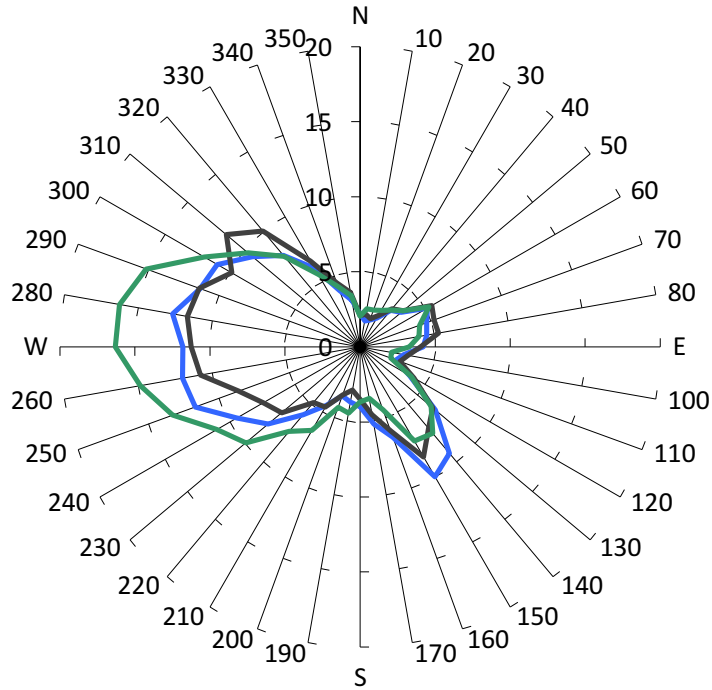


Desired Criterion

36mph

Measured Wind Speeds at Point 19

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

21%

Probability of Criterion
Exceedance (Proposed)

26%

Probability of Criterion
Exceedance (Cumulative)

41%

NOTE: The desired criterion is exceeded if the probability of exceedance is greater than 20%

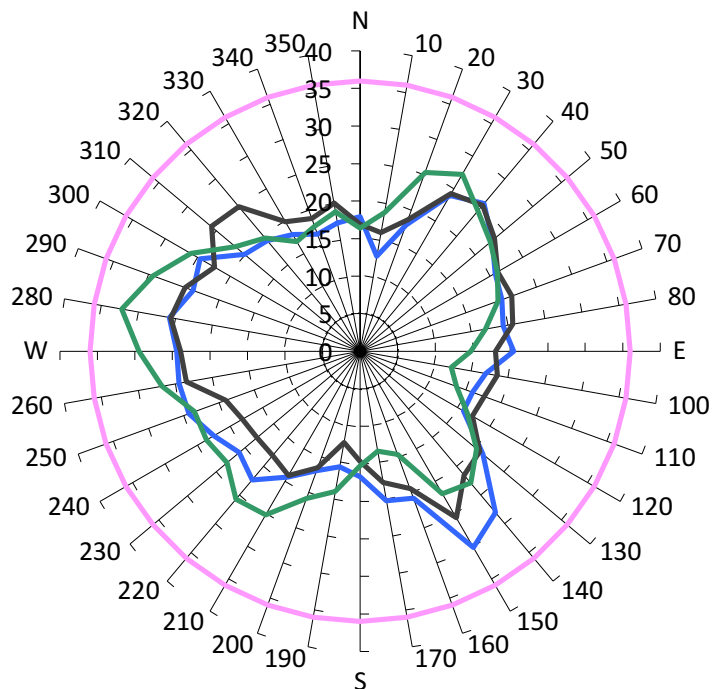
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

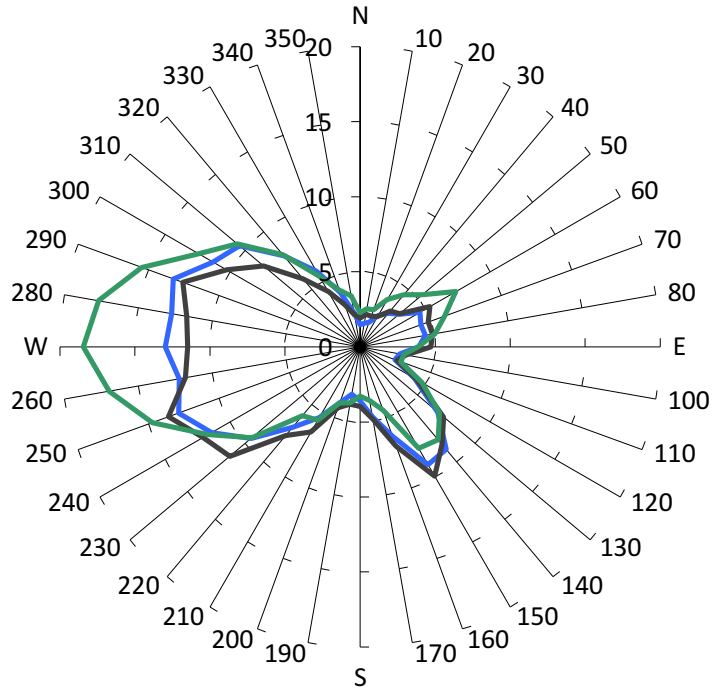


Desired Criterion

36mph

Measured Wind Speeds at Point 20

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

31%

Probability of Criterion
Exceedance (Proposed)

33%

Probability of Criterion
Exceedance (Cumulative)

44%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

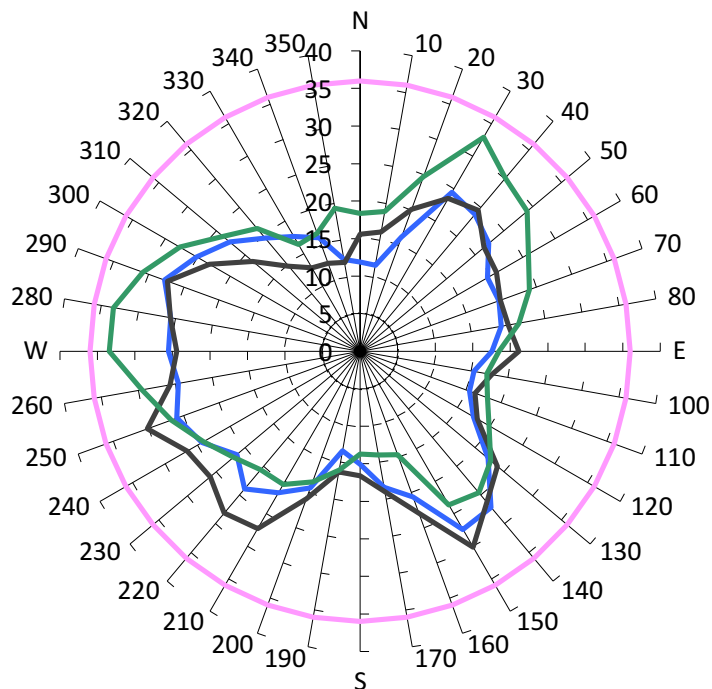
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

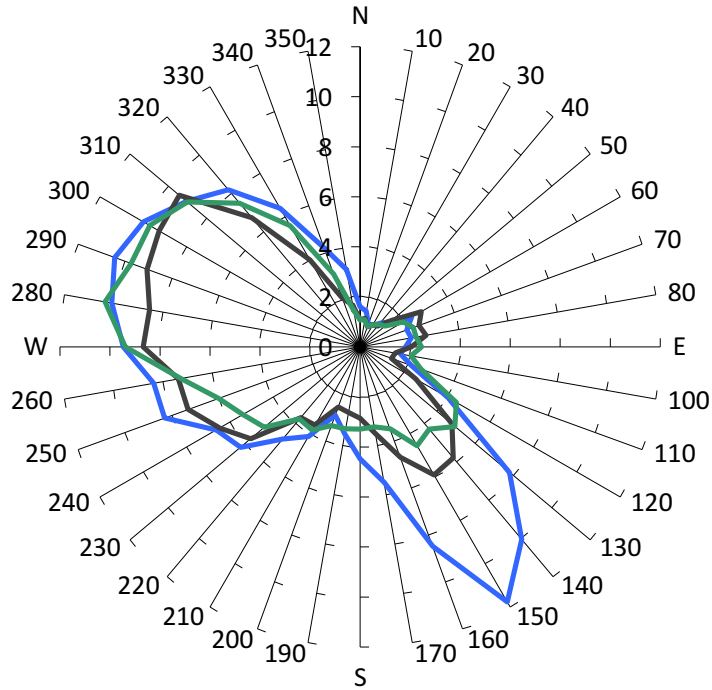


Desired Criterion

36mph

Measured Wind Speeds at Point 21

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

5%

Probability of Criterion
Exceedance (Proposed)

14%

Probability of Criterion
Exceedance (Cumulative)

7%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

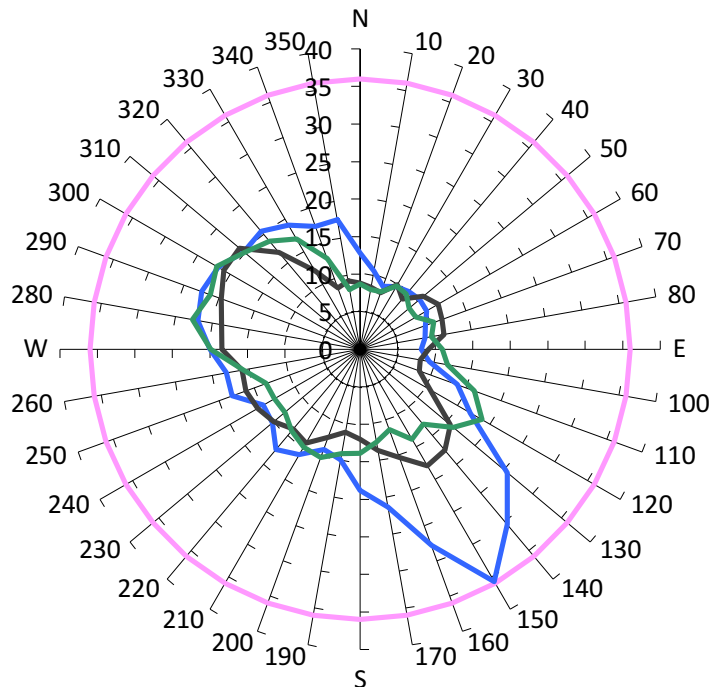
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

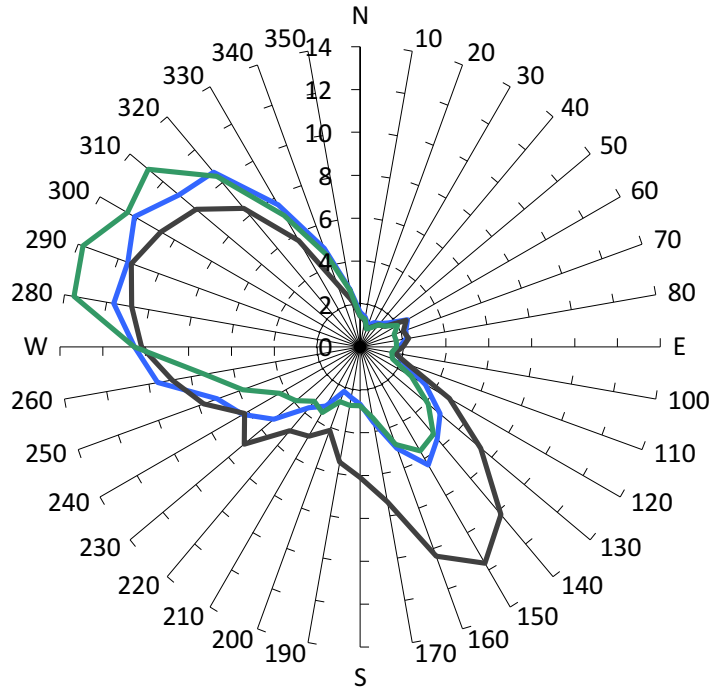


Desired Criterion

36mph

Measured Wind Speeds at Point 22

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

19%

Probability of Criterion
Exceedance (Proposed)

17%

Probability of Criterion
Exceedance (Cumulative)

23%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

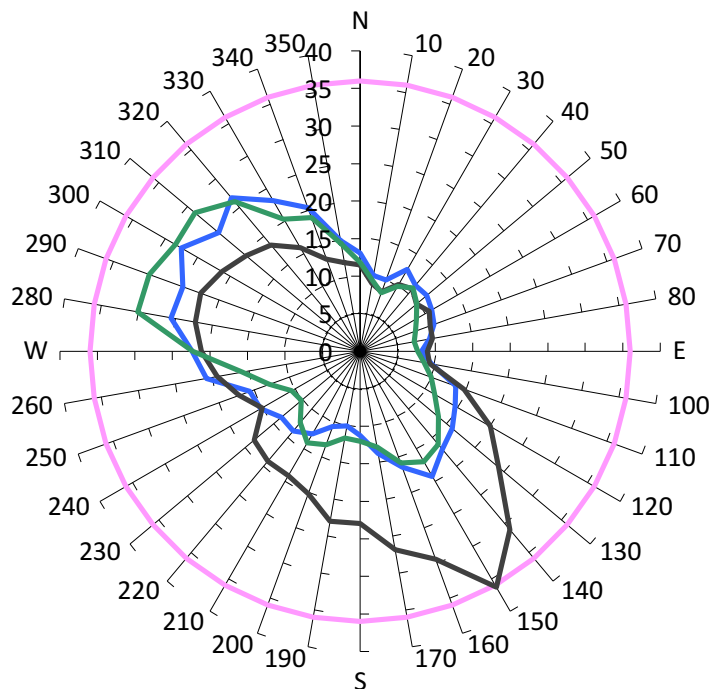
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

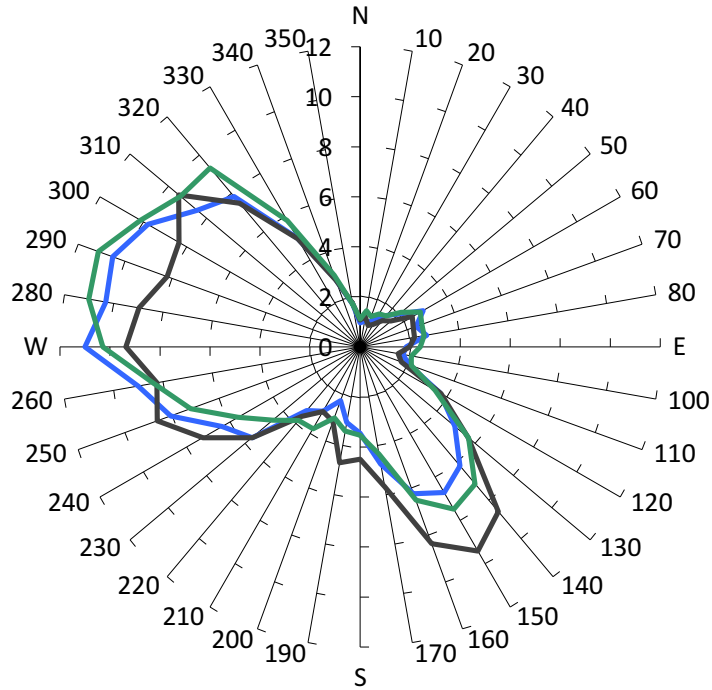


Desired Criterion

36mph

Measured Wind Speeds at Point 23

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

9%

Probability of Criterion
Exceedance (Proposed)

10%

Probability of Criterion
Exceedance (Cumulative)

12%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

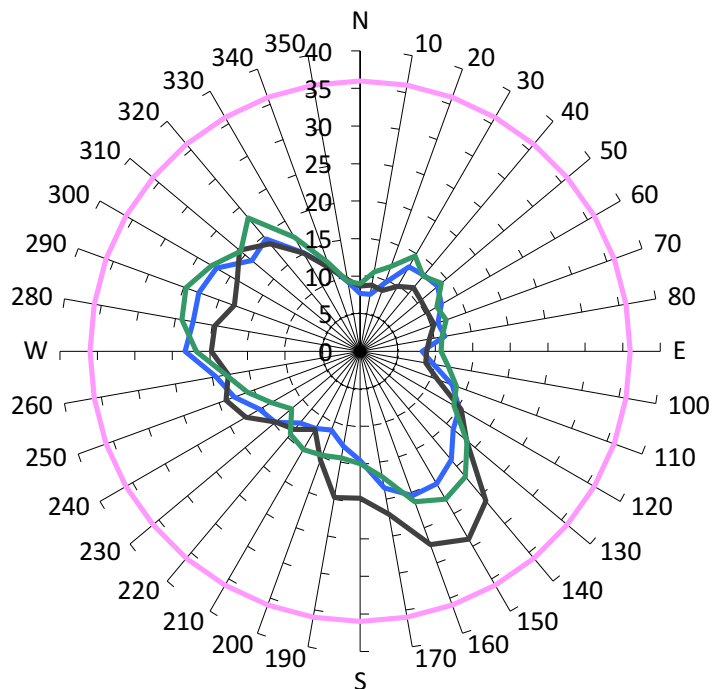
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

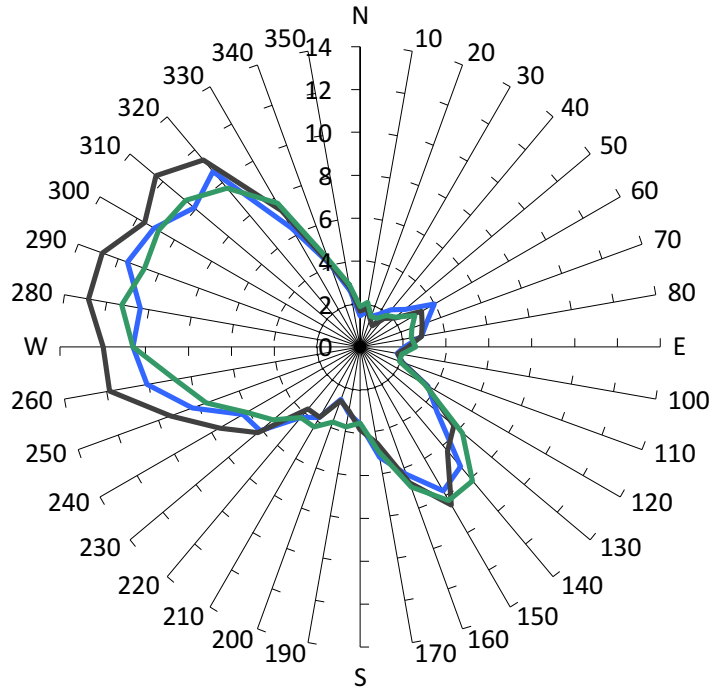


Desired Criterion

36mph

Measured Wind Speeds at Point 24

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

26%

Probability of Criterion
Exceedance (Proposed)

16%

Probability of Criterion
Exceedance (Cumulative)

16%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

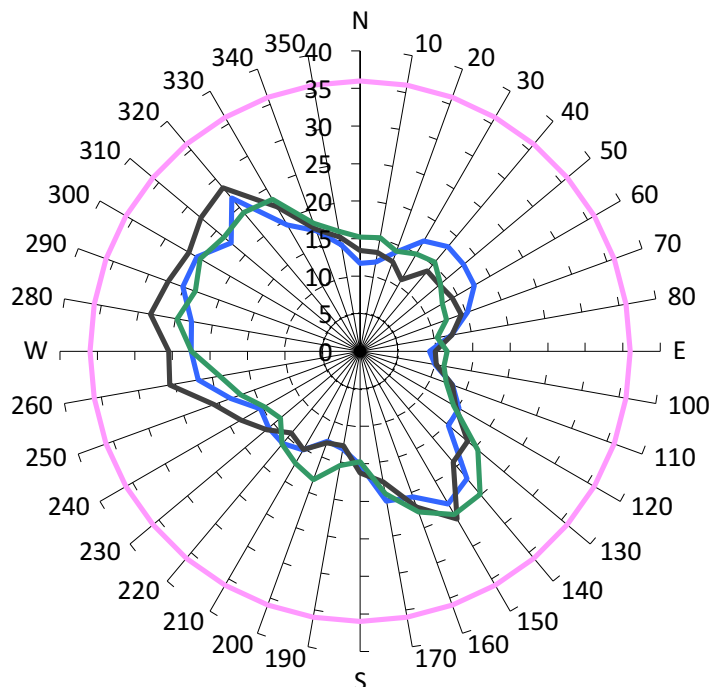
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

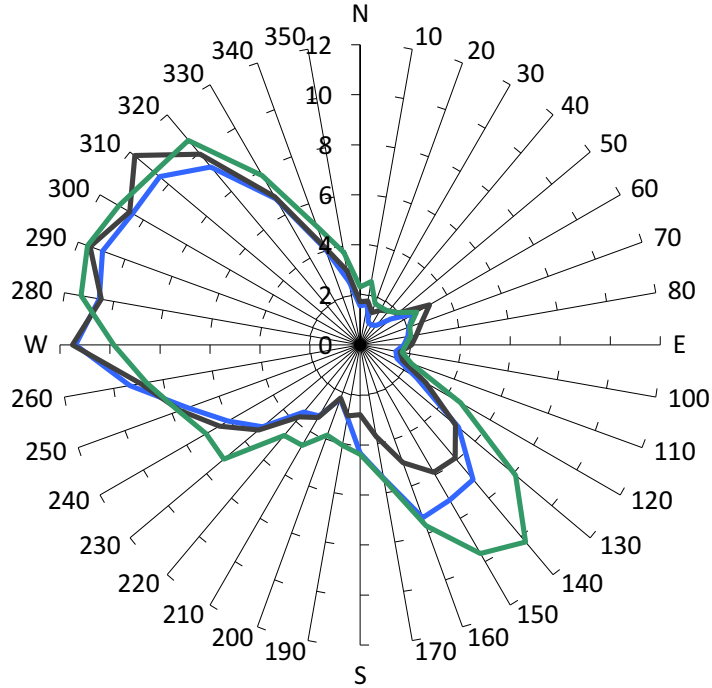


Desired Criterion

36mph

Measured Wind Speeds at Point 25

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

15%

Probability of Criterion
Exceedance (Proposed)

14%

Probability of Criterion
Exceedance (Cumulative)

20%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

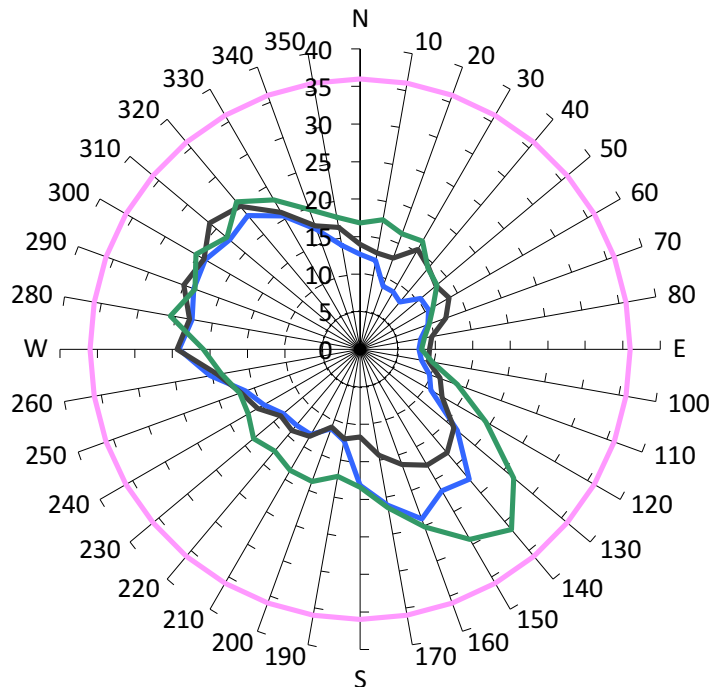
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

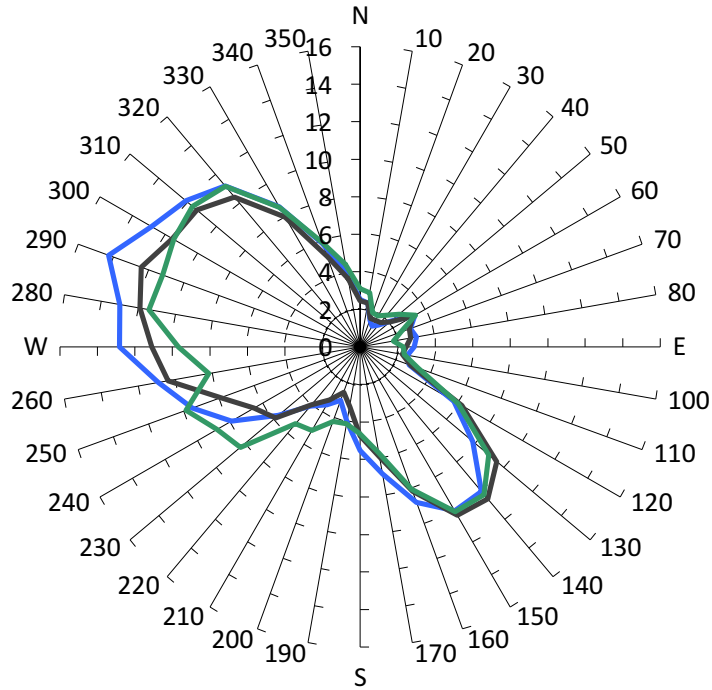


Desired Criterion

36mph

Measured Wind Speeds at Point 26

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

25%

Probability of Criterion
Exceedance (Proposed)

34%

Probability of Criterion
Exceedance (Cumulative)

25%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

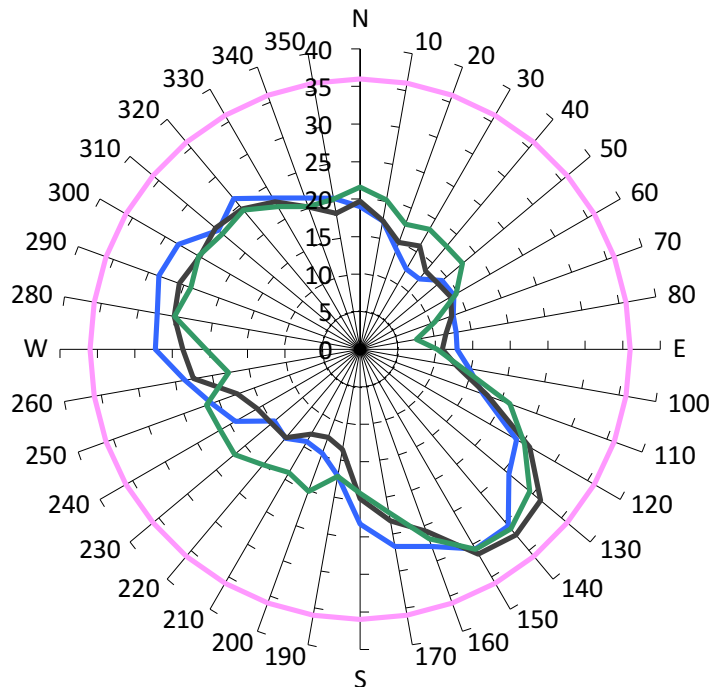
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

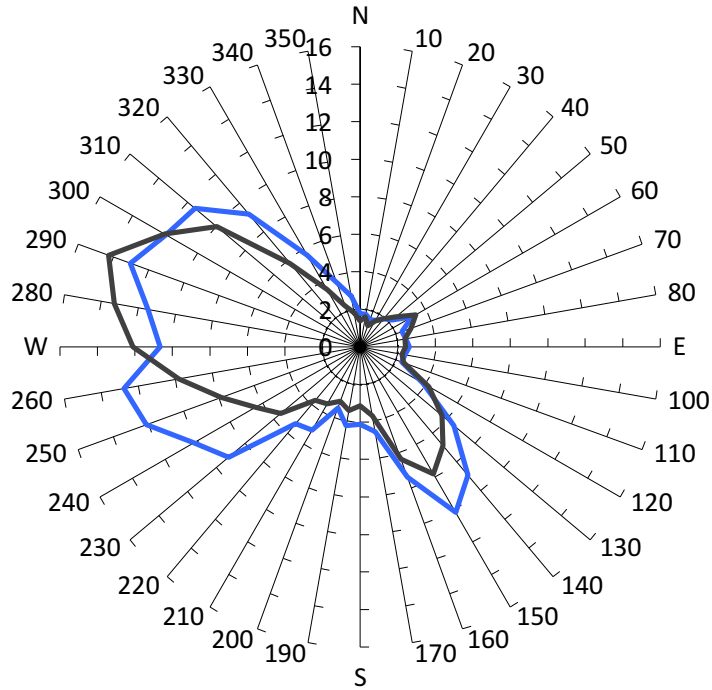


Desired Criterion

36mph

Measured Wind Speeds at Point 27

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

23%

Probability of Criterion
Exceedance (Proposed)

29%

Probability of Criterion
Exceedance (Cumulative)

N/A

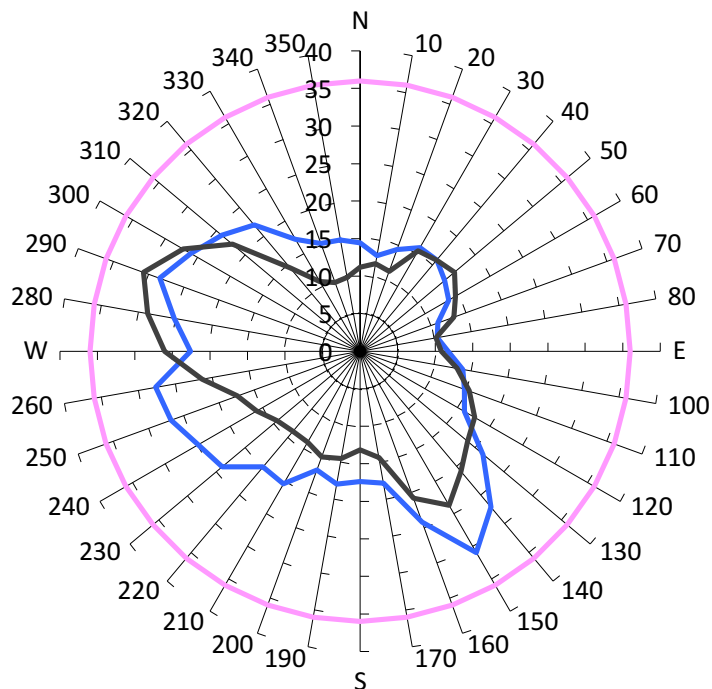
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Equivalent Wind Speed (mph)

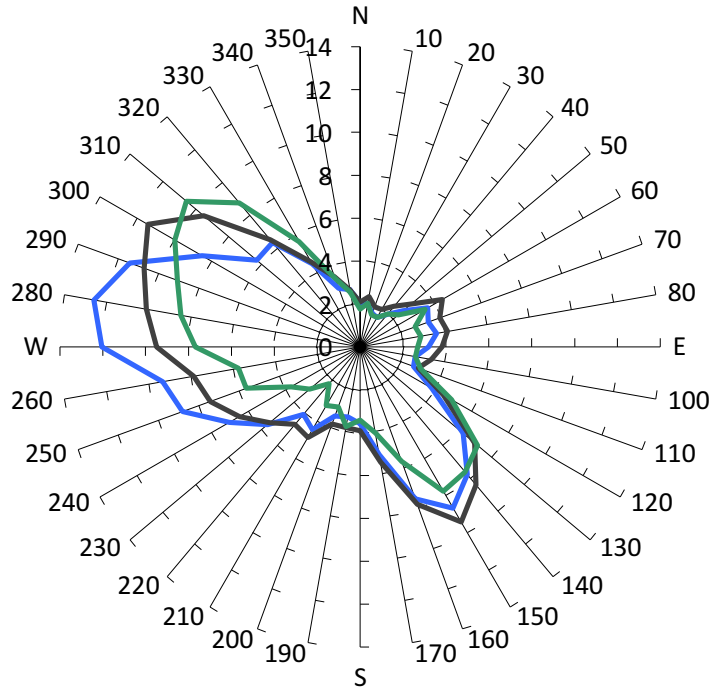


Desired Criterion

36mph

Measured Wind Speeds at Point 28

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

15%

Probability of Criterion
Exceedance (Proposed)

17%

Probability of Criterion
Exceedance (Cumulative)

9%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

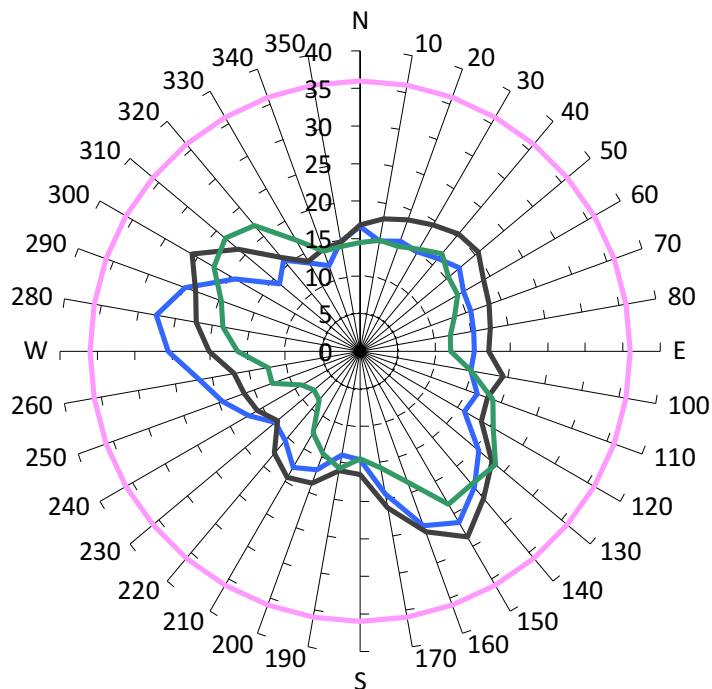
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

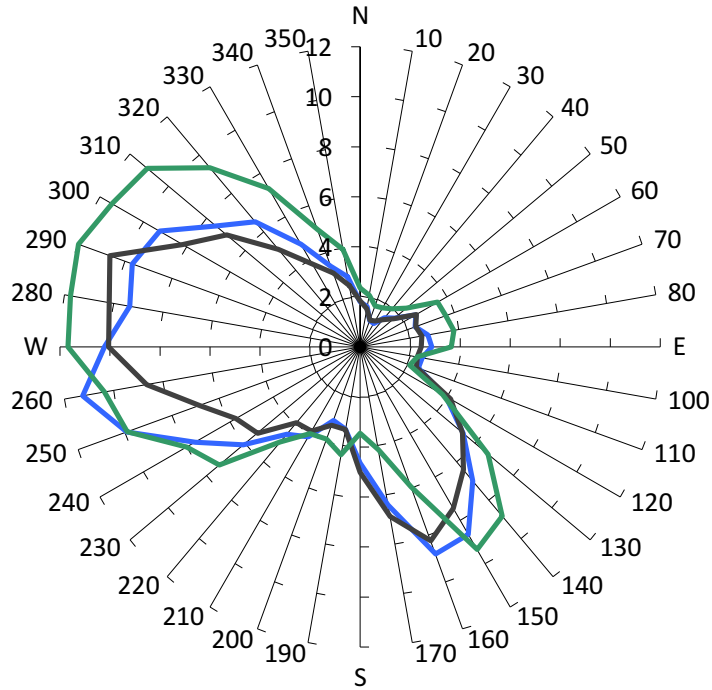


Desired Criterion

36mph

Measured Wind Speeds at Point 29

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

9%

Probability of Criterion
Exceedance (Proposed)

13%

Probability of Criterion
Exceedance (Cumulative)

23%

NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

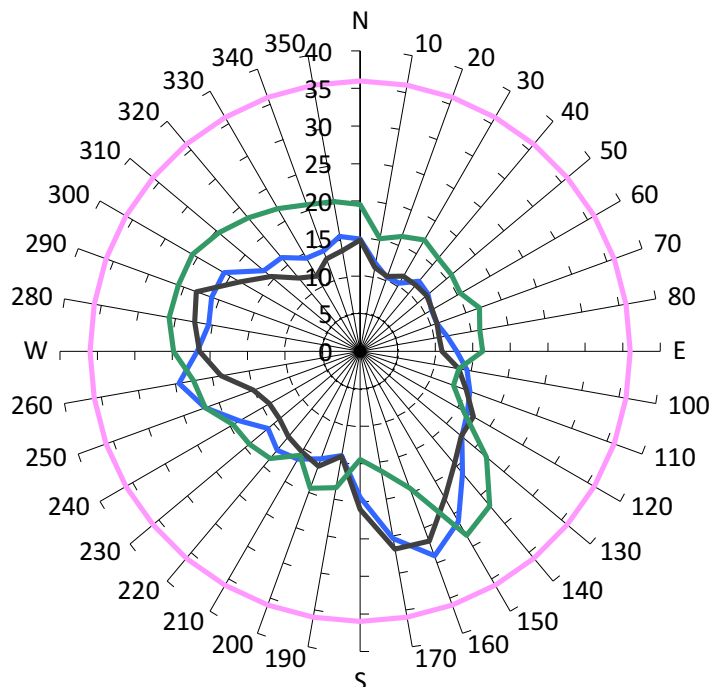
Criterion.

With development as proposed. No vegetation or other treatments.

Existing site conditions.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

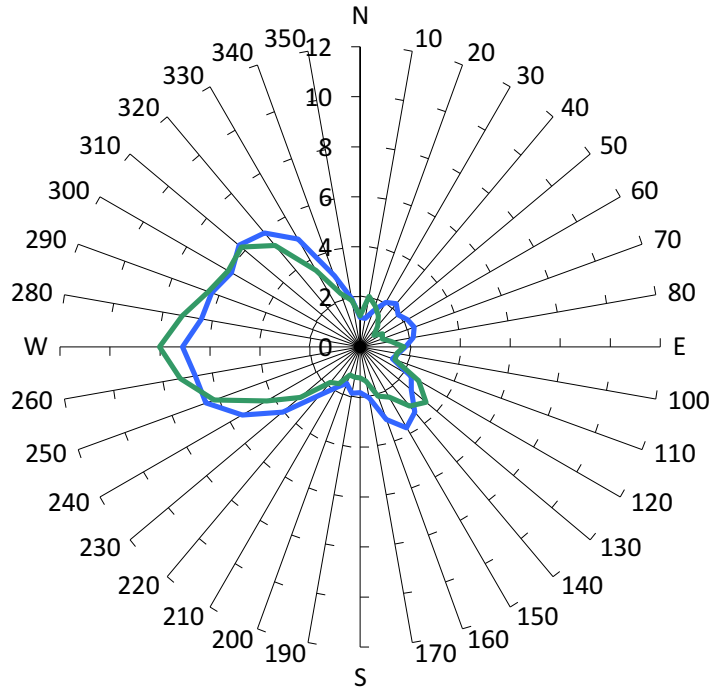


Desired Criterion

36mph

Measured Wind Speeds at Point 30

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

1%

Probability of Criterion
Exceedance (Cumulative)

1%

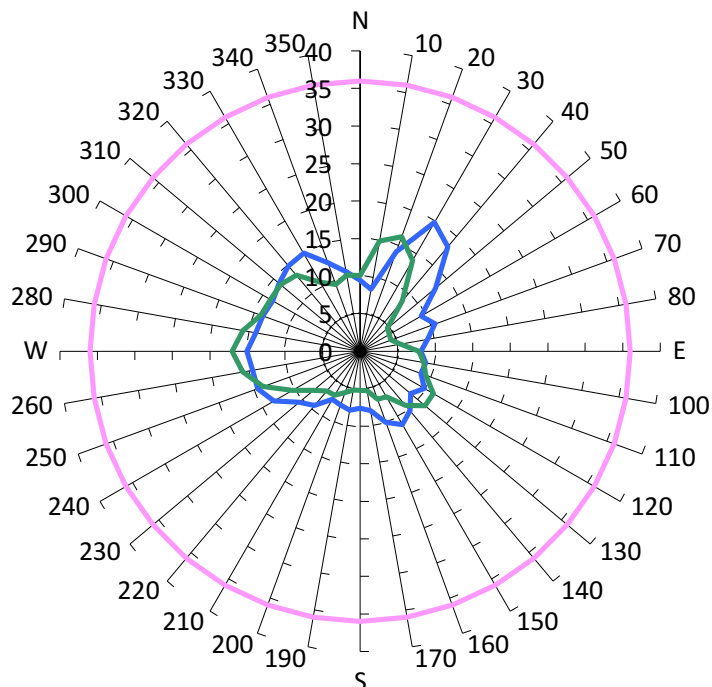
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

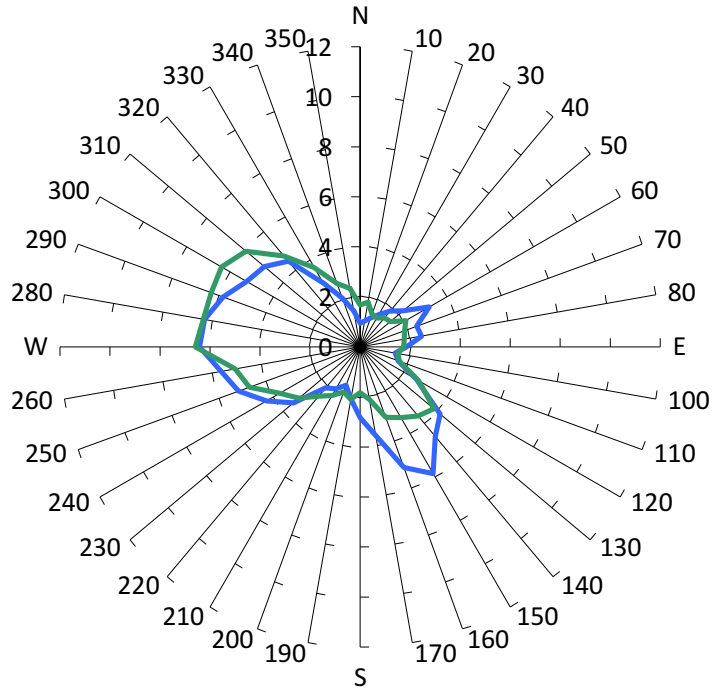


Desired Criterion

36mph

Measured Wind Speeds at Point 31

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

1%

Probability of Criterion
Exceedance (Cumulative)

1%

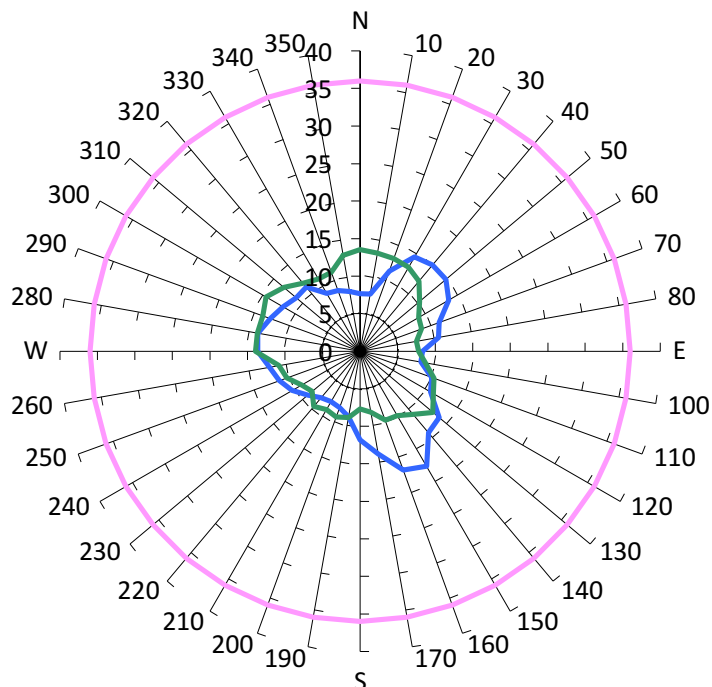
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

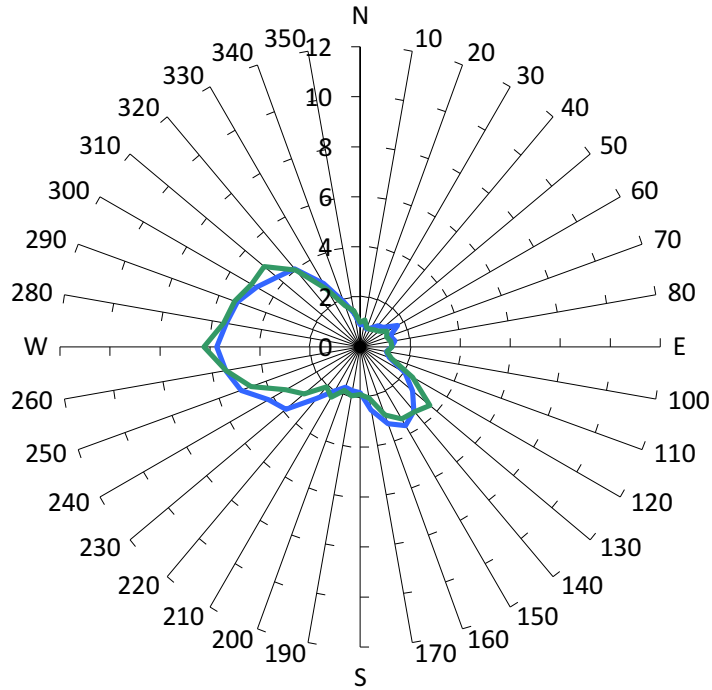


Desired Criterion

36mph

Measured Wind Speeds at Point 32

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

0%

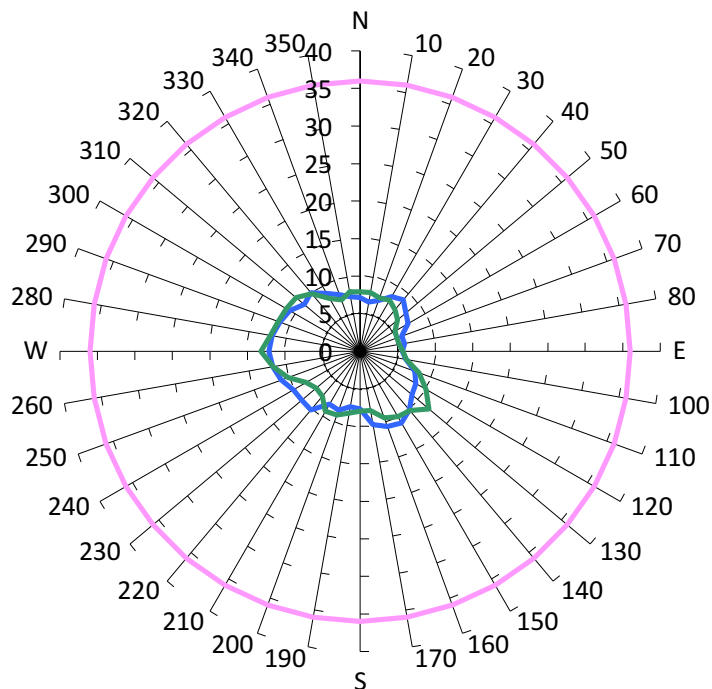
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

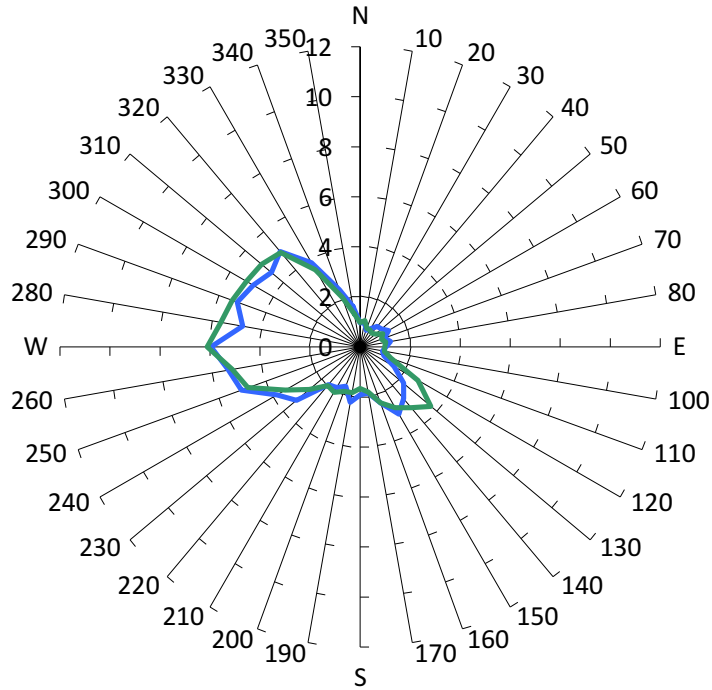


Desired Criterion

36mph

Measured Wind Speeds at Point 33

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

0%

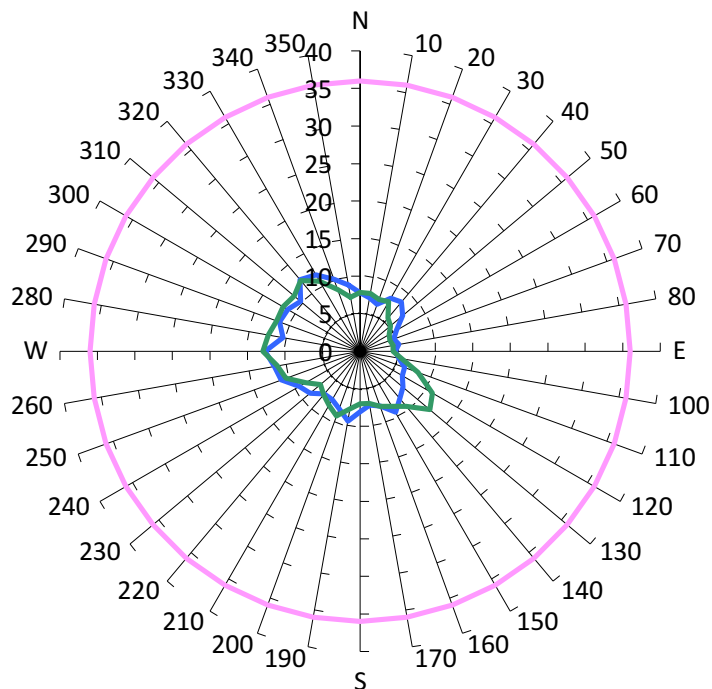
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

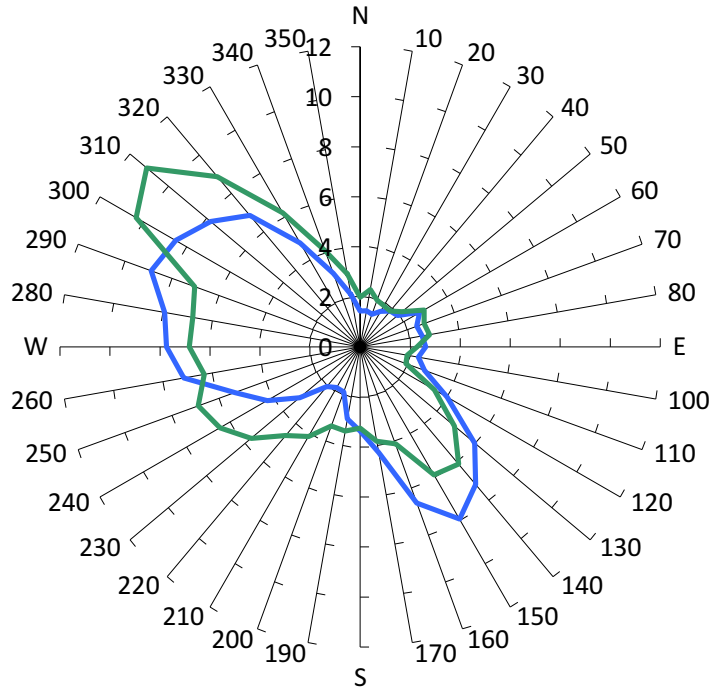


Desired Criterion

36mph

Measured Wind Speeds at Point 34

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedence
(existing site conditions)

N/A

Probability of Criterion
Exceedence (Proposed)

5%

Probability of Criterion
Exceedence (Cumulative)

7%

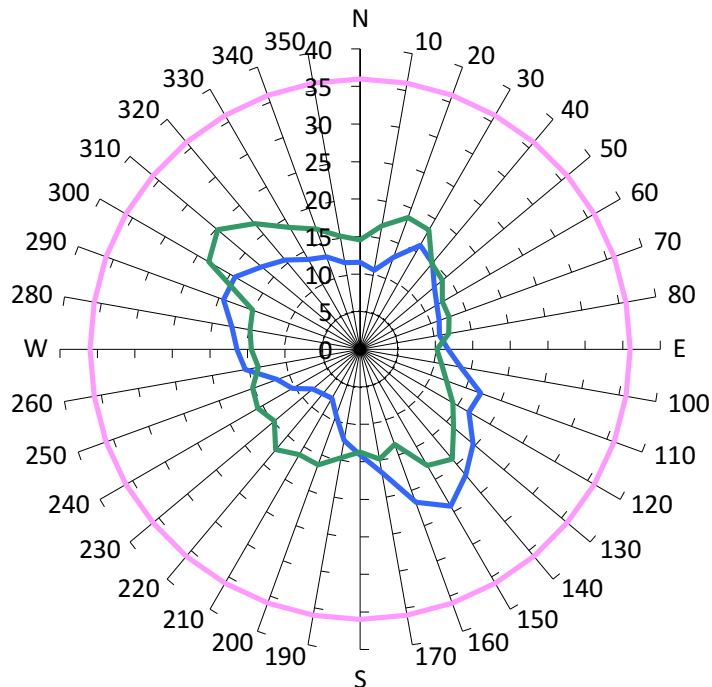
NOTE: The desired criterion is
exceeded if the probability of
exceedence is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

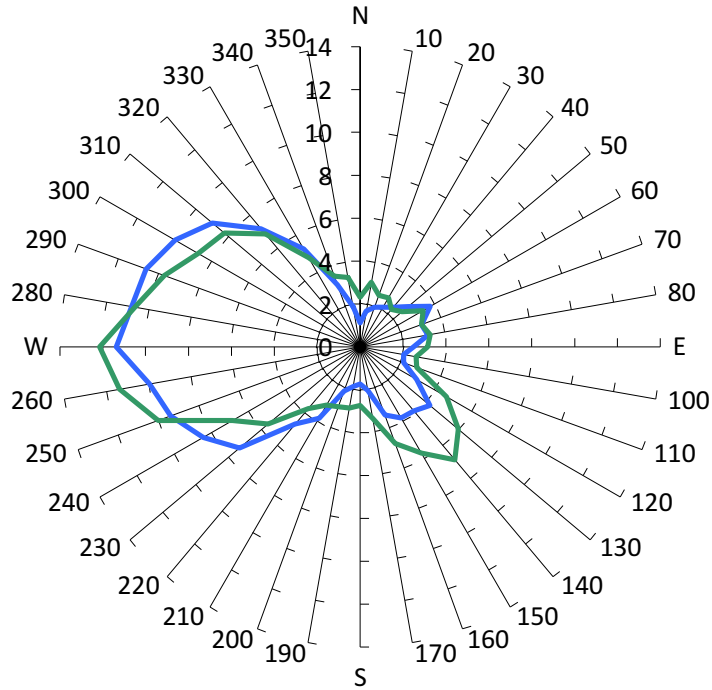


Desired Criterion

36mph

Measured Wind Speeds at Point 35

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

13%

Probability of Criterion
Exceedance (Cumulative)

15%

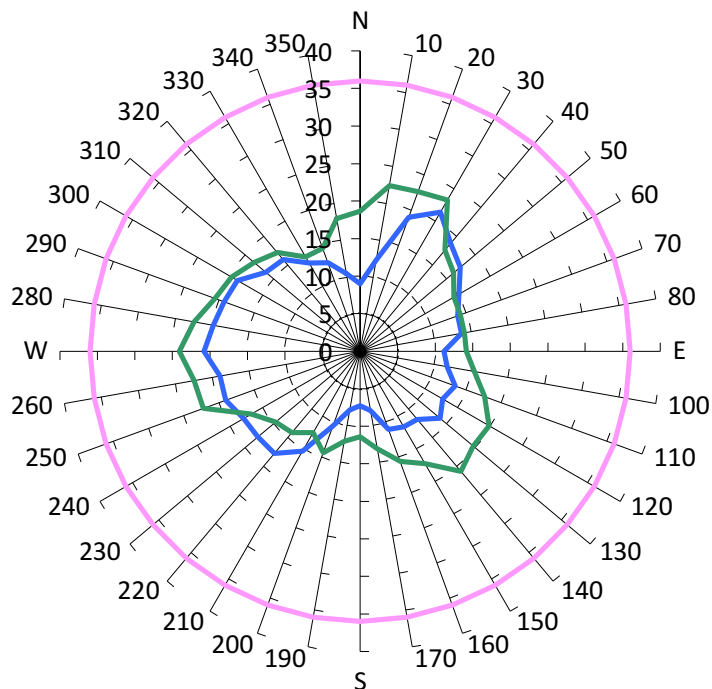
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

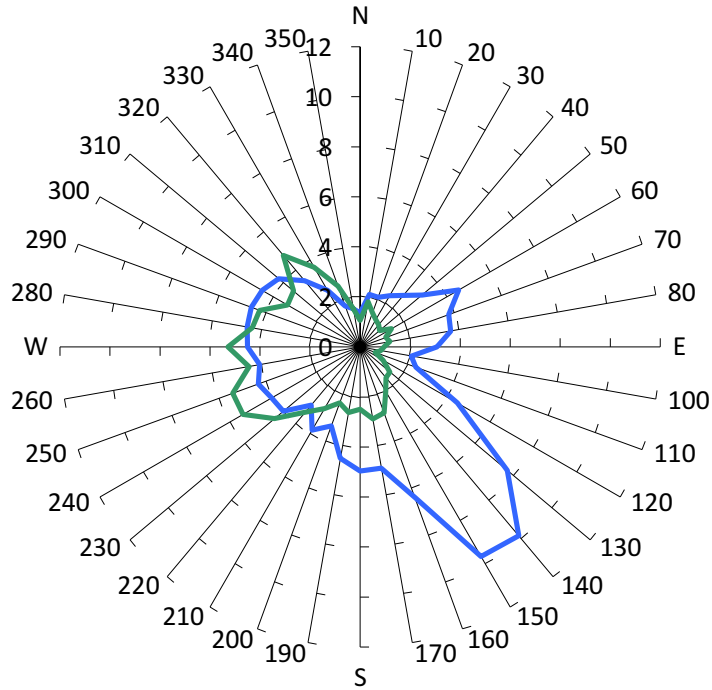


Desired Criterion

36mph

Measured Wind Speeds at Point 36

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

7%

Probability of Criterion
Exceedance (Cumulative)

0%

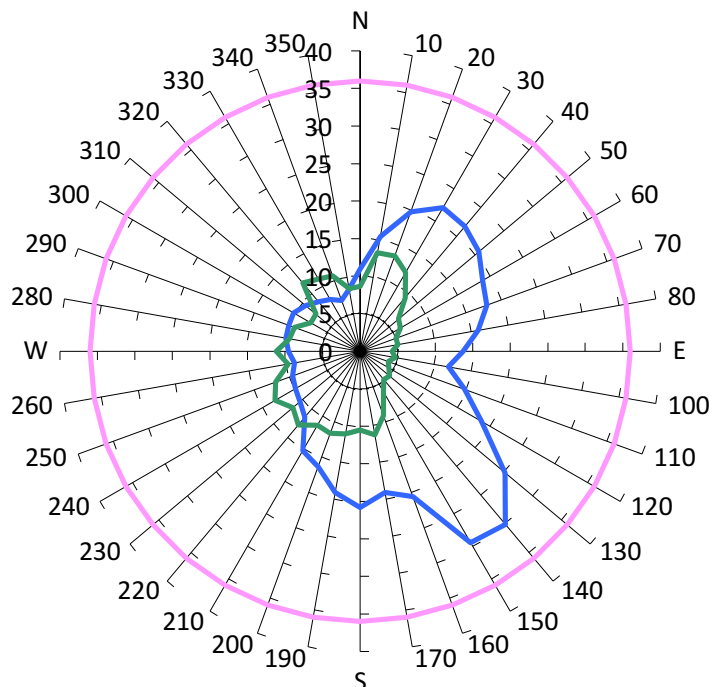
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

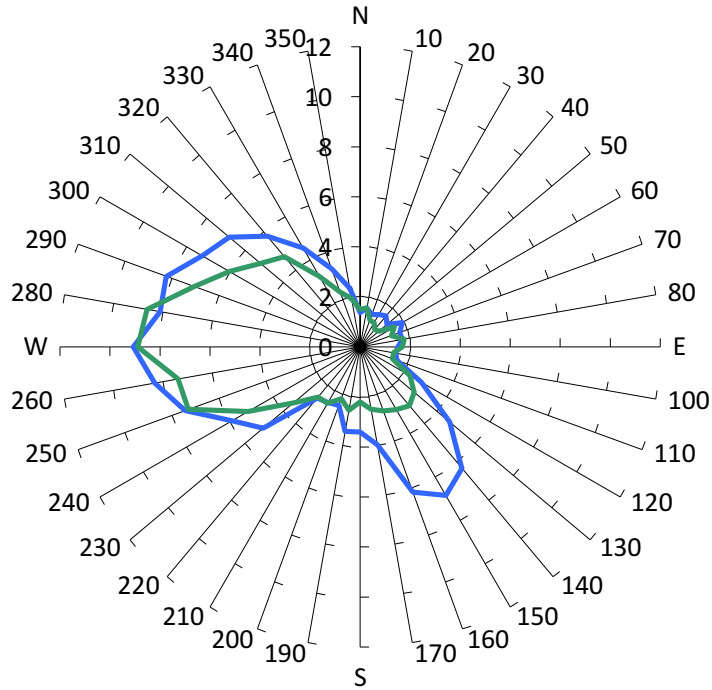


Desired Criterion

36mph

Measured Wind Speeds at Point 37

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

4%

Probability of Criterion
Exceedance (Cumulative)

2%

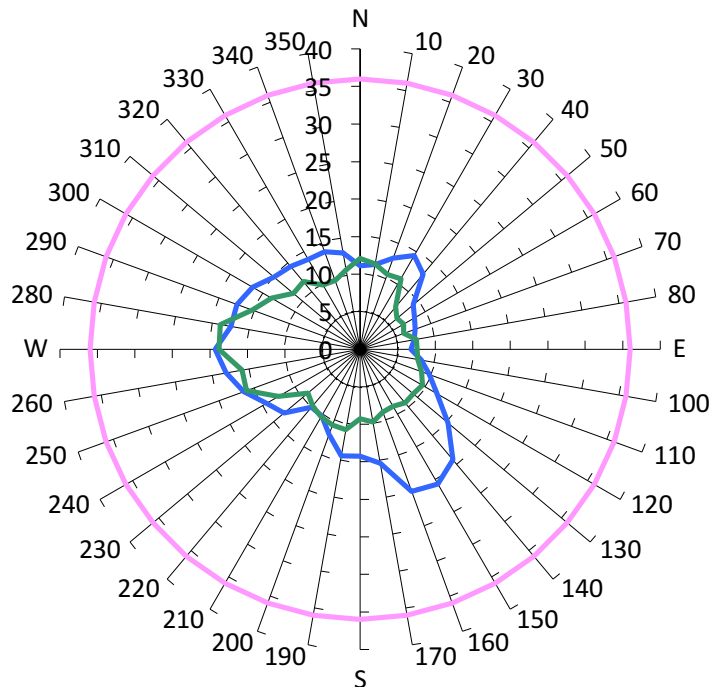
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

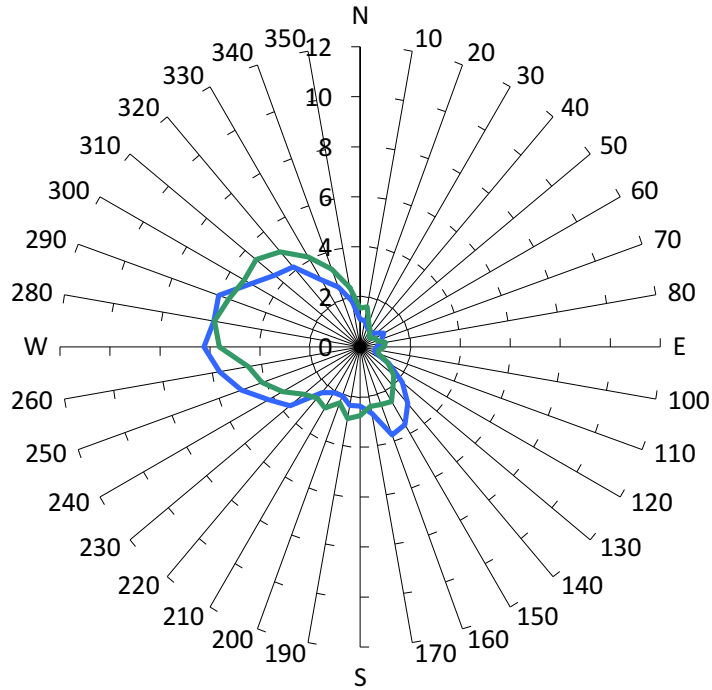


Desired Criterion

36mph

Measured Wind Speeds at Point 38

20% Exceedance Maximum GEM (mph)



Desired Criterion

11mph

Prob. of Criterion Exceedance
(existing site conditions)

N/A

Probability of Criterion
Exceedance (Proposed)

0%

Probability of Criterion
Exceedance (Cumulative)

0%

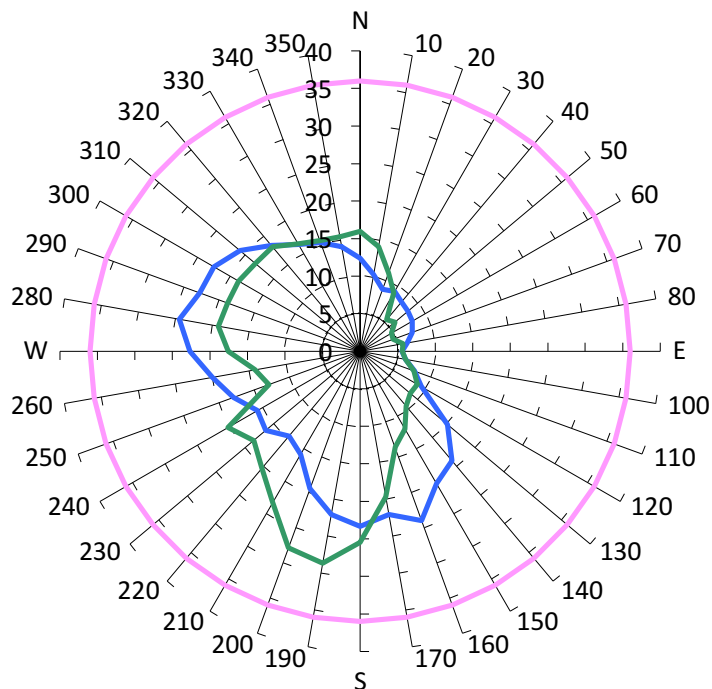
NOTE: The desired criterion is
exceeded if the probability of
exceedance is greater than
20%

Criterion.

With development as proposed. No vegetation or other treatments.

Proposed with cumulative scenario case

Equivalent Wind Speed (mph)

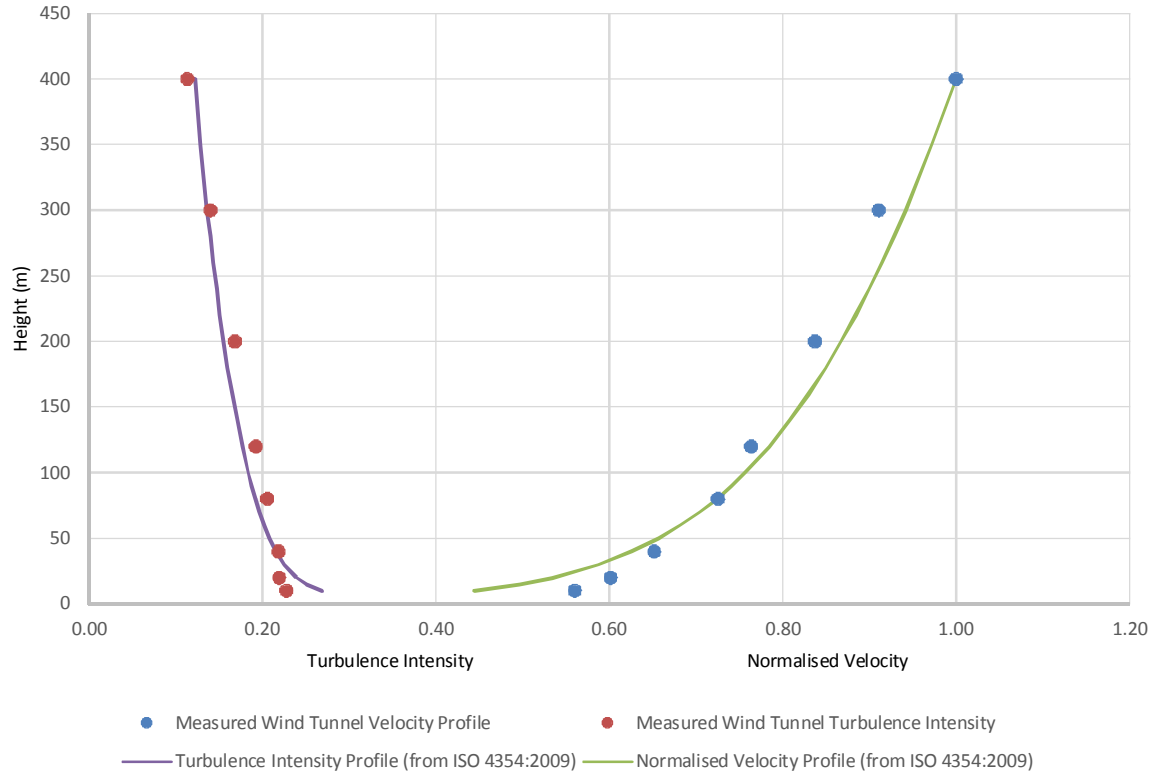


Desired Criterion

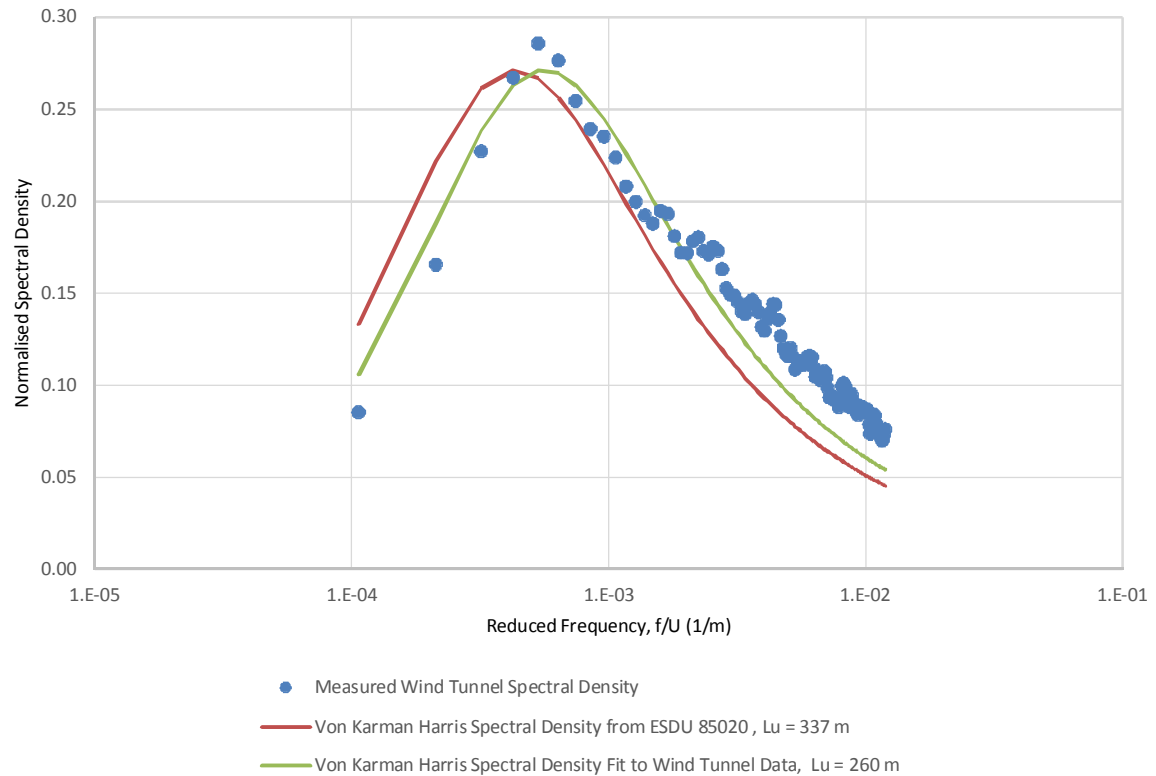
36mph

APPENDIX B - VELOCITY AND TURBULENCE INTENSITY PROFILES

Mean Velocity and Turbulence Intensity for Suburban Terrain (TC3) at a 1:400 Scale



Longitudinal Spectra Density for Suburban Terrain (TC3) at a 1:400 Scale



ATTACHMENT D: 2044 FRANKLIN ST. SHADOW STUDY

An aerial photograph of a city skyline, featuring a river at the top, a large park in the center, and several tall buildings. The image is in grayscale, with the text overlaid in blue and black.

2044 FRANKLIN STREET

SHADOW STUDY

August 25, 2017

OBJECTIVE

The objectives of this study were to illustrate the sun and shadow patterns for various times and dates and to determine the potential exposure to sunlight and shadow on and around the study site of 2044 Franklin Street, Oakland, CA

This study involved the use of a three-dimensional (3D) computer model of the project site with the existing surroundings and the proposed development in place. The 3D model was used to produce renderings of the shadows cast around the project site by the proposed development. The following report provides a discussion of the methodology and graphic results of the Sun-Shadow Study.

IMAGE 1

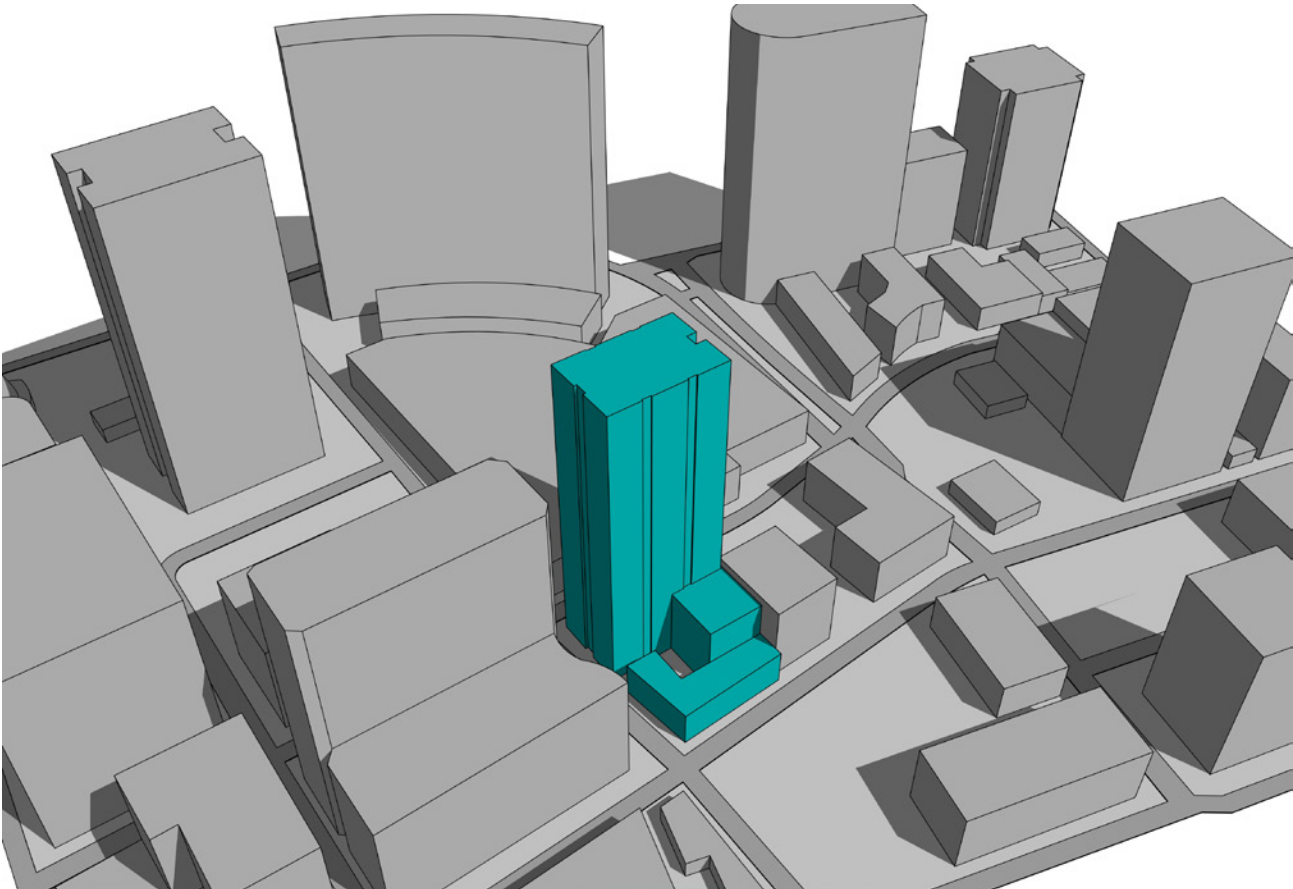


Image 1: 3d-model of the proposed project-view from northwest

BUILDING AND SITE INFORMATION

The proposed development would be located on the corner Franklin Street and 21st Street, in Oakland, California. The development would be a 29-story tower rising to a height of 362 ft, that includes a five-story podium rising to a height of 77 ft.

Image 1: 3D model of the project.

Image 2: An aerial view of the site and its immediate surroundings. Currently the site at 2044 Franklin Street contains a 2 story commercial building.

IMAGE 2



Image 2: Aerial View of site and Surroundings

METHODOLOGY

The CAD generated 3D model was incorporated into a computer graphics program with the appropriate settings to simulate the geographic characteristics and solar angles for Oakland. The computer generated renderings exhibit the simulated shadow conditions anticipated to occur in the vicinity of the study site. The tests conducted in this study assume bright sunlight from sunrise to sunset, in order to properly identify shadow patterns created by the proposed structure.

Table 1: This table identifies the dates and times shadow conditions were simulated. The times listed are either Pacific Standard Time (PST) or Pacific Daylight Saving Time (PDT), whichever is in effect on the dates specified.

Table 2: The approximate sunrise and sunset times for the four days of the year studied are included in Table 2 as they may be of interest when assessing the shadow conditions.

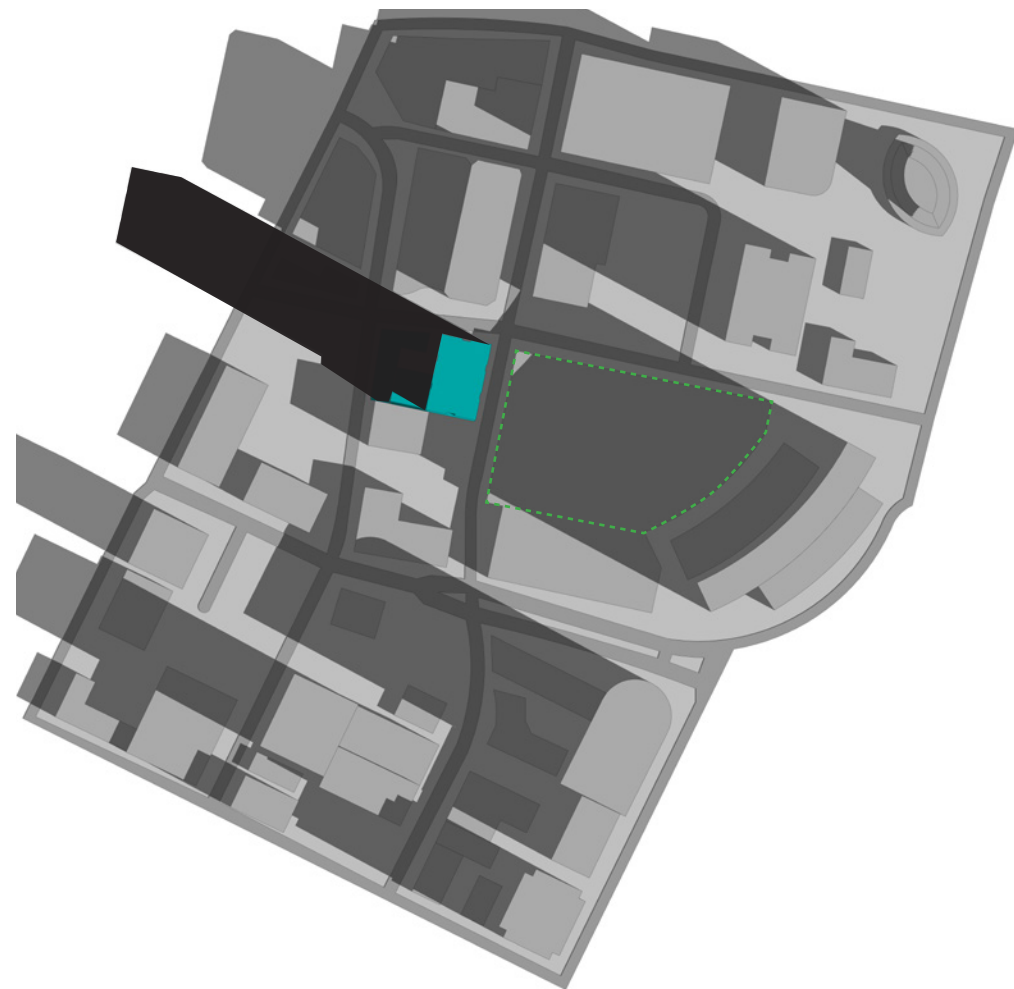
Table 1: Dates and Times Studied

Date	Time of Study		
March 21st (PDT)	9:00 am	12:00 pm	5:00 pm
June 21st (PDT)	9:00 am	12:00 pm	5:00 pm
September 21st (PDT)	9:00 am	12:00 pm	5:00 pm
December 21st (PST)	9:00 am	12:00 pm	3:00 pm

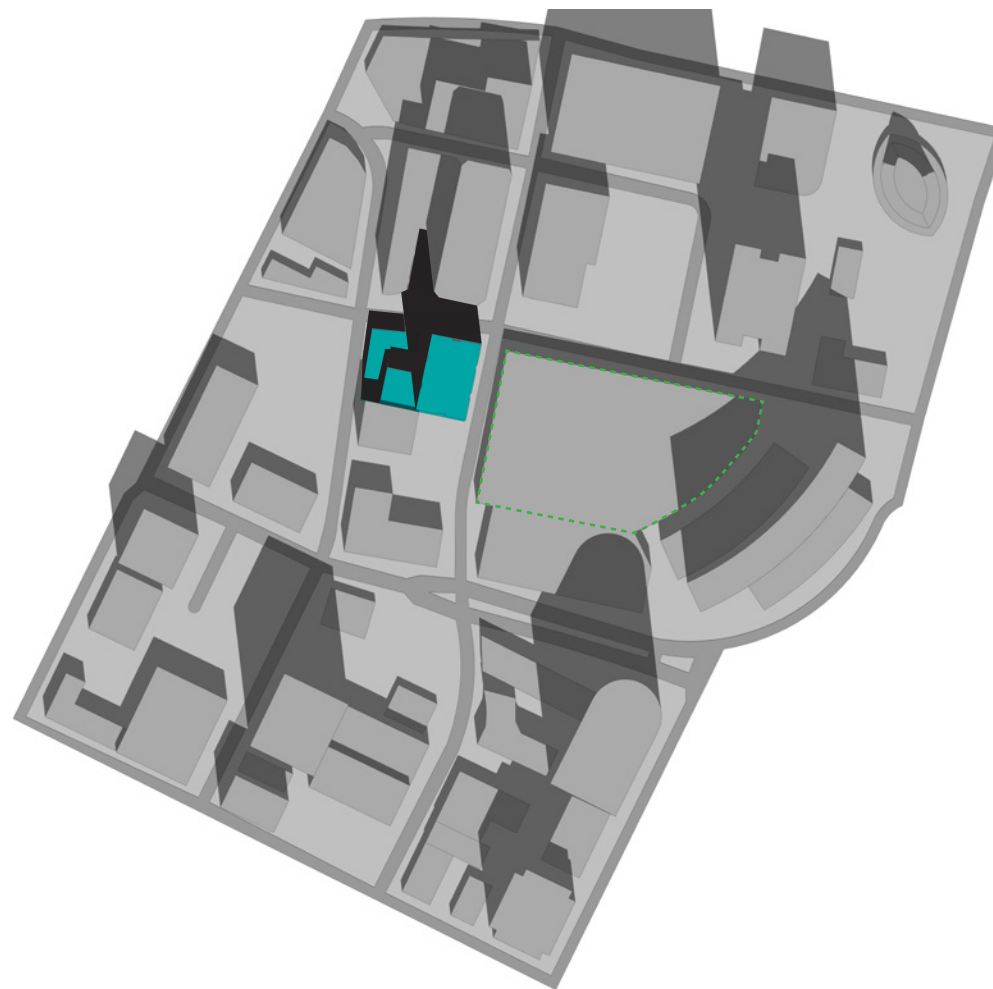
Table 2: Approximate Sunrise and Sunset Times

Date	Sunrise	Sunset
March 21st (PDT)	7:10 am	7:20 pm
June 21st (PDT)	5:50 am	8:35 pm
September 21st (PDT)	6:55 am	7:10 pm
December 21st (PST)	7:20 am	4:55 pm

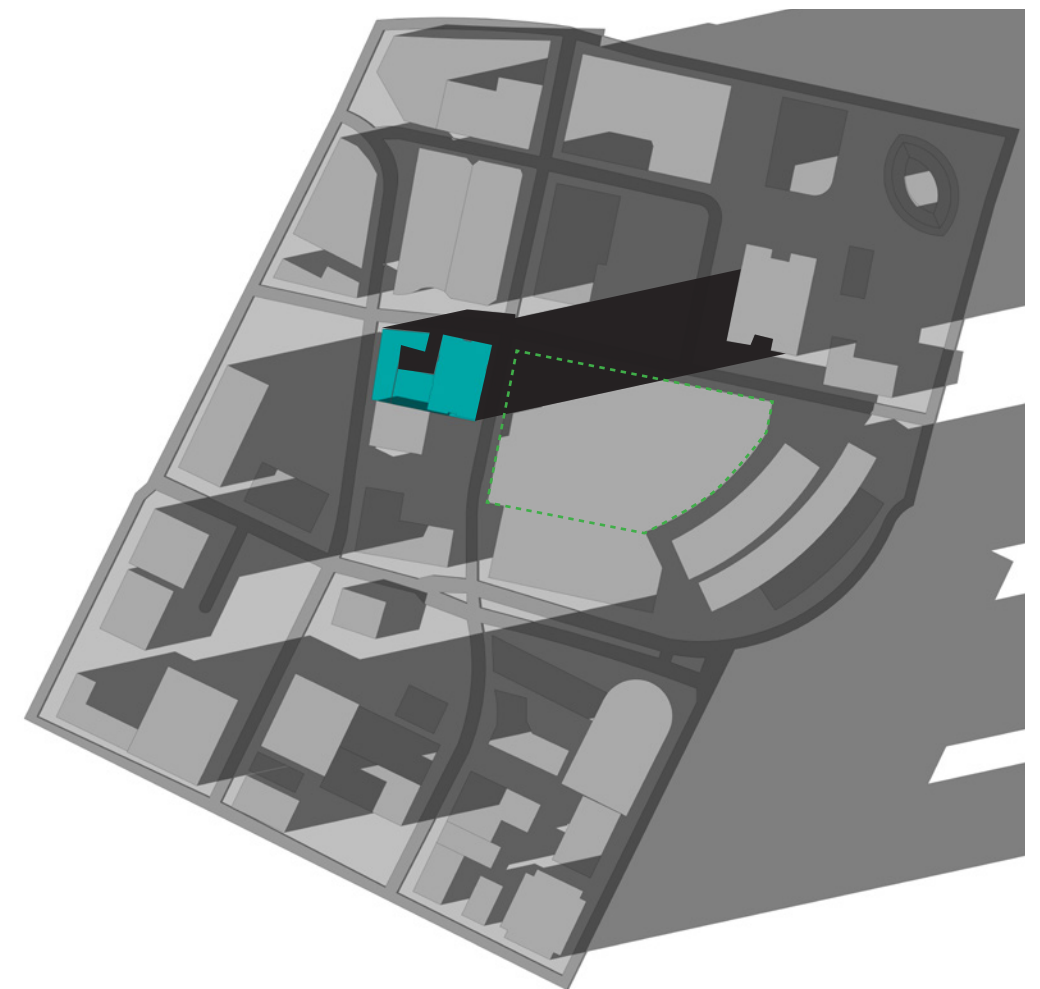
01 MARCH 21st (PDT) *Spring Equinox*



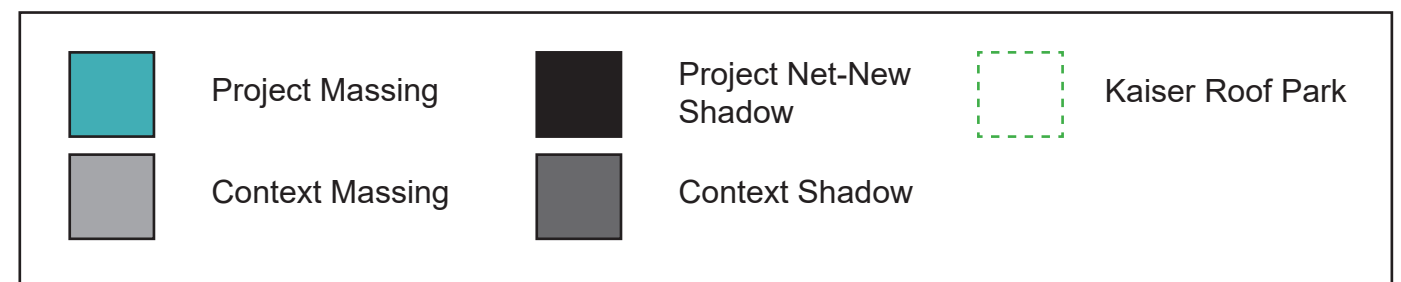
9:00 am (PDT)



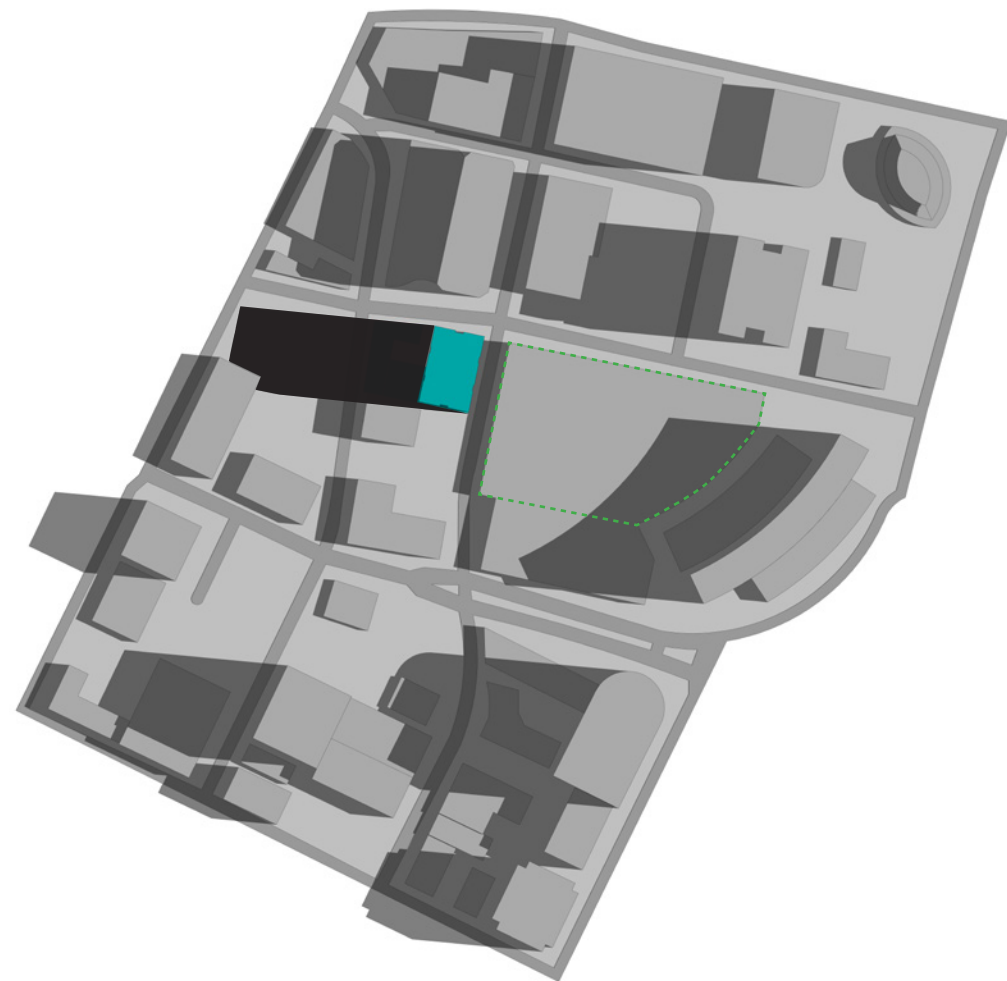
12:00 pm (PDT)



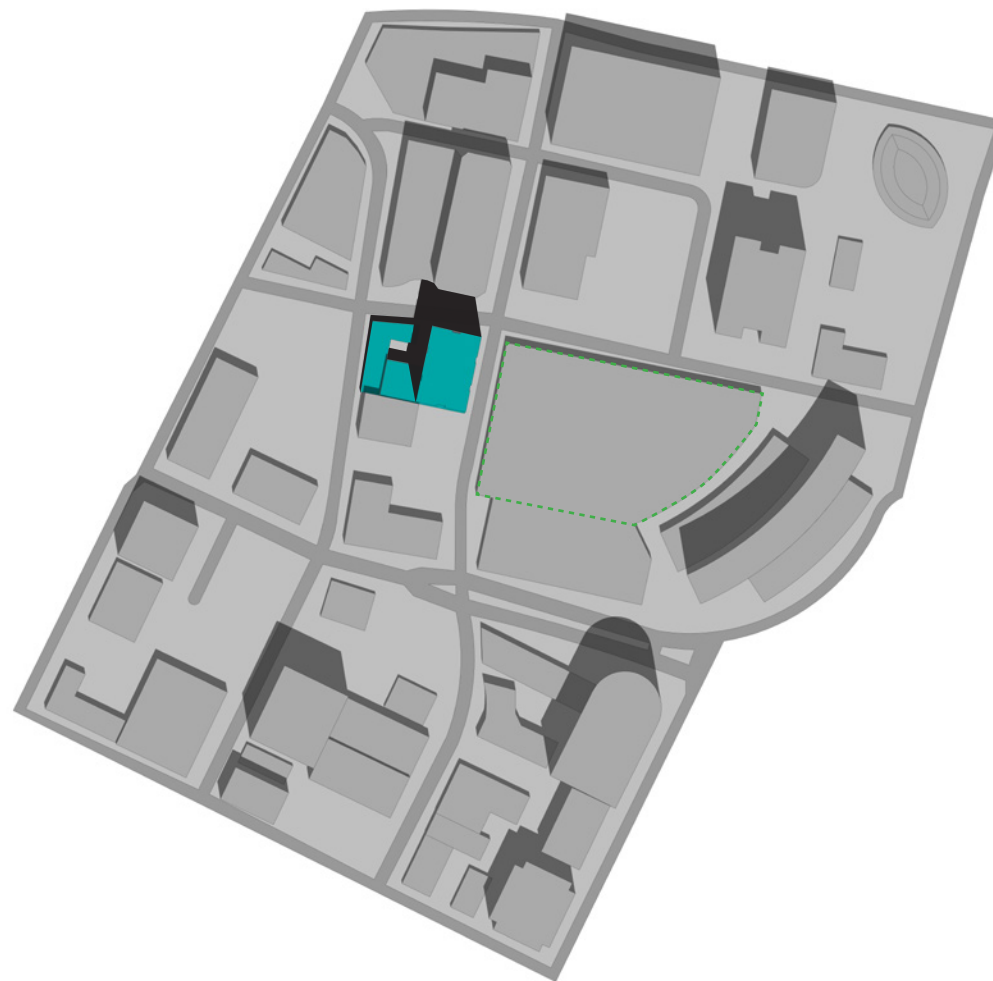
5:00 pm (PDT)



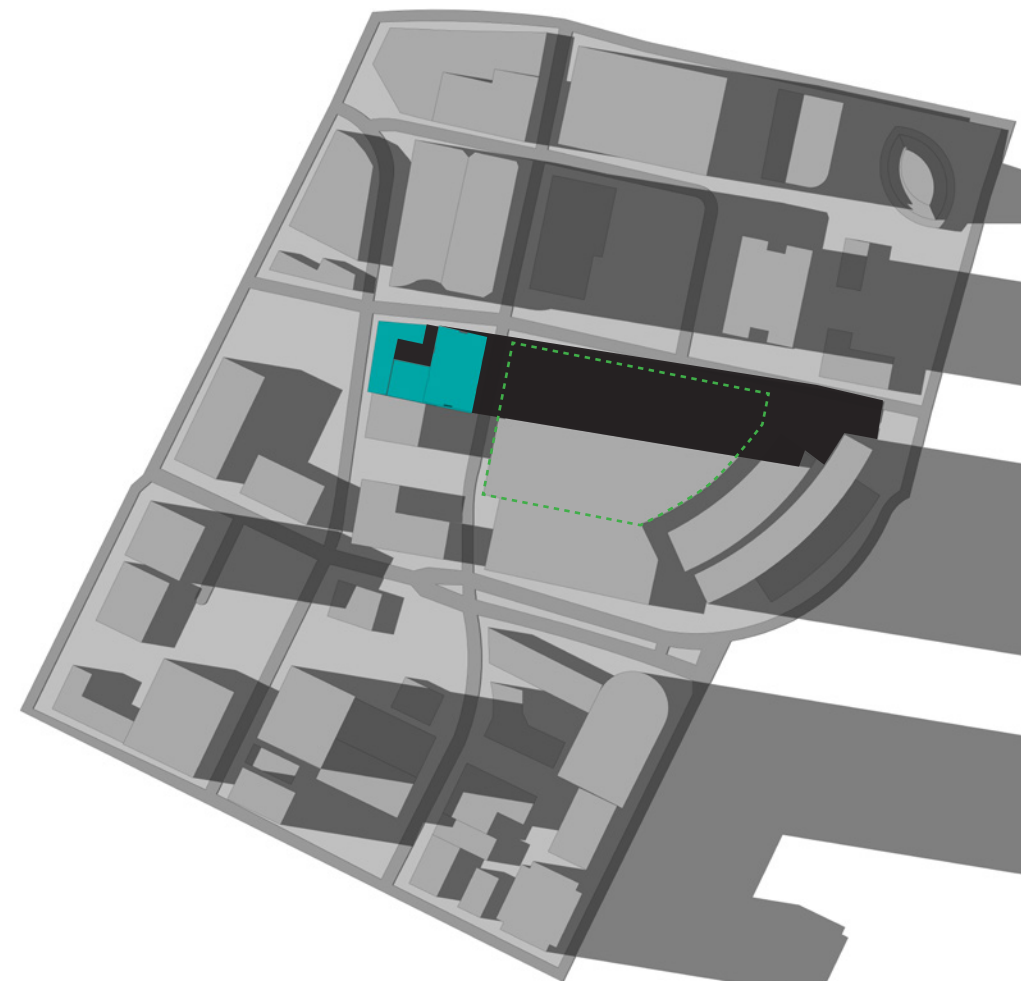
02 JUNE 21st (PDT) *Summer Solstice*



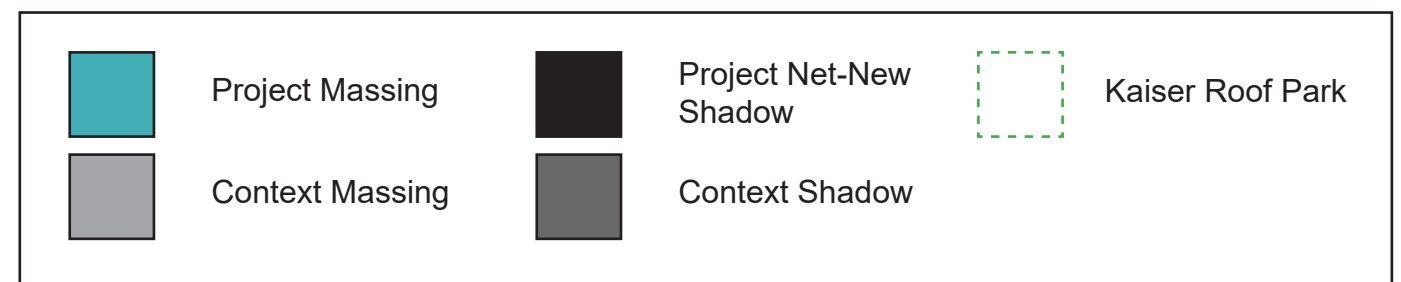
9:00 am (PDT)



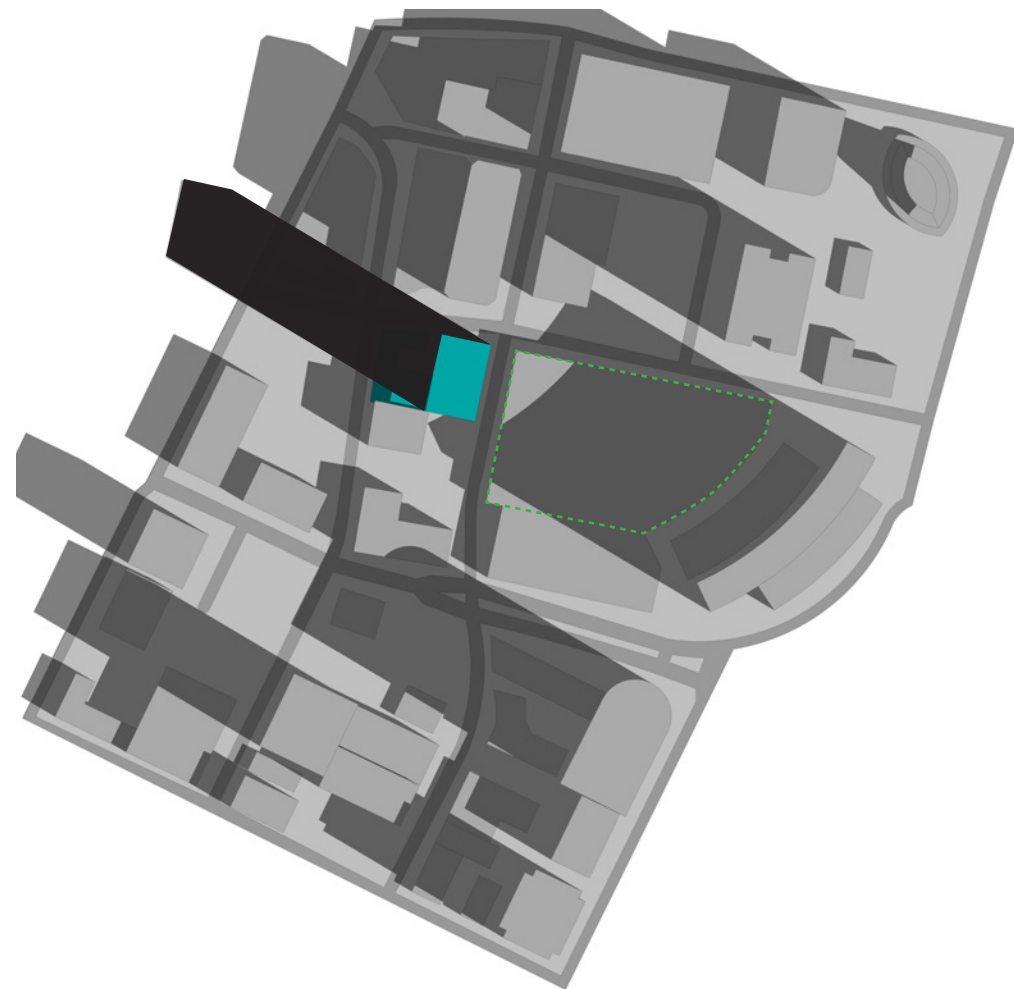
12:00 pm (PDT)



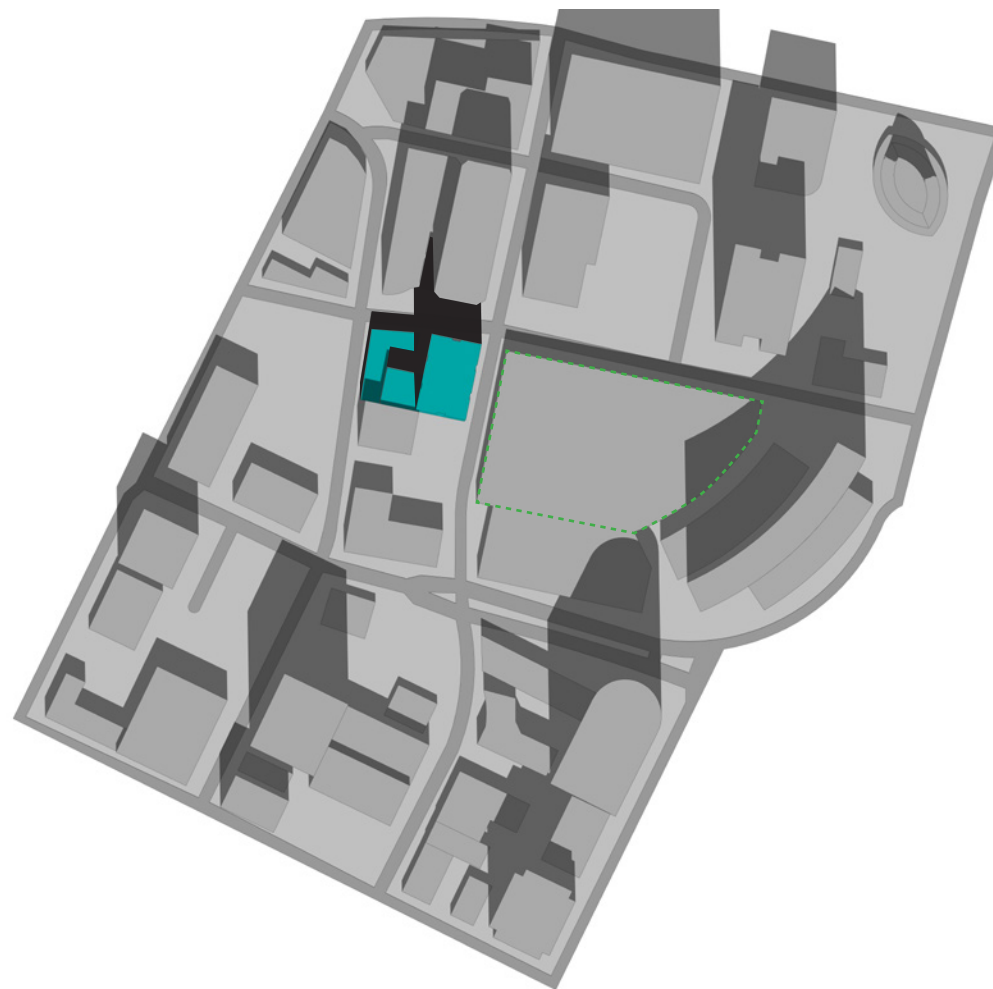
5:00 pm (PDT)



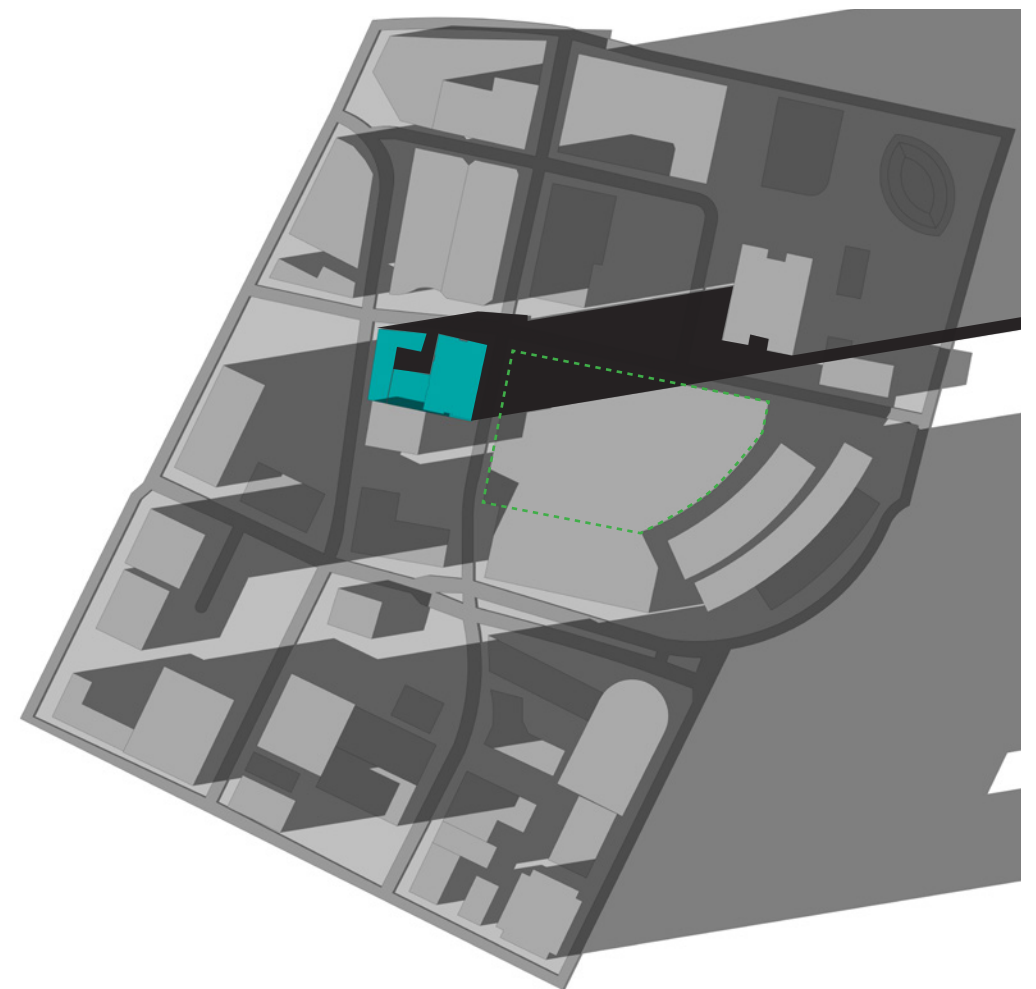
03 SEPTEMBER 21st (PDT) *Autumnal Equinox*



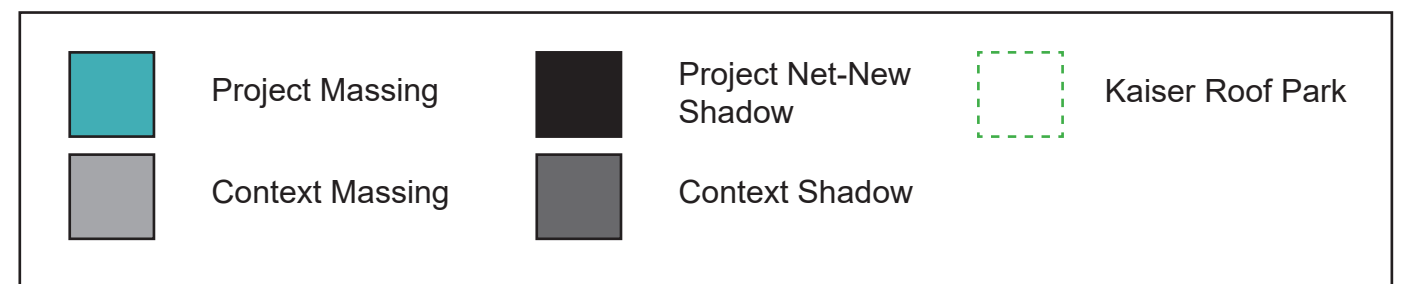
9:00 am (PDT)



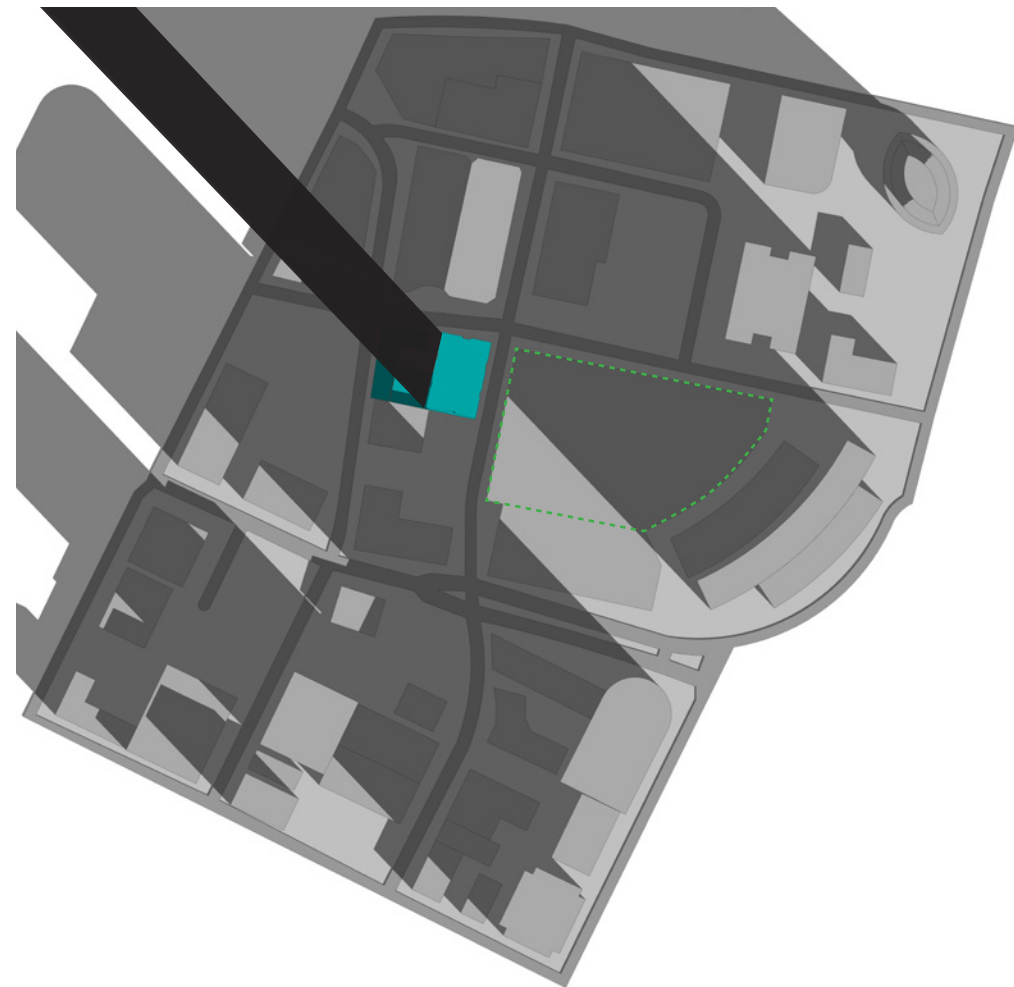
12:00 pm (PDT)



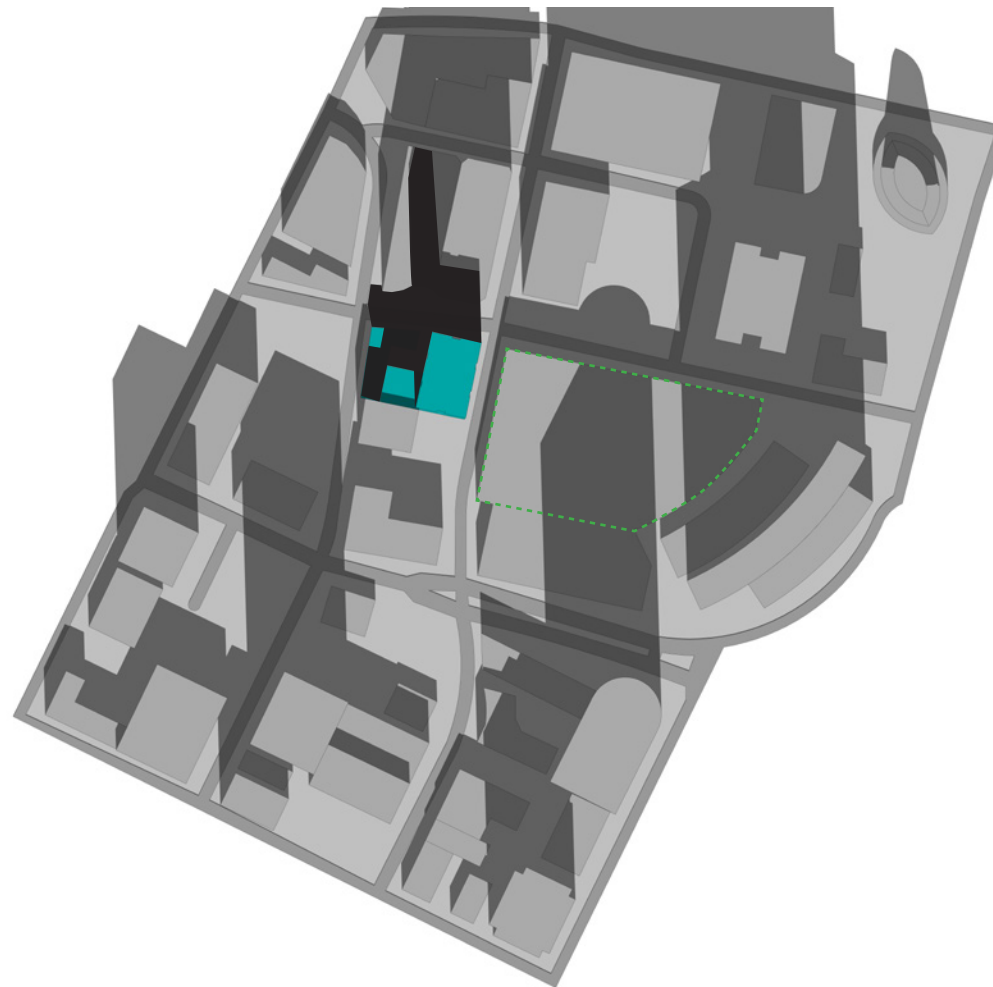
5:00 pm (PDT)



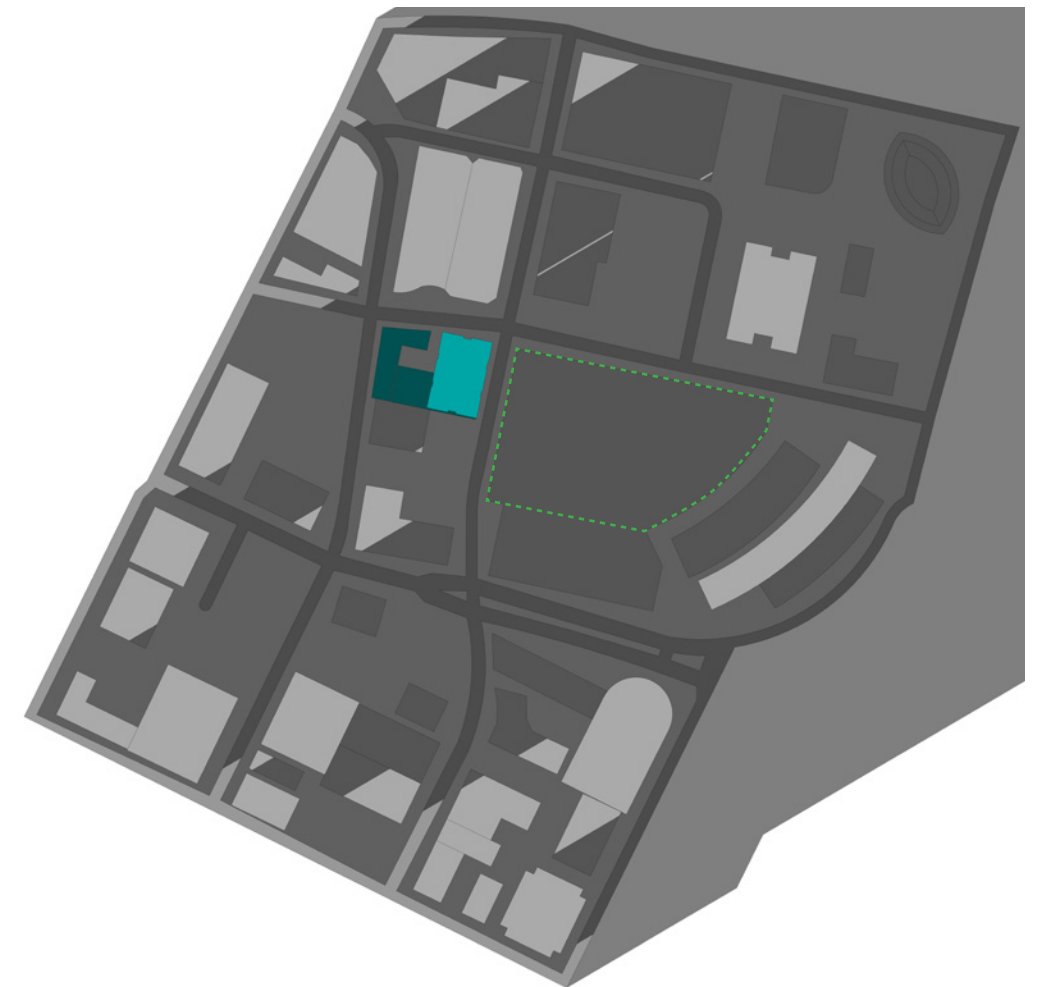
04 DECEMBER 21st (PST) *Winter Solstice*



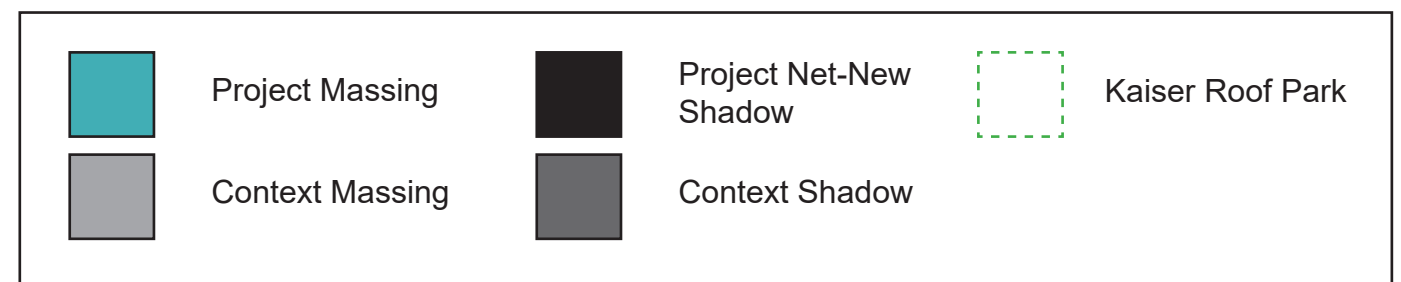
9:00 am (PST)



12:00 pm (PST)



3:00 pm (PST)



05 SHADOW STUDY ON KAISER CENTER ROOF PARK

Under City of Oakland thresholds of significance, a project would have a significant 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 or open space; 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.

The Roof Park at Kaiser Center was designed in 1960 by Osmundson & Staley. At the time it opened the 3 acre park was the largest roof park in the U.S. It is located directly east from the subject property above a three story parking structure and is open to the public.

As defined by the City of Oakland, a new project would have significant impact if "it were to cast a shadow that substantially impairs the **beneficial use** of any public or quasi-public park or open space" Based on this criteria, a shadow analysis was conducted to determine the extent to which the proposed project would affect the roof park during its **public use hours of 8am to 6pm** on Monday through Friday during the dates specified in Table 1.

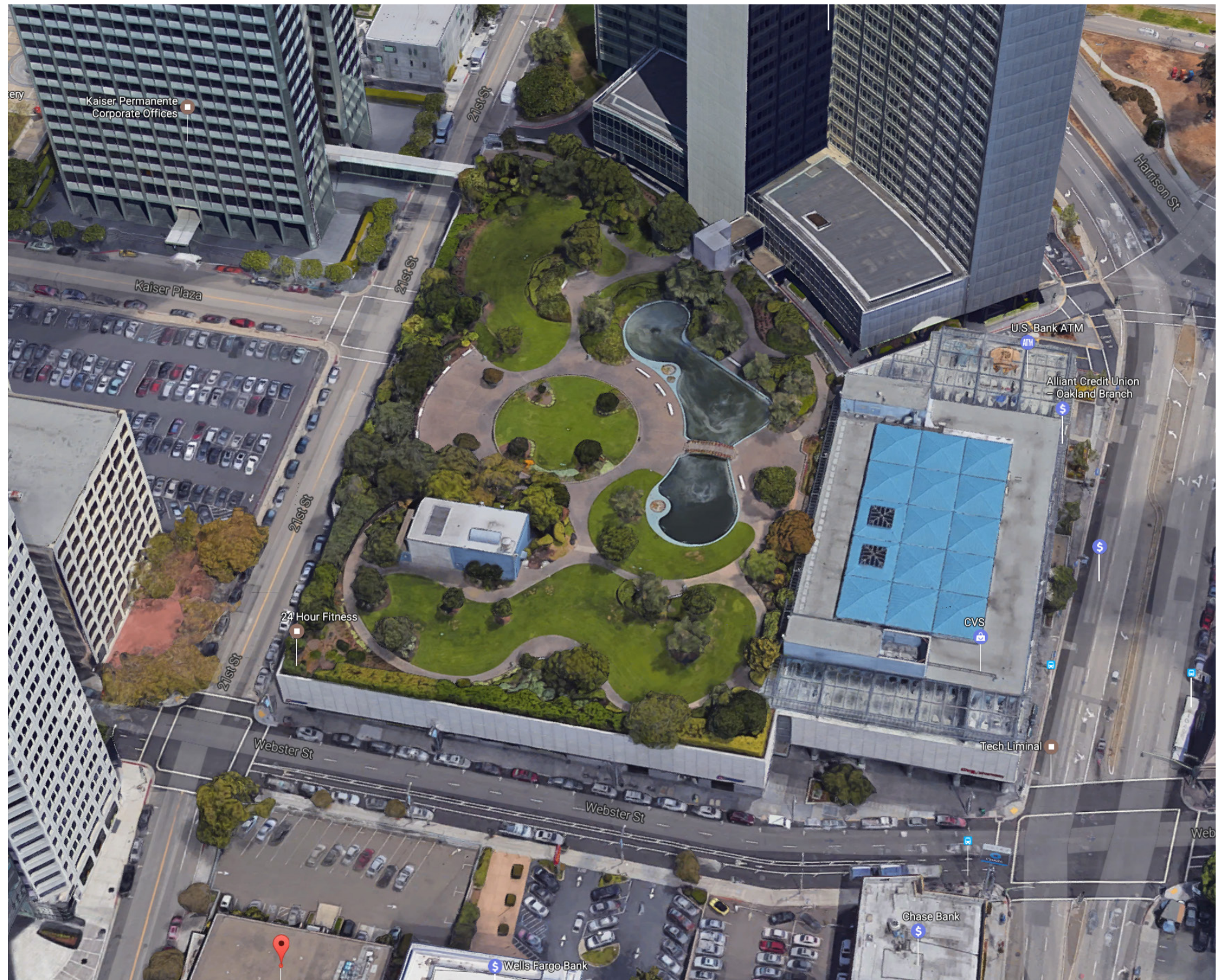
Findings:

On March 21 the first shadow will hit the park at approx. 2pm and last until 6pm on a small triangle on the north-west corner.

On June 21 the first shadow will hit the park at approx. 1pm and last until 6pm on the northern portion of the park

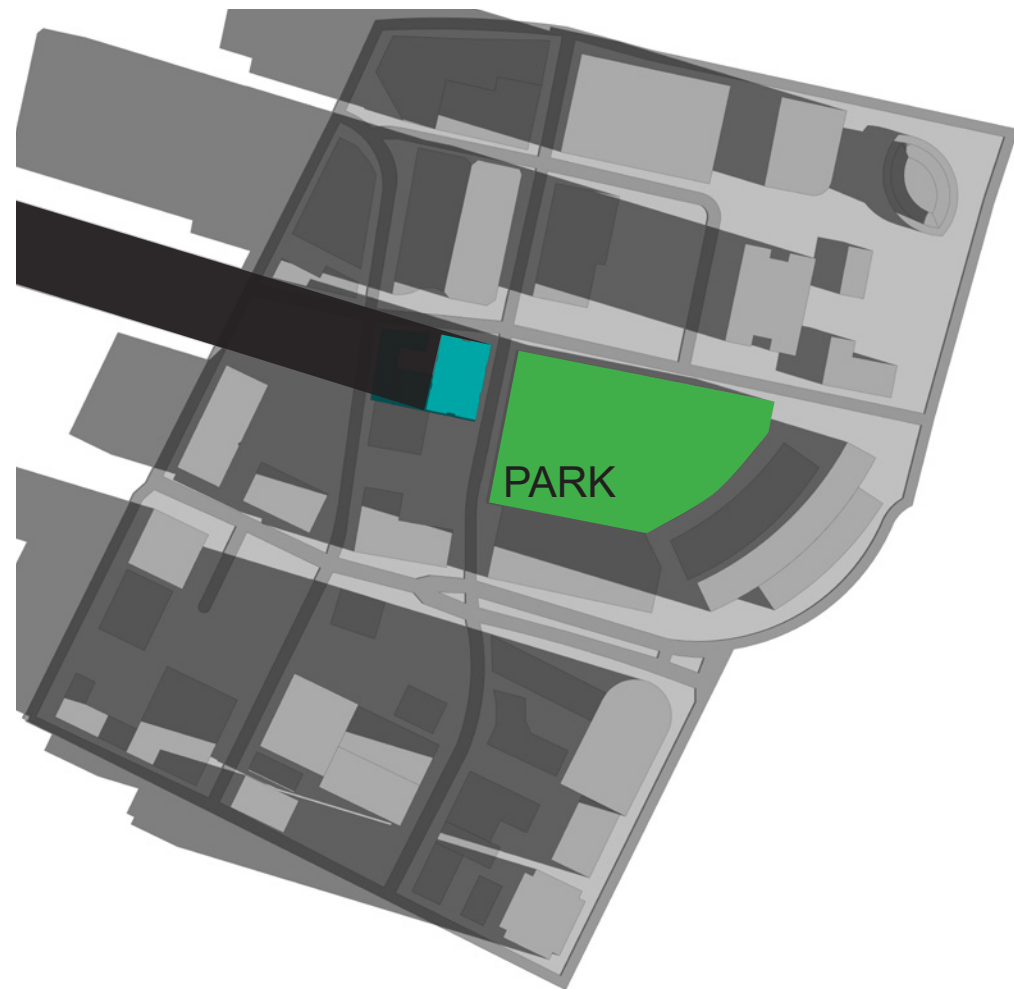
On September 21 the first shadow will hit the park at approx. 1:30 pm and last until 5pm on a triangle on the north-west corner. After 5pm the park would be in shadow by the existing context buildings

On December 21 no new shadows from the proposed project will affect the park as it is already in shadow by existing context buildings.

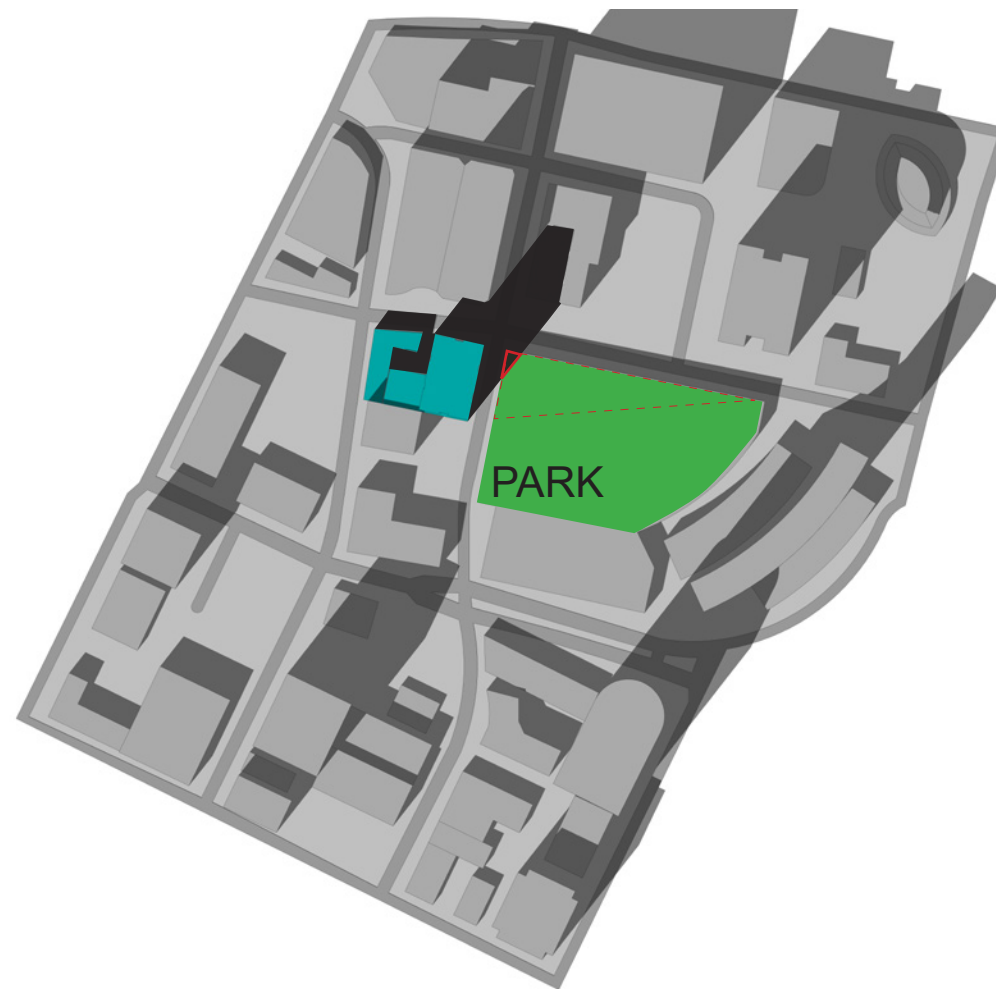


06 SHADOW STUDY ON KAISER CENTER ROOF PARK

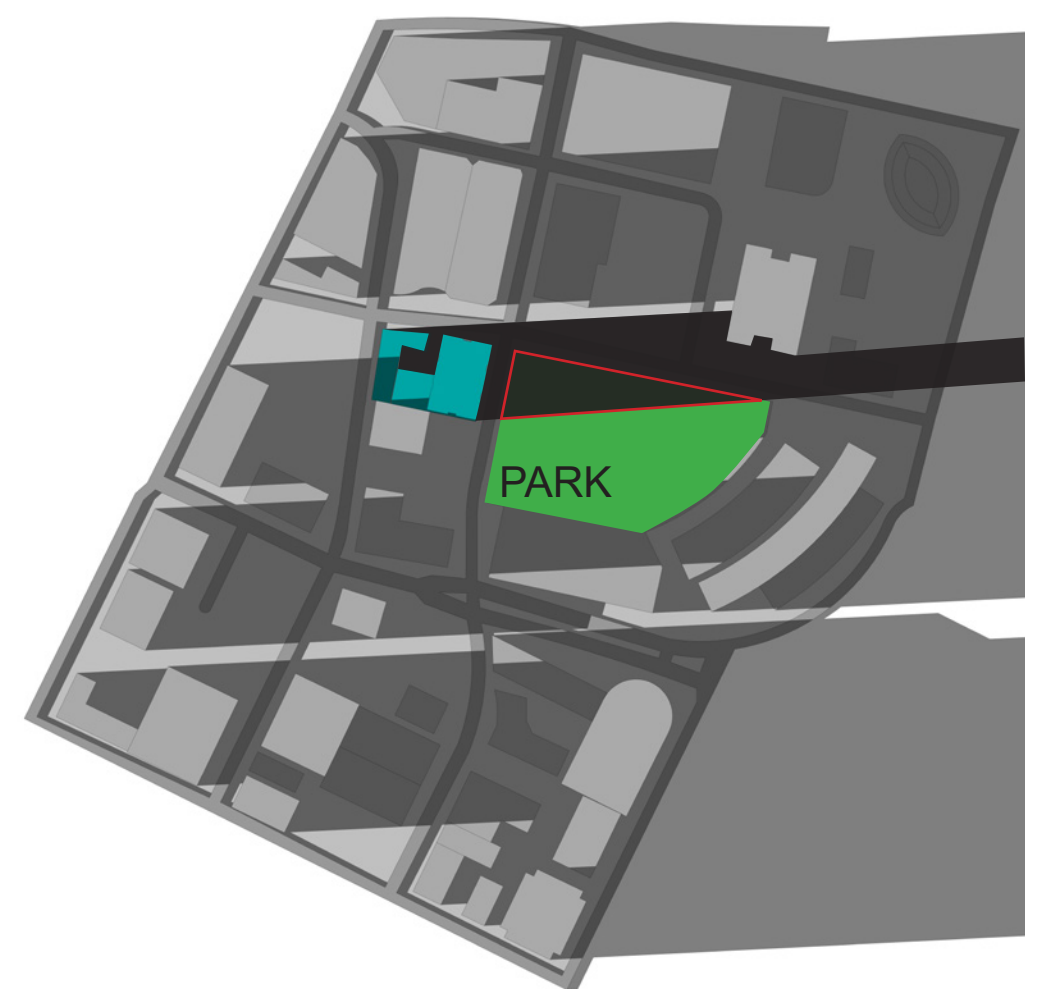
MARCH



N 8:00 am (PDT)
PARK OPENS*








N 2:00 pm (PDT)
FIRST SHADOW



N 6:00 pm (PDT)
PARK CLOSSES*

*PARK HOURS OF OPERATION: M-F, 8AM-6PM. <http://kaisercenterroofgarden.com/>

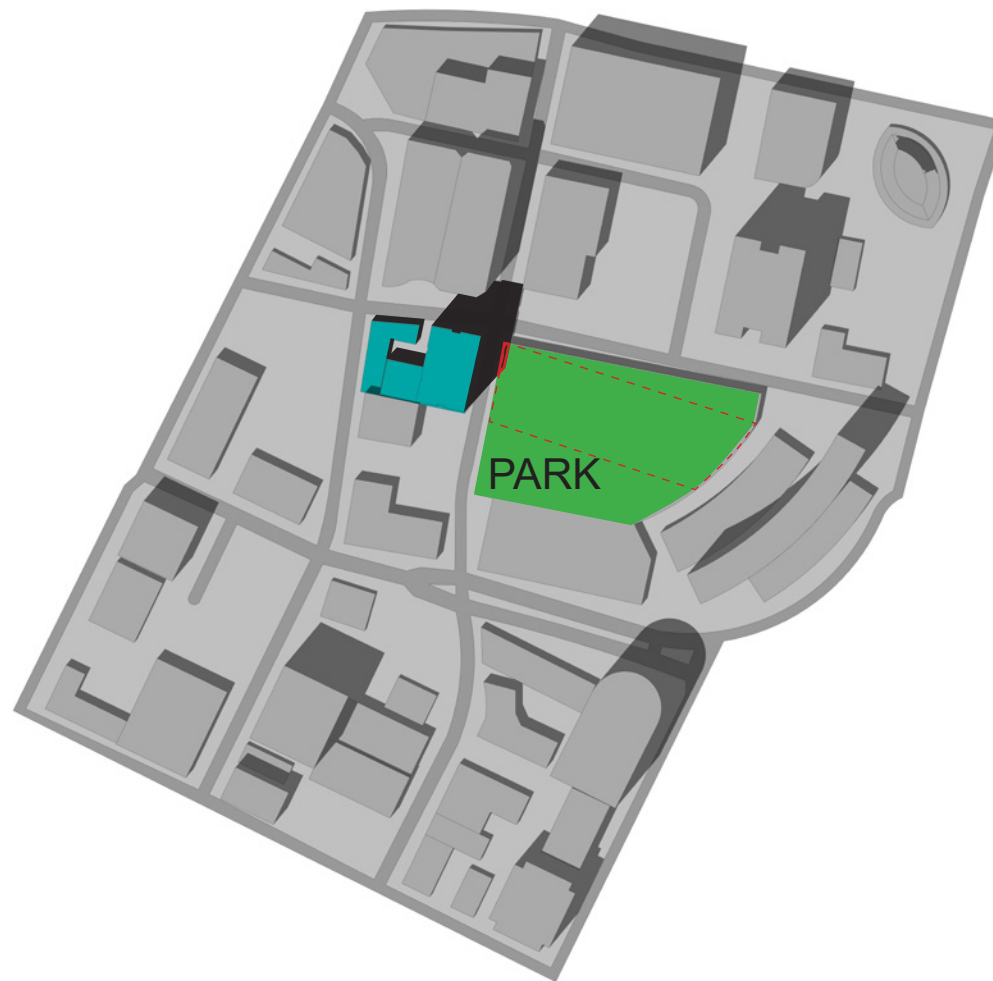
	Project Massing		Project Net-New Shadow		Kaiser Roof Park
	Context Massing		Context Shadow		

07 SHADOW STUDY ON KAISER CENTER ROOF PARK

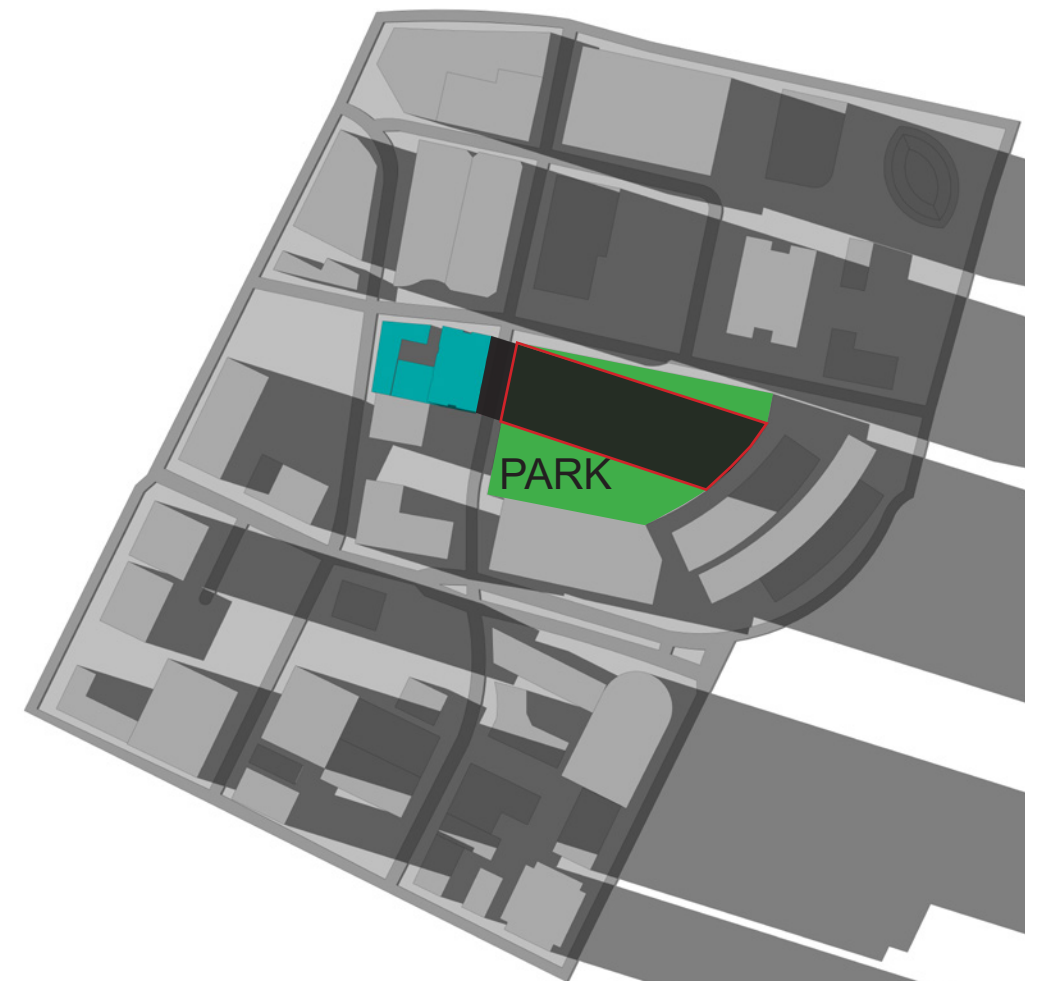
JUNE



N 8:00 am (PDT)
PARK OPENS*








N 1:00 pm (PDT)
FIRST SHADOW



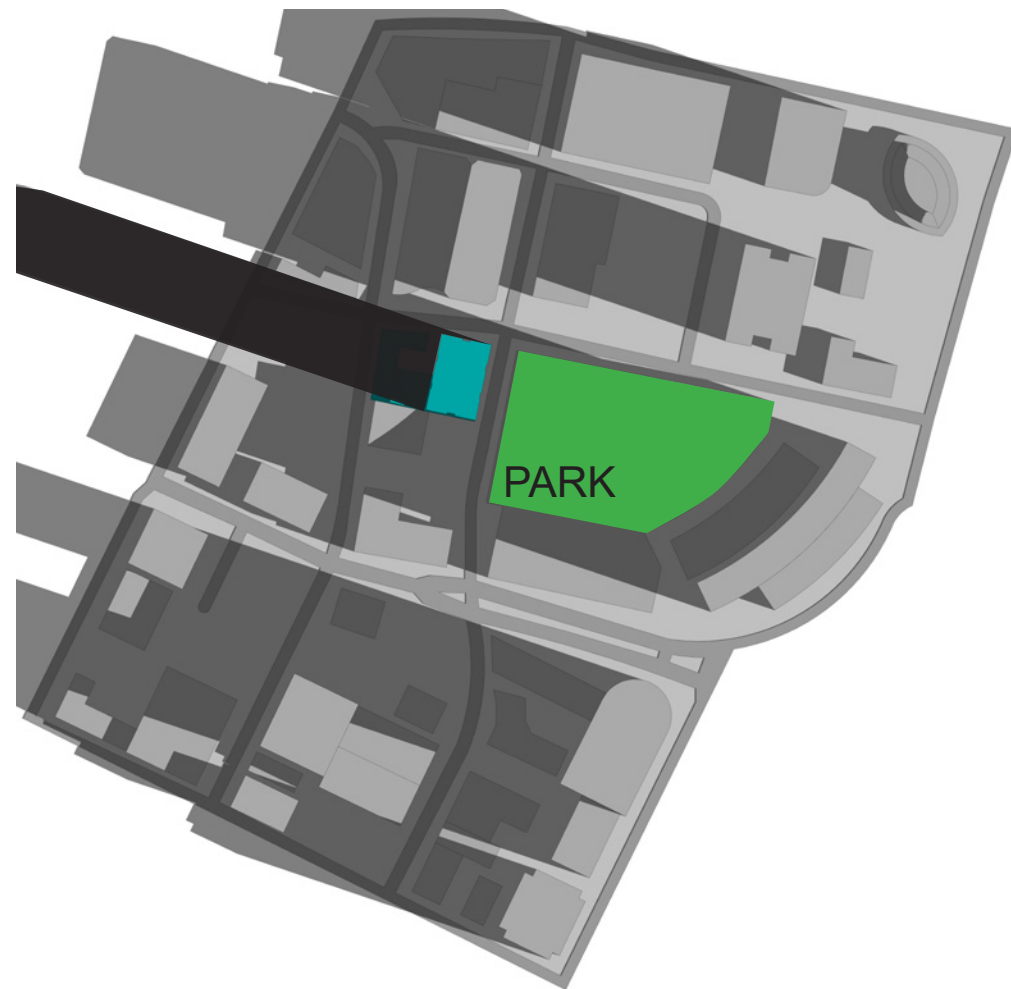
N 6:00 pm (PDT)
PARK CLOSSES*

*PARK HOURS OF OPERATION: M-F, 8AM-6PM. <http://kaisercenterroofgarden.com/>

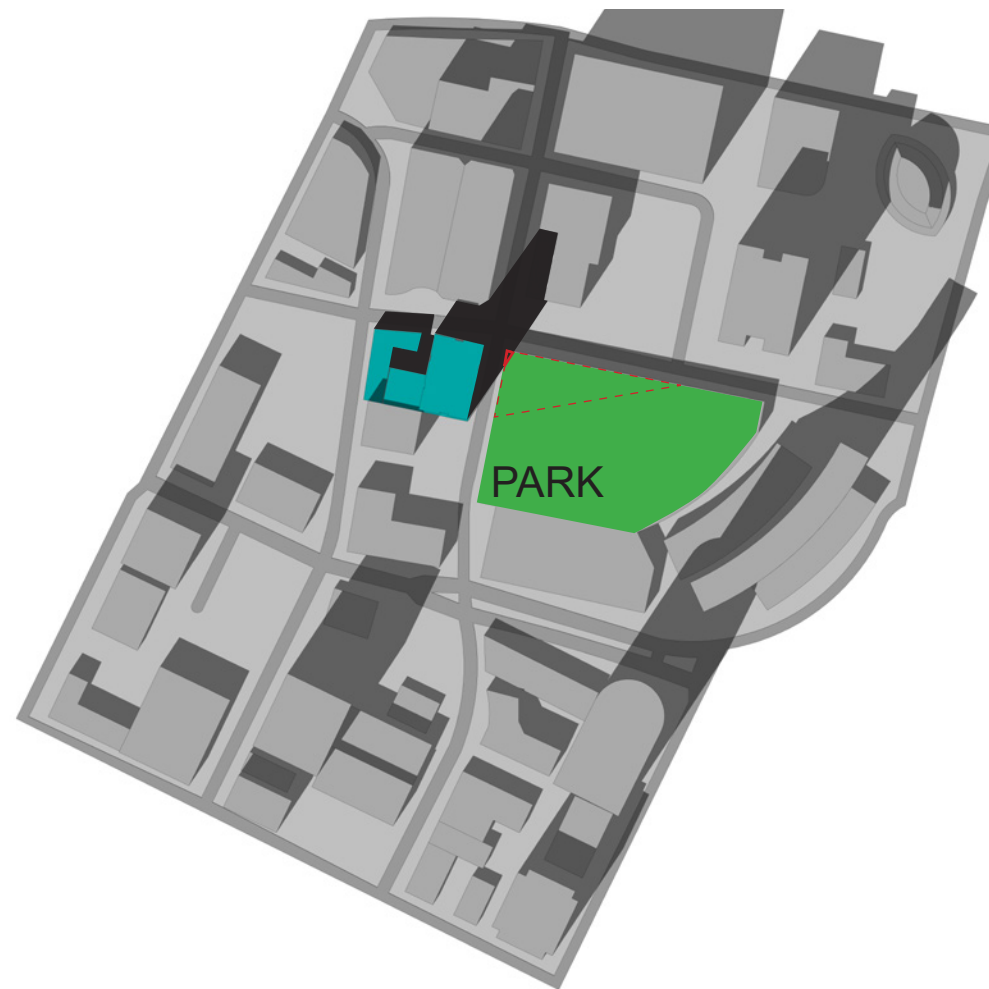
	Project Massing		Project Net-New Shadow		Kaiser Roof Park
	Context Massing		Context Shadow		

08 SHADOW STUDY ON KAISER CENTER ROOF PARK

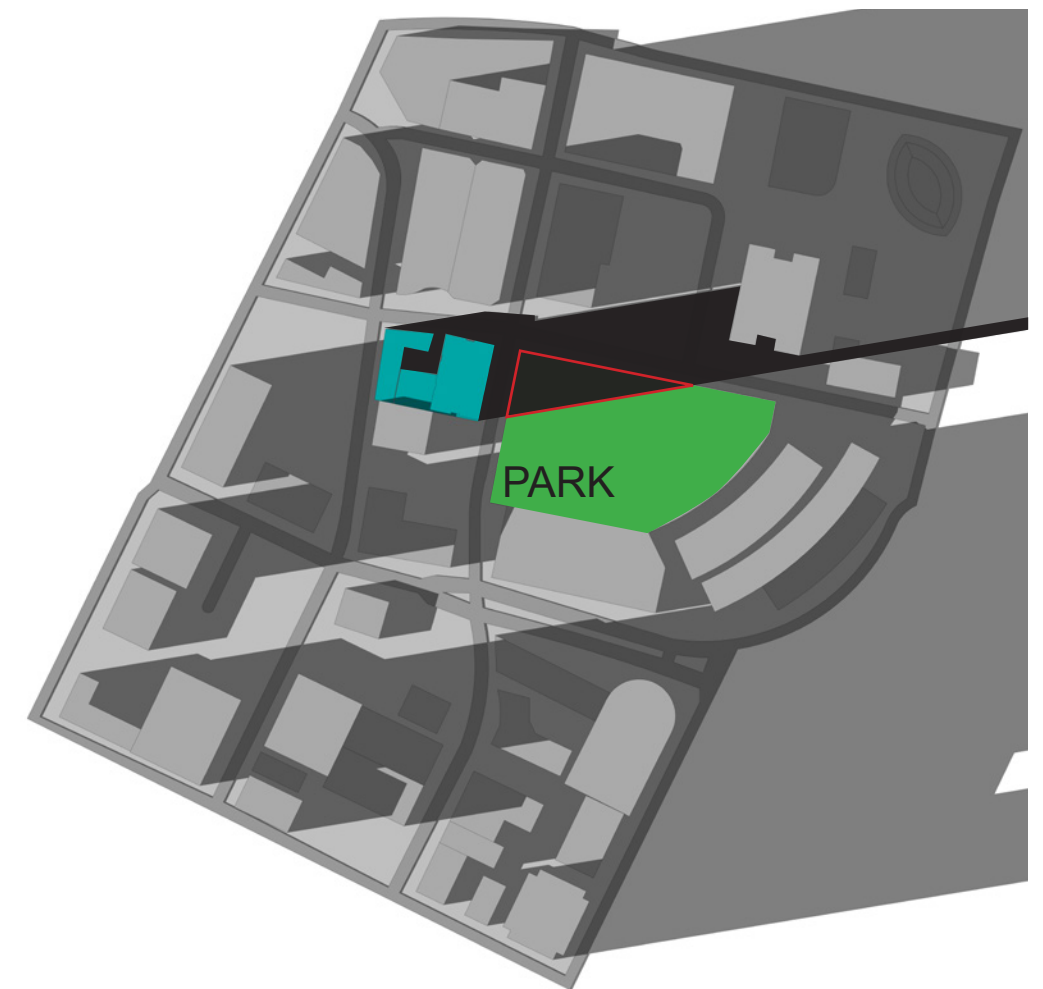
SEPTEMBER



N 8:00 am (PDT)
PARK OPENS*








N 1:30 pm (PDT)
FIRST SHADOW



NOTE:
SHADOW IS SHOWN AT 5 PM
BECAUSE AT 6PM THE PARK
IS IN FULL SHADOW BY
EXISTING BUILDINGS.

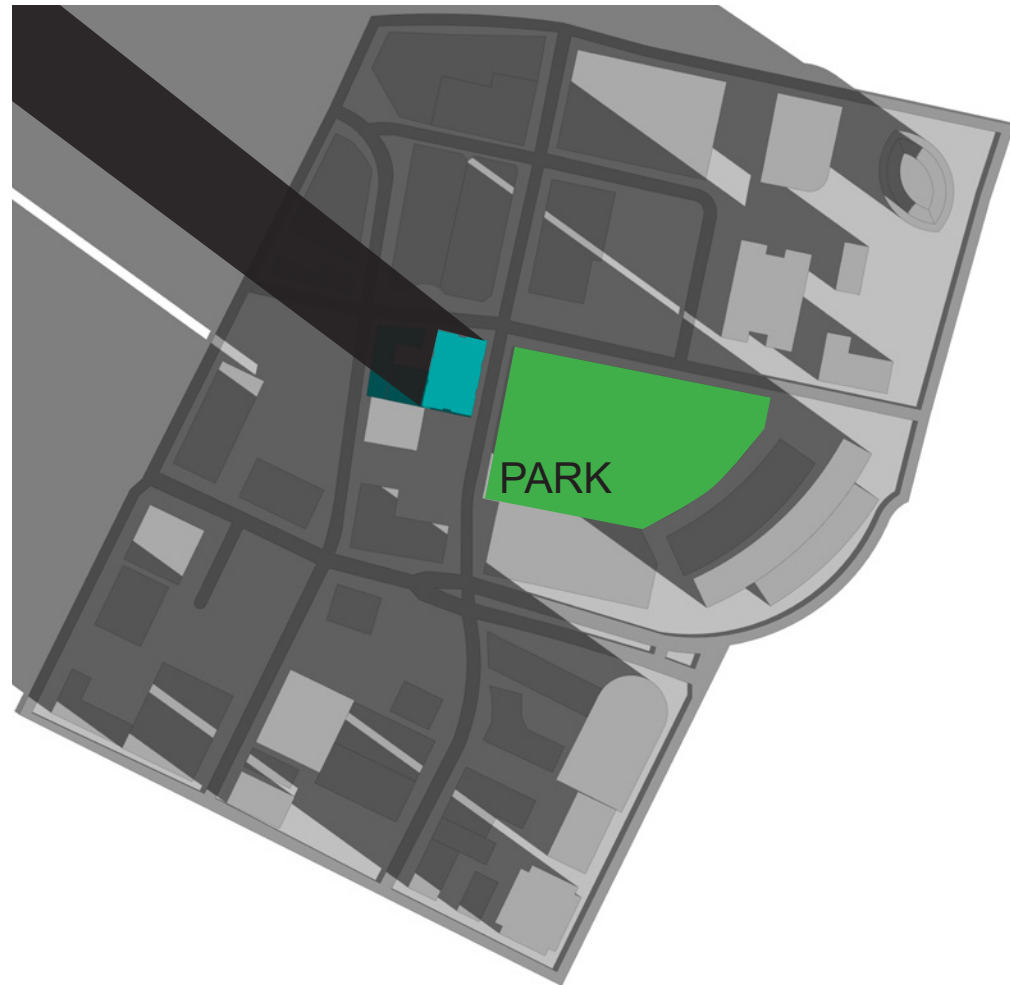
N 5:00 pm (PDT)
LAST SHADOW*

*PARK HOURS OF OPERATION: M-F, 8AM-6PM. <http://kaisercenterroofgarden.com/>

	Project Massing		Project Net-New Shadow		Kaiser Roof Park
	Context Massing		Context Shadow		

09 SHADOW STUDY ON KAISER CENTER ROOF PARK

DECEMBER

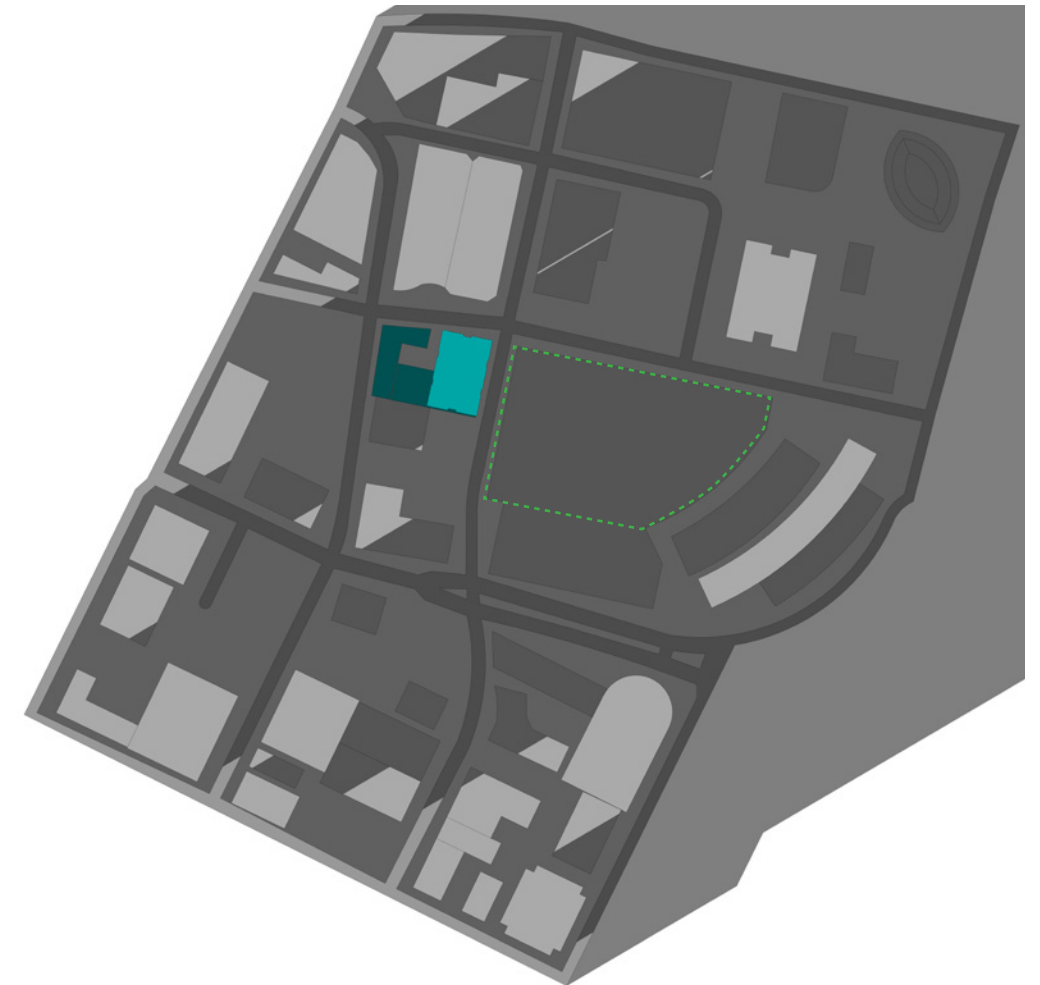


N 8:00 am (PST)
PARK OPENS*



N 2:00 pm (PST)
FIRST SHADOW

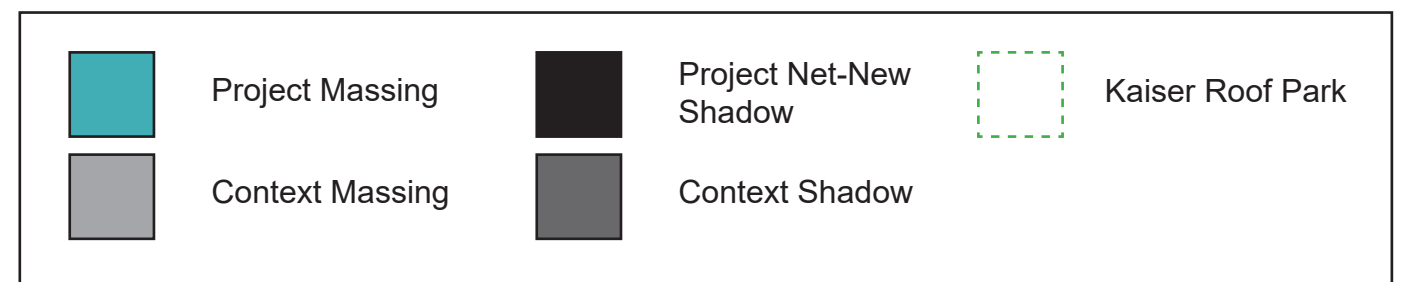
NOTE:
PARK IN SHADOW FROM ADJACENT CONTEXT,
NOT FROM NEW PROJECT.



N 6:00 pm (PST)
PARK CLOSSES*

NOTE:
PARK IN SHADOW FROM ADJACENT CONTEXT,
NOT FROM NEW PROJECT.

*PARK HOURS OF OPERATION: M-F, 8AM-6PM. <http://kaisercenterroofgarden.com/>



10 SHADOW STUDY ON KAISER CENTER ROOF PARK

It is important to note in this study that the proposed developments at 300 Lakeside Drive would cast direct shadow on the Kaiser Park while blocking the shadow cast from the development at 2044 Franklin Street. This is illustrated below.

