

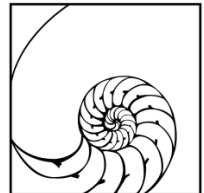
2 Kaiser Plaza Project

CEQA Analysis

November 2017

Lead Agency:
City of Oakland
Planning and Building Department
250 Frank H. Ogawa Plaza
Suite 2114
Oakland, CA 94612

Prepared By:
Lamphier–Gregory
1944 Embarcadero
Oakland, CA 94606



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I. Project Characteristics

- 1. Project Title:** 2 Kaiser Plaza 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:** Catherine Payne, Planner IV
510.238.6168
cpayne@oaklandnet.com
- 4. Project Location:** 2 Kaiser Plaza
Oakland, CA
(northwest corner of 21st Street and Kaiser Plaza)
Assessor's Parcel Nos. 008-065301501, 008-065300800,
008-065300900, and 008-065301000
- 5. Project Sponsor's Name and Address:** CIM Group
Attn: Sean Buran, Vice President
4700 Wilshire Blvd.
Los Angeles, CA 90010
- 6. Existing General Plan Designations:** Central Business District
- 7. Existing Zoning:** Central Business District General Commercial Zone (CBD-C)
Height Limit: Height Area 7 (maximum podium height of 120 feet; no maximum building height)
- 8. Requested Permits:** Design Review (Planning Code §17.136.040)
Conditional Use Permit

II. Executive Summary

As shown in **Figure 1**, the approximate 1.02-acre (44,615-square-foot) 2 Kaiser Plaza Project (Project) site is located in downtown Oakland on the northwest corner of 21st Street and Kaiser Plaza, bounded by Kaiser Plaza on the east, 22nd Street on the north, high-rise commercial development on the west, and 21st Street on the south. The Project site consists of four parcels at 2 Kaiser Plaza (Assessor Parcel Numbers 008-065301501, 008-065300800, 008-065300900, and 008-065301000). Regional access is provided by Interstate 580 (I-580), I-980, I-880, and Highway 24.

The Project proposes two commercial office development options, both with ground floor retail space, podium level parking, and an office tower. Project Option A would include a 21-story approximately 667,150-square-foot (sf) commercial building with 11,380 sf ground floor retail space, 5 levels of parking accommodating 280 vehicle spaces, and 457,100 sf of office space (**Figure 2**). Project Option B would include a 33-story approximately 1,128,604 sf commercial building with 8,705 sf ground floor retail space, 6 levels of parking accommodating 352 vehicle spaces, and 850,055 sf of office space (**Figure 3**).

This California Environmental Quality Act (CEQA) Analysis evaluates both Project options as it is not known at this time which option will be pursued. Specifically, the Project is considered an urban infill development project, and is in the class of projects that is exempt from CEQA review under CEQA Guidelines Section 15332 (Class 32 exemption). In addition to the Class 32 exemption, this analysis uses CEQA streamlining and/or tiering provisions under CEQA Guidelines Sections 15168, 15180, and Section 15183 to tier from the program-level analysis completed in the City of Oakland General Plan (General Plan) Land Use and Transportation Element (LUTE)¹ and LUTE Environmental Impact Report (EIR; 1998),² and the Central District Urban Renewal Plan (CDURP; a redevelopment plan) and the 2011 CDURP Amendments EIR³—collectively referred to herein as the Program EIRs—that analyzed environmental impacts associated with adoption and implementation of the General Plan and the CDURP.

¹ City of Oakland, 1998. *General Plan*, Land Use and Transportation Element.

² City of Oakland, 1998. Oakland General Plan Land Use and Transportation Element EIR.

³ City of Oakland, 2011. Proposed Amendments to the Central District Urban Renewal Plan EIR.



Figure 1. Project Location



Figure 2. Project Option A

Source: SCB



Figure 3. Project Option B

Source: SCB

III. Background

The following describes the Program EIRs that constitute the previous CEQA documents considered in this CEQA Analysis. Each of the following documents is hereby incorporated by reference and can be obtained from the City of Oakland Bureau of Planning at 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, California 94612, and at <http://www2.oaklandnet.com/Government/o/PBN/OurServices/Application/EIR/index.htm>.

Land Use and Transportation Element EIR

The City of Oakland (City) certified the EIR for its General Plan LUTE in 1998. The LUTE identifies policies to guide land use changes in the City and sets forth an action program to implement the land use policy through development controls and other strategies. The LUTE identifies five Showcase Districts targeted for continued growth; the Project site is located within the Downtown Showcase District (Downtown), which is intended to promote a mixture of vibrant and unique subdistricts with around-the-clock activity, continued expansion of job opportunities, and a growing residential population. The 1998 LUTE EIR is designated a Program EIR under CEQA Guidelines Sections 15183 and 15183.3. As such, subsequent activities under the LUTE are subject to requirements under each of the aforementioned CEQA Sections, which are described further below.

Applicable mitigation measures identified in the 1998 LUTE EIR are largely the same as those identified in the other Program EIRs prepared after the 1998 LUTE EIR, either as mitigation measures or newer City of Oakland Standard Conditions of Approval (SCAs), the latter of which are described below.

Environmental Effects Summary – 1998 LUTE EIR

The 1998 LUTE EIR (including its Initial Study Checklist) determined that development consistent with the LUTE would result in impacts on the following CEQA Appendix G Environmental Checklist Form environmental factors that would be reduced to a less than significant level with the implementation of mitigation measures and/or SCAs (described in Section IV): aesthetics (views, architectural compatibility and shadow only); air quality (construction dust [including PM₁₀] and emissions Downtown, odors); cultural resources (except as noted below as less than significant); hazards and hazardous materials; land use (use and density incompatibilities); noise (use and density incompatibilities, including from transit/transportation improvements); population and housing (induced growth, policy consistency/clean air plan); public services (except as noted below as significant);⁴ and transportation/circulation (intersection operations Downtown).

Less than significant impacts were identified for the following environmental factors in the LUTE EIR and Initial Study: aesthetics (scenic resources, light and glare); air quality (clean air plan consistency, roadway emissions in downtown, 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 downtown and citywide, multifamily near transportation/transit improvements); population and housing (exceeding household projections, housing displacement from industrial

⁴ The LUTE EIR addressed effects on solid waste demand and infrastructure facilities for water, sanitary sewer and stormwater drainage under Public Services.

encroachment); public services (water demand, wastewater flows, stormwater quality, parks services); and transportation/circulation (transit demand). No impacts were identified for agricultural or forestry resources, and mineral resources.

Significant unavoidable impacts were identified for the following environmental factors in the LUTE EIR: air quality (regional emissions, roadway emissions Downtown); noise (construction noise and vibration in Downtown); public services (fire safety); transportation/circulation (roadway segment operations); wind hazards, and policy consistency (clean air plan). Due to the potential for significant unavoidable impacts, a Statement of Overriding Considerations was adopted as part of the City's approvals.

Central District Urban Renewal Plan Amendments EIR

The CDURP (adopted by the Oakland City Council June 12, 1969) and its subsequent amendments provide a series of multiple, coordinated actions (e.g., tools, programs, and funding) to eliminate blight and facilitate revitalization, growth, and the creation of temporary and permanent jobs in the plan's project area, which encompasses Downtown Oakland and Jack London Square, and the Chinatown, Victorian Row/Old Oakland, and Uptown neighborhoods. The Project site is within the Downtown Oakland portion of the CDURP project area. The City prepared and certified an EIR for proposed amendments to the CDURP in 2011, and amended or supplemented the Plan up to April 3, 2022.⁵ The 2011 Urban Renewal Plan Amendments EIR was designated a Program EIR under CEQA Guidelines Section 15180; as such, subsequent activities are subject to requirements under CEQA Section 15168.

Applicable mitigation measures and SCAs identified in the 2011 CDURP Amendments EIR are considered in the analysis in this document and are largely the same as those identified in the other Program EIRs described in this section.

Environmental Effects Summary – 2011 CDURP Amendments EIR

The 2011 CDURP Amendments EIR determined that development facilitated by the proposed amendments would result in impacts to the following factors that would be reduced to a less than significant level with the implementation of identified mitigation measures and/or SCAs: aesthetics (light/glare only); air quality (except as noted below as less than significant and significant); biological resources (except no impacts regarding wetlands or conservation plans); cultural resources (except as noted below as significant); geology and soils; greenhouse gas emissions; hazards and hazardous materials; hydrology and water quality (stormwater and 100-year flooding only); noise (exceeding standards – construction and operations only); traffic/circulation (safety and transit only); and utilities and service systems (stormwater and solid waste only).

Less than significant impacts were identified for the following resources in the 2011 CDURP Amendments EIR: aesthetics (except as noted above as less than significant with SCAs); air quality (clean

⁵ The 2011 EIR addressed two amendments. A 17th Amendment to (1) extend the duration of the Plan from 2012 to 2022 and extend the time period that the then-Redevelopment Agency could receive tax increment funds from 2022 to 2032, as allowed by Senate Bill (SB) 211 (codified as Health and Safety Code Section 33333.10 et seq.); (2) increase the cap on the receipt of tax increment revenue to account for the proposed time extensions; and (3) renew the then-Redevelopment Agency's authority to use eminent domain in the Project Area. An 18th Amendment further extended the then-redevelopment plan time limit from 2022 to 2023 and extended the time period that the then-Redevelopment Agency could receive tax increment funds from 2032 to 2033, as allowed by Health and Safety Code Section 33331.5.

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 and forestry resources, or mineral resources.

The 2011 CDURP Amendments EIR determined that the proposed amendments to the CDURP 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.

Standard Conditions of Approval

The City established its Standard Conditions of Approval and Uniformly Applied Development Standards in 2008, and they have since been amended and revised several times.⁶ The City's SCAs are incorporated into new and changed projects as conditions of approval regardless of a project's environmental determination. The SCAs incorporate policies and standards from various adopted plans, policies, and ordinances (such as the Oakland Planning and Municipal Codes, Oakland Creek Protection Ordinance, Stormwater Water Management and Discharge Control Ordinance, Oakland Protected Trees Ordinance, Oakland Grading Regulations, National Pollutant Discharge Elimination System (NPDES) permit requirements, Housing Element-related mitigation measures, California Building Code and Uniform Fire Code, among others), 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.

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—e.g., **SCA-AIR-1**, **SCA-AIR-2**. The SCA title is also provided—e.g., **SCA-AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions)**.

Consistent with the requirements of CEQA, a determination of whether the Project would have a significant impact has occurred prior to the approval of the Project and, where applicable, SCAs have been identified that will mitigate them. In some instances, exactly how the SCAs identified will be achieved awaits completion of future studies, an approach that is legally permissible where SCAs are known to be feasible for the impact identified, where subsequent compliance with identified federal, state, or local regulations or requirements apply, where specific performance criteria are specified and required, and where the proposed project commits to developing measures that comply with the requirements and criteria identified.

⁶ A revised set of SCAs was published by the City of Oakland on April 11, 2017.

IV. Purpose and Summary of this CEQA Document

The purpose of this document is to evaluate the CEQA compliance of the Project as proposed. Applicable CEQA sections are described below, each of which, separately and independently, provides a basis for CEQA compliance.

1. **Class 32 Categorical Exemption.** Public Resources Code Section 21084 and State CEQA Guidelines Section 15332, Class 32 Categorical Exemptions, apply to infill development projects that meet the following conditions:
 - Are consistent with applicable general plan policies and zoning designations
 - Occur within a project site smaller than five acres and are substantially surrounded by urban uses
 - Have no value as habitat for endangered, rare or threatened species
 - Would not result in any significant effects relating to traffic, noise, air quality, or water quality
 - Are located on a site that can be adequately served by all required utilities and public services
2. **Addendum.** Public Resources Code Section 21166 and CEQA Guidelines Section 15164 state that an addendum to a certified EIR is allowed when minor changes or additions are necessary and none of the conditions for preparation of a subsequent EIR or negative declaration, per Section 15162, are satisfied. Per Section 15180, if the EIR for a redevelopment plan is a Program EIR, subsequent activities in the program will be subject to the review required by Section 15168. The analysis for the CDURP (a redevelopment plan) in the 2011 CDURP Amendments EIR is a Program EIR and directly applies to the Project, providing the basis for use of an Addendum.
3. **Community Plan Exemption.** Public Resources Code Section 21083.3 and State CEQA Guidelines Section 15183 allow streamlined environmental review for projects that are “consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.” Section 15183(c) specifies that “if an impact is not peculiar to the parcel or to the proposed project, has been addressed as a significant effect in the prior EIR, or can be substantially mitigated by the imposition of uniformly applied development policies or standards..., then an EIR need not be prepared for the project solely on the basis of that impact.”

The analysis in the Program EIRs—the 1998 LUTE EIR and the 2011 CDURP Amendments EIR—are applicable to the Project and provide the basis for use of the Community Plan Exemption.

4. **Program EIRs and Redevelopment Projects.** CEQA Guidelines Section 15168 (Program EIRs) and Section 15180 (Redevelopment Projects) provide that the 2011 CDURP Amendments EIR can be used as a Program EIR in support of streamlining and/or tiering provisions under CEQA. The 2011 CDURP Amendments EIR is a Program EIR for streamlining and/or tiering provisions by CEQA Guidelines Section 15168. Section 15168 defines the Program EIR as one prepared on a series of actions that can be characterized as one large project and are related geographically and by other shared characteristics. Section 15168 also states that “subsequent activities in the program EIR must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.” If the agency finds that pursuant to CEQA Guidelines Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR and no new environmental document would be required. Further, CEQA Guidelines Section 15180 specifies that if a certified redevelopment plan EIR is prepared, no subsequent EIRs are required for individual

components of the redevelopment plan unless a subsequent EIR or supplement to the EIR would be required by Section 15162 or 15163.

This CEQA Analysis for the Project provided herein evaluates the specific environmental effects of the Project as proposed and whether such impacts were adequately covered by the Program EIRs to allow the above-listed provisions of CEQA to apply. The analysis conducted incorporates by reference the information contained in the General Plan and the CDURP. The Project is legally required to incorporate and/or comply with the applicable requirements of the mitigation measures identified in the General Plan and CDURP as well as applicable SCAs; therefore, the measures and SCAs are herein assumed to be included as part of the Project. See **Attachment A** for the full text of applicable SCAs included in this CEQA Analysis. (Note that this is not an exhaustive list of all SCAs that may be required by the City for the Project.)

2 Kaiser Plaza Project CEQA Compliance

The Project satisfies each of the foregoing CEQA provisions, as summarized below.

- **Class 32 Exemption:** The analysis presented in the following section provides substantial evidence that the project qualifies for an exemption under CEQA Guidelines Section 15332 as a Class 32 urban infill development, and would not result in any new significant effects on the environment. In addition, none of the specific exceptions to CEQA categorical exemptions (CEQA Guidelines Section 15300.2) are applicable to the project.
- **Addendum:** The analysis contained in this document demonstrates that preparation of an addendum to the CDURP EIR is allowed for the Project. A thorough analysis of the Project's consistency with the CDURP EIR under the findings set forth under CEQA Guidelines Section 15162 is set forth under Attachment B. The level of development currently proposed for the site is within the broader development assumptions analyzed in the CDURP EIR. The Project is consistent with the land uses identified for the area in the CDURP and analyzed in the 2011 CDURP Amendments EIR. The analysis in the 2011 CDURP Amendments EIR and in this CEQA Analysis demonstrate that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR, per CEQA Guidelines Section 15162.
- **Community Plan Exemption:** When development proposals are brought before the City, the staff and decision-makers use the General Plan as a guide for project review. Projects are evaluated for consistency with the intent of General Plan policies and conformance with development regulations. The analyses performed for the Program EIRs were intended to expedite the processing of future projects that are consistent with the General Plan. As described within this CEQA Analysis, the Project is permitted in the zoning district where the Project site is located and consistent with the bulk, density, and land use standards envisioned in the General Plan. The CEQA Analysis (and attachments) provided herein conclude that the Project would not result in significant impacts that (1) would be peculiar to the Project or Project site; (2) were not identified as significant project-level, cumulative, or off-site effects in the Program EIRs; or (3) were previously identified as significant but later determined as having a more severe adverse impact than that discussed in the Program EIRs. Findings regarding the Project's consistency with the General Plan are included as **Attachment C** to this document. Therefore, consistent with CEQA Guidelines Section 15183, this CEQA Analysis satisfies the requirements for a community plan exemption.

- **Program EIRs and Redevelopment Projects:** The Project is consistent with the land uses identified for the area in the CDURP and analyzed in the 2011 CDURP Amendments EIR. The analysis in the 2011 CDURP Amendments EIR and in this CEQA Analysis demonstrates that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR, per CEQA Guidelines Section 15162.

Examination of the analysis, findings, and conclusions of the EIR, as summarized in the CEQA analysis below, indicates that the prior CEQA documents adequately analyzed and covered the potential environmental impacts associated with the Project. The Project would not result in significant impacts that are:

- peculiar to project or project site (pursuant to CEQA Guidelines Sections 15183);
- not identified in the Previous EIR (per CEQA Guidelines Sections 15183), including offsite and cumulative impacts (per CEQA Guidelines Section 15183);
- due to substantial changes in the project (per CEQA Guidelines Section 15162 and 15168);
- due to substantial changes in circumstances under which the project will be undertaken (per CEQA Guidelines Sections 15162 and 15168); or
- due to substantial new information not known at the time the Program EIRs were certified (per CEQA Guidelines Sections 15162, 15168, and 15183).

The Project would not result in a new, significant environmental impact or a substantial increase in the severity of a significant environmental impact than determined in previous Program EIRs. The Class 32 exemption as well as the streamlining and/or tiering provisions of CEQA apply to the Project. Therefore, no further review or analysis is required under CEQA.

SCAs identified in the Program EIRs that would apply to the Project are listed in Attachment A to this document, which is incorporated by reference into this CEQA Analysis. Because the SCAs are mandatory City requirements, the impact analysis for the Project assumes that they will be imposed and implemented, which the Project sponsor has agreed to do or ensure as part of the Project. If this CEQA Analysis or its attachments inaccurately identifies or fails to list a mitigation measure or SCA, the applicability of that mitigation measure or SCA to the Project is not affected. Most of the SCAs that are identified for the Project were also identified in the 2011 CDURP Amendments EIR; the 1998 LUTE EIR was developed prior to the City's application of SCAs.

V. Project Description

This section describes the two proposed Project options evaluated in this CEQA analysis and includes a description of the Project site, existing site conditions, the proposed development, and the required Project approvals.

Project Location

As shown in **Figure 4**, the approximate 1.02-acre (44,615-square-foot) Project site is located in downtown Oakland on the northwest corner of 21st Street and Kaiser Plaza, bounded by Kaiser Plaza on the east, 22nd Street on the north, high-rise commercial development on the west, and 21st Street on the south. The Project site consists of four parcels at 2 Kaiser Plaza (Assessor Parcel Numbers 008-065301501, 008-065300800, 008-065300900, and 008-065301000). Regional access is provided by Interstate 580 (I-580), I-980, I-880, and Highway 24.

The Project is an infill site within a half-mile of a major transit stop and near community services within reasonable walking and biking distance. A Bay Area Rapid Transit (BART) station is less than 0.25 mile southwest of the Project site at 19th Street and Broadway. Alameda–Contra Costa Transit (AC Transit) bus routes 1, 1R, 11, 12, 18, 51A, 58L, 72, 72M, 72R, 651, 800, 802, 805, 851, NL, and Broadway Shuttle (N and D) are all within 0.25 mile of the Project site.

Existing Conditions and Surrounding Land Uses

The Project site is a fenced, flat surface parking lot accessible from 22nd Street. The site is surrounded by high-rise commercial development and other urban uses.

Land uses surrounding the Project site include high-rise office/commercial buildings similar to that proposed by the Project, retail stores at street level, and high-density residential dwellings. The 34-story and 42-story Kaiser Center office and commercial/retail buildings are immediately south of the Project site, and the 28-story Ordway Building lies to the east. Lake Merritt, Lake Merritt Park, and the Lake Merritt Historic District lie to the east-southeast of the Project site. The Lake Merritt Historic District area of potential impact has the rough boundaries of the Lake, Lakeside Park, and one parcel deep around the perimeter of the lake; two parcels lie between the Project site and the lake, which is approximately 640 feet to the east.

General Plan and Zoning Designations

The Oakland General Plan designates the site and vicinity as Central Business District (CBD). The intent of the CBD classification is to encourage, support, and enhance the downtown area as a high-density, mixed-use urban center of regional importance. The CBD classification includes a mix of large-scale offices, commercial, urban high-rise residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and visitor uses.

The site is zoned as Central Business District General Commercial Zone (CBD-C), which is intended to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor retail, office, and commercial uses. Upper-story spaces are encouraged to support additional residential, office, and other commercial activities. The Project site is also within Height Area 7. Height Area 7 designates a maximum podium height of 120 feet and no maximum building height.

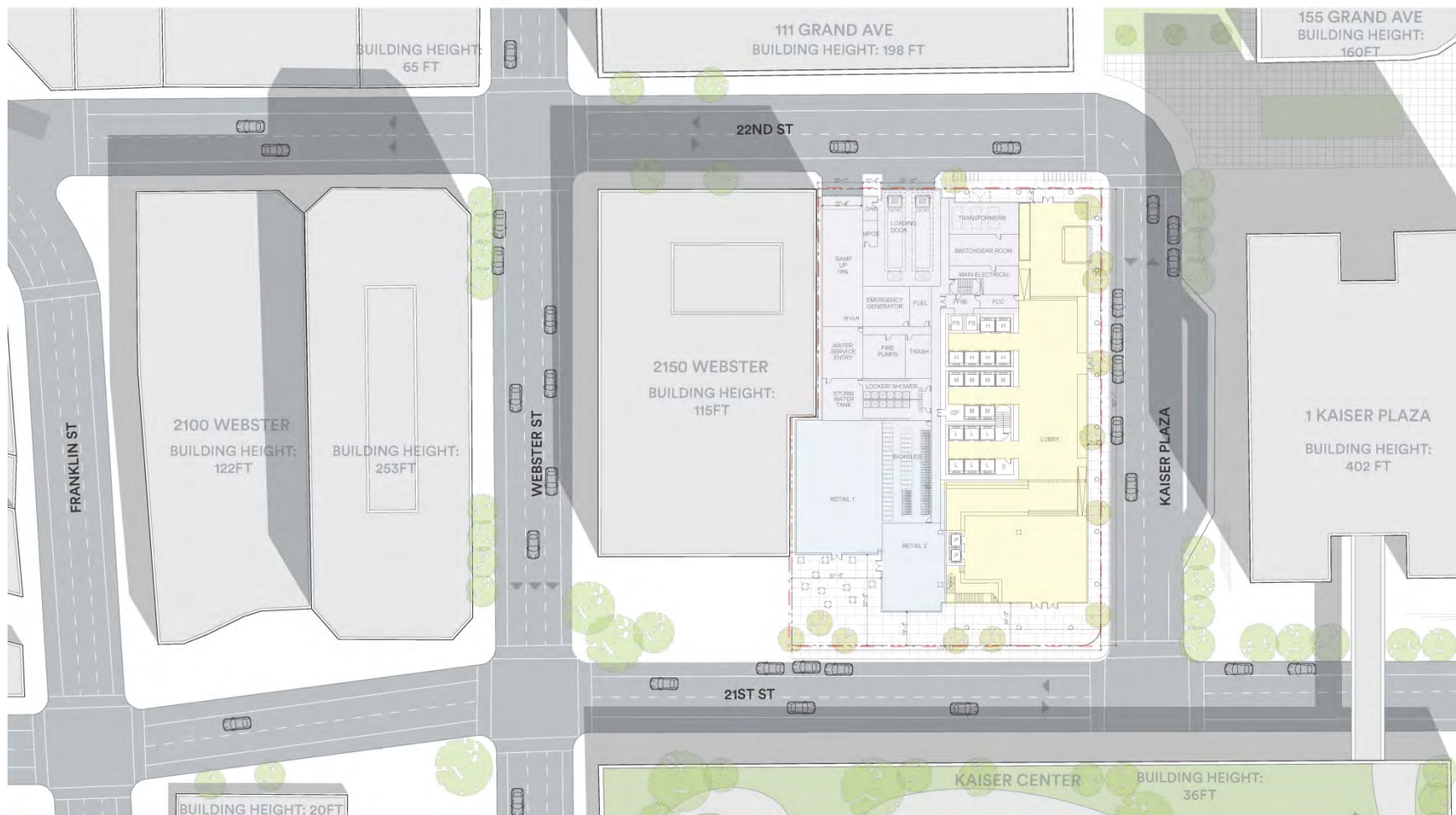


Figure 4. Project Site

Source: SCB

Proposed Project – Options A and B

CIM Group (the applicant) has proposed construction of a commercial development on the Project site. The applicant is proposing to develop one of two options for the office building, as detailed below. Regardless of the option selected for development, some components would be the same for the Project.

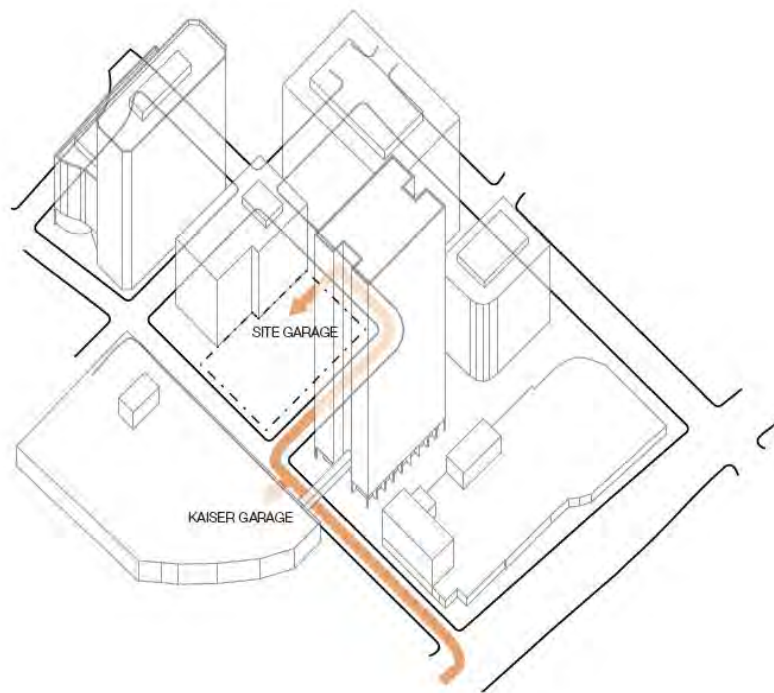
Project Elements Common to Both Options

The existing parking lot would be removed under both options and be replaced by a commercial building consisting of three main sections—ground floor retail and lobby, podium-level parking, and the office tower. The lobby and service areas would be the same for both options, but the size of the office tower and amount of parking would differ by Project option as described below. The parking garage would also include storage spaces. Conference and fitness center space would also be included on two of the parking levels.

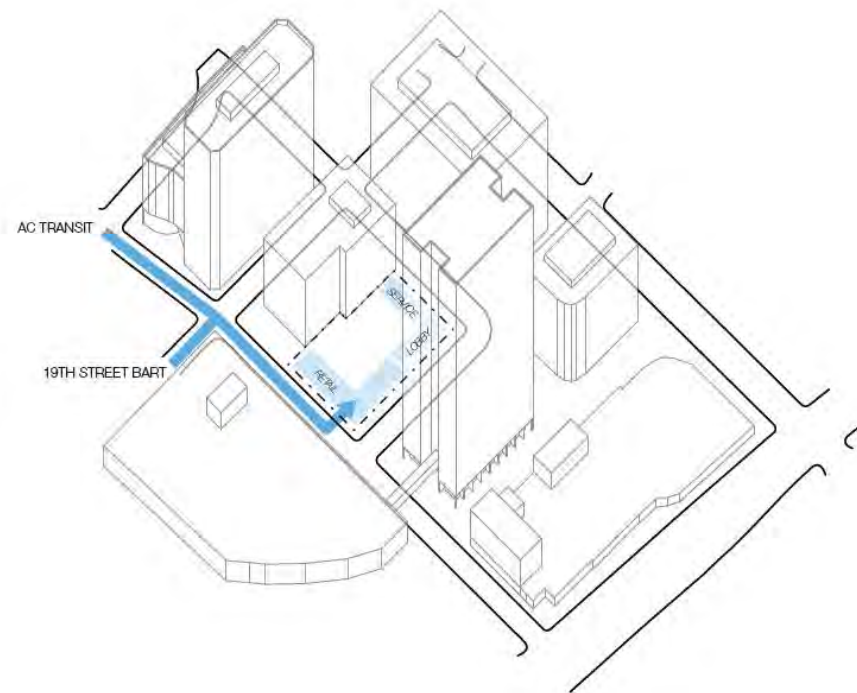
Table 1 provides development detail for Project Option A and Project Option B, which are further described below.

Table 1. Development Summary, Project Options A and B		
Description	Option A	Option B
Total Site Area	44,615 sf (1.02 acre)	same as Option A
Site Coverage	39,400 (88% lot cover)	same as Option A
Gross Floor Area	501,375 sf	892,255 sf
Floor Area Ratio	11.2	20.0
Total Parking Area	184,384 sf	223,784 sf
Retail Space	11,380 sf	8,705 sf
Lobby	10,955 sf	10,955 sf
Conference	7,500 sf	7,500 sf
Fitness	5,500 sf	7,500 sf
Gross Office Space	457,100 sf	850,055 sf
Building Height	319 feet	487 feet
Podium Height	75 feet	87.5 feet
Number of Building Levels	21	33
Number of Parking Spaces	280 spaces commercial	352 spaces commercial

Vehicular site access would be provided via 22nd Street, which would lead to the on-site parking garage and loading dock. Pedestrian access to retail would be from the corner of 22nd Street and Kaiser Plaza and 21st Street (**Figure 5**). Pedestrians would access the office lobby from 21st Street and Kaiser Plaza. Pedestrian linkages within the lobby and parking garage connect these floors to the office tower.



VEHICLE AND SERVICE ACCESS
 22nd street's northern leg is already heavily used
 as a garage and service vehicle access point



PEDESTRIAN ACCESS
 The majority of pedestrian traffic will approach
 from the 19th St BART station and the AC Transit
 stops along Broadway. However, a reverse com-
 mute occurs at lunch hour to and from the lake

Figure 5. Vehicular and Pedestrian Access

Source: SCB

The Project includes other associated improvements such as landscaping (**Figure 6**), hardscape, storm drain, and utility connections. On-site utilities would include gas, electricity, domestic water, wastewater, and storm drainage. All on-site utilities would be designed in accordance with applicable codes and current engineering practices.

Proposed stormwater source control measures include stenciling at storm drains; coverage or design of areas to prevent stormwater from contact with storage, loading, and trash/recycling areas; plumbing of interior floor drains to sanitary sewer, discharge of fire sprinkler testing or air conditioner unit water to vegetated areas or sanitary sewer, and incorporating sustainable landscape practices.

The Project would also incorporate green building features such as energy-efficient lighting and would be GreenPoint rated in compliance with the City's Green Building Ordinance.

Both Project options would require discretionary approvals for Design Review and a conditional use permit for a building over 200,000 sf in size.

Project Option A

Project Option A would entail the development of an approximately 697,150 sf commercial building. The building would consist of 21 stories composed of ground floor retail, 5 levels of podium parking, and office space (**Figures 7a – 7g**). The parking garage would accommodate approximately 280 parking spaces under Option A. The total building footprint would be approximately 39,400 sf and the ground floor would occupy 88% of the lot surface area.

The Project is currently in the design phase and no details are as-yet available regarding the construction schedule and phasing or site grading. For the purpose of this analysis, however, the following is assumed: On-site construction work is expected to span approximately 18 months. The first month would consist of site preparation. Grading and excavation for the foundation would span approximately one month. The remainder of the construction period would consist of building construction.

Grading is expected to be limited to surface preparation, utility connections, and limited excavations for the foundation, footings, and utility services.

Typical equipment used during construction would include an excavator, backhoe, trencher, tower crane, man hoist, forklift, gradall, and paving equipment. Staging would occur as much as possible within the Project site. Street frontages and parking lanes will need to be used at times for deliveries and removals of materials and equipment subject to City review and approvals. Parking lanes on one or more of the street frontages may be temporarily closed for concrete trucks, pumps, and compressors.

Project Option B

As shown in Table 1, Project Option B would entail the development of an approximately 1,128,604 sf commercial building. The building would consist of 33 stories composed of ground floor retail, 6 levels of podium parking, and office space (**Figures 8a – 8e**). The parking garage would accommodate approximately 352 parking spaces under Option B. The total building footprint would be approximately 39,400 sf and the ground floor would occupy 88% of the lot surface area.

As noted under Option A, the Project is in the design phase and construction scheduling and phasing details are not available. Construction details under Option B would differ from Option A only in the duration of building construction, which would be approximately 24 months.



Figure 6. Landscape Plan

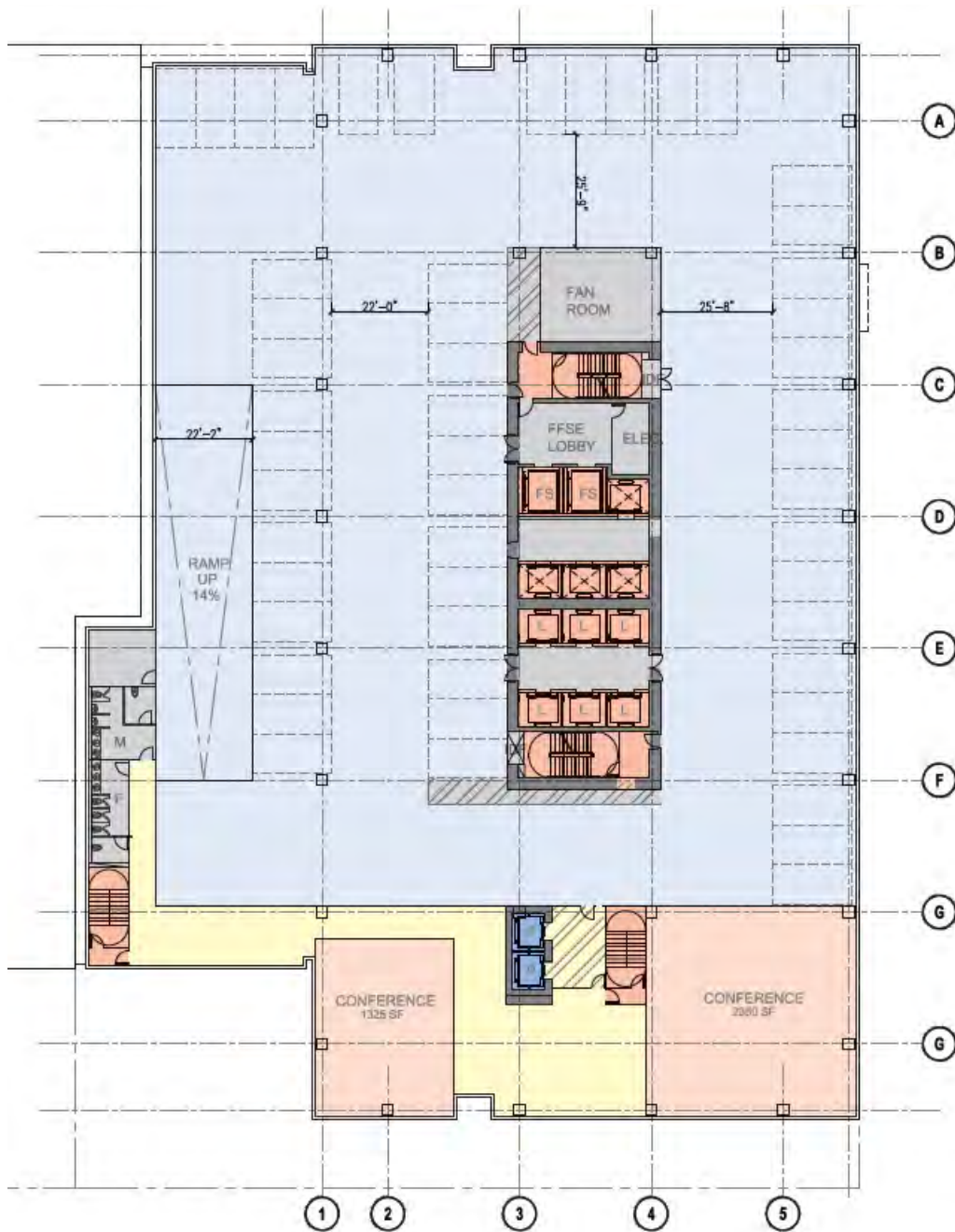
Source: SCB and Einwiller Kuehl



01

Figure 7a. Ground Floor Plan, Option A

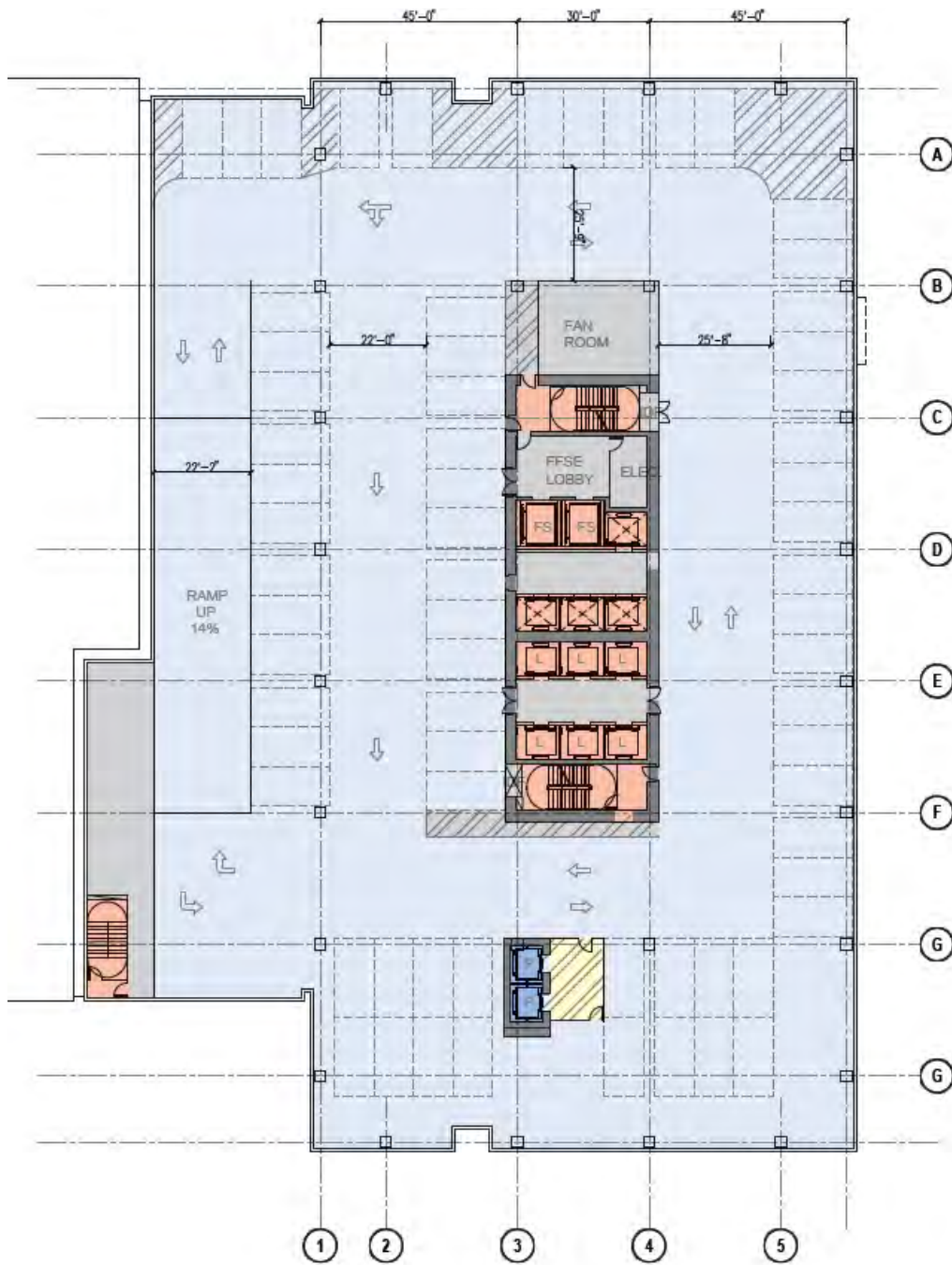
Source: SCB



02-03

Figure 7b. Garage Floor Plan – 51 Spaces, Option A

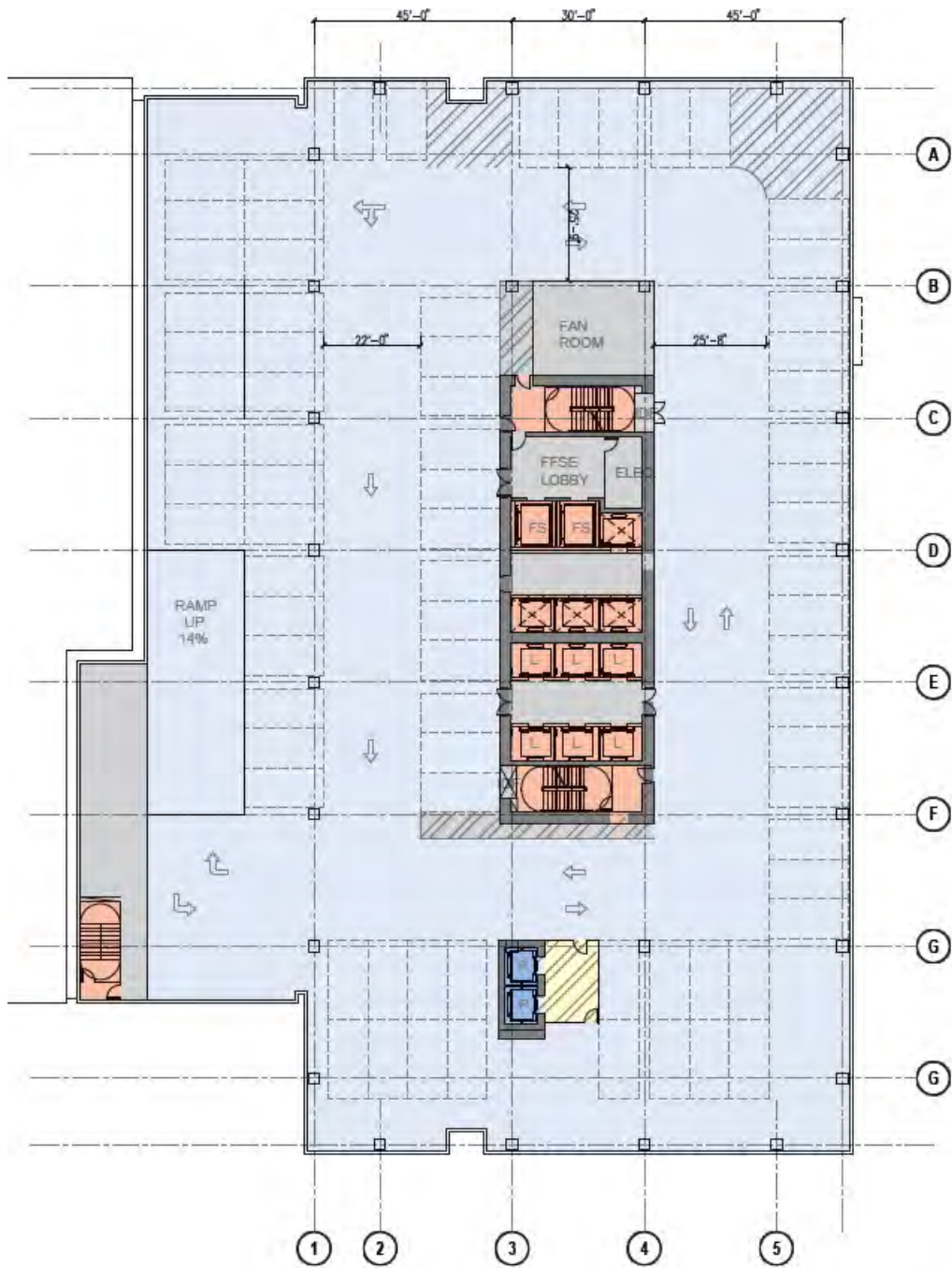
Source: SCB



04-05

Figure 7c. Garage Floor Plan – 67 Spaces, Option A

Source: SCB



06

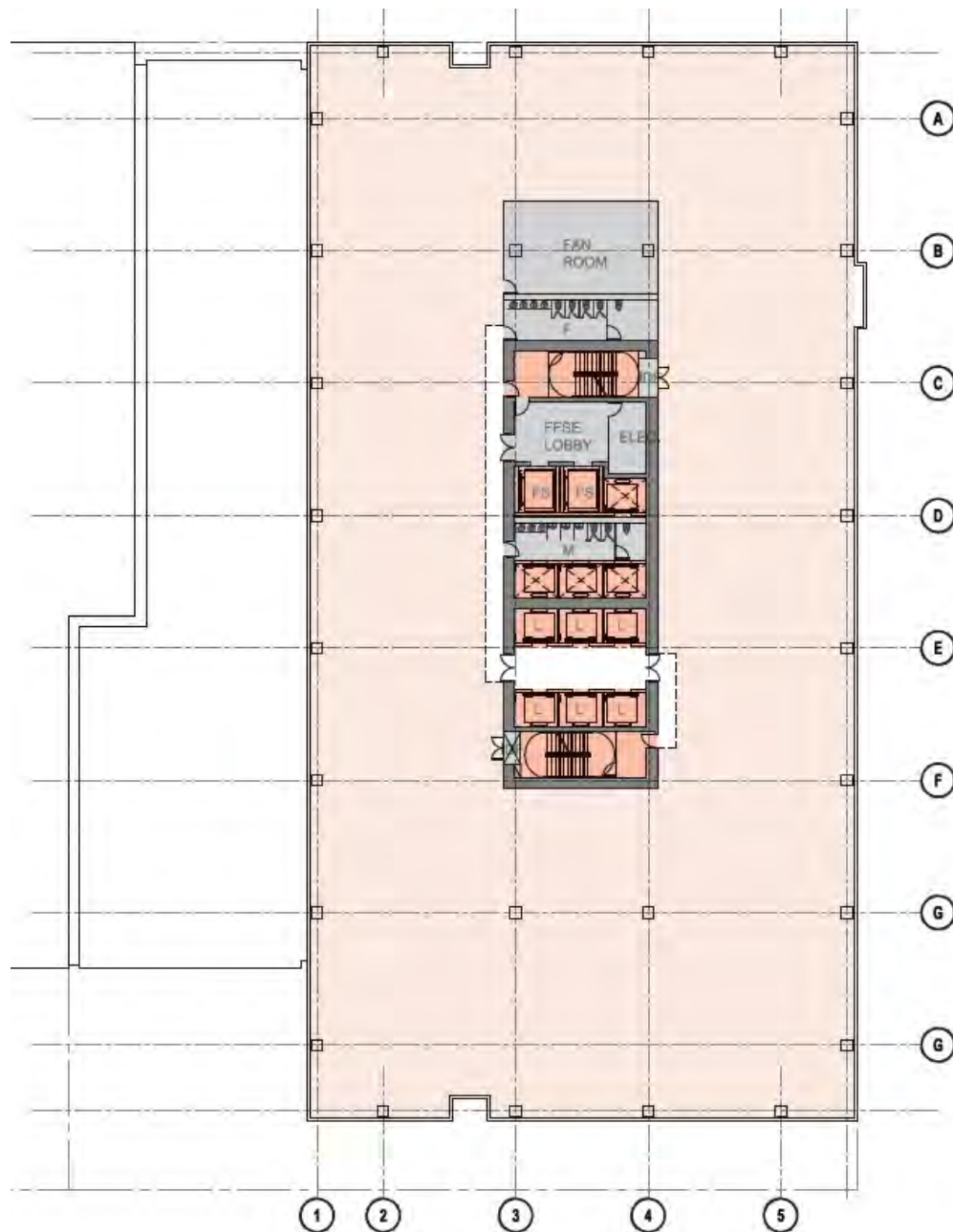
Figure 7d. Garage Floor Plan – 75 Spaces, Option A

Source: SCB



Figure 7e. Amenity and Office Floor Plan, Option A

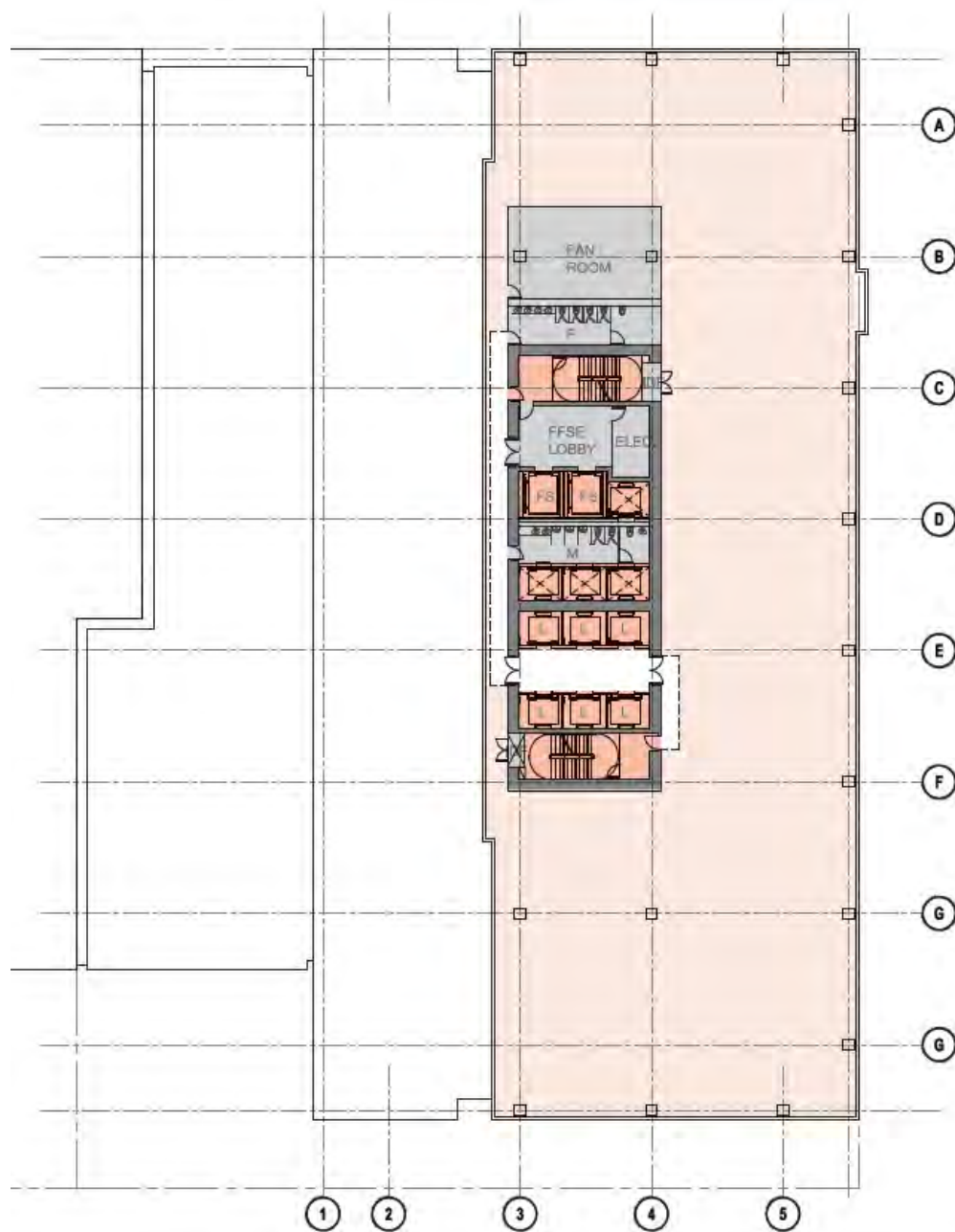
Source: SCB



08-19

Figure 7f. Typical Floor Plan, Option A

Source: SCB



20-21

Figure 7g. Penthouse Floor Plan, Option A

Source: SCB



Figure 8a. Ground Floor Plan, Option B

Source: SCB



Figure 8b. Garage Floor Plan – 44 Spaces, Option B

Source: SCB

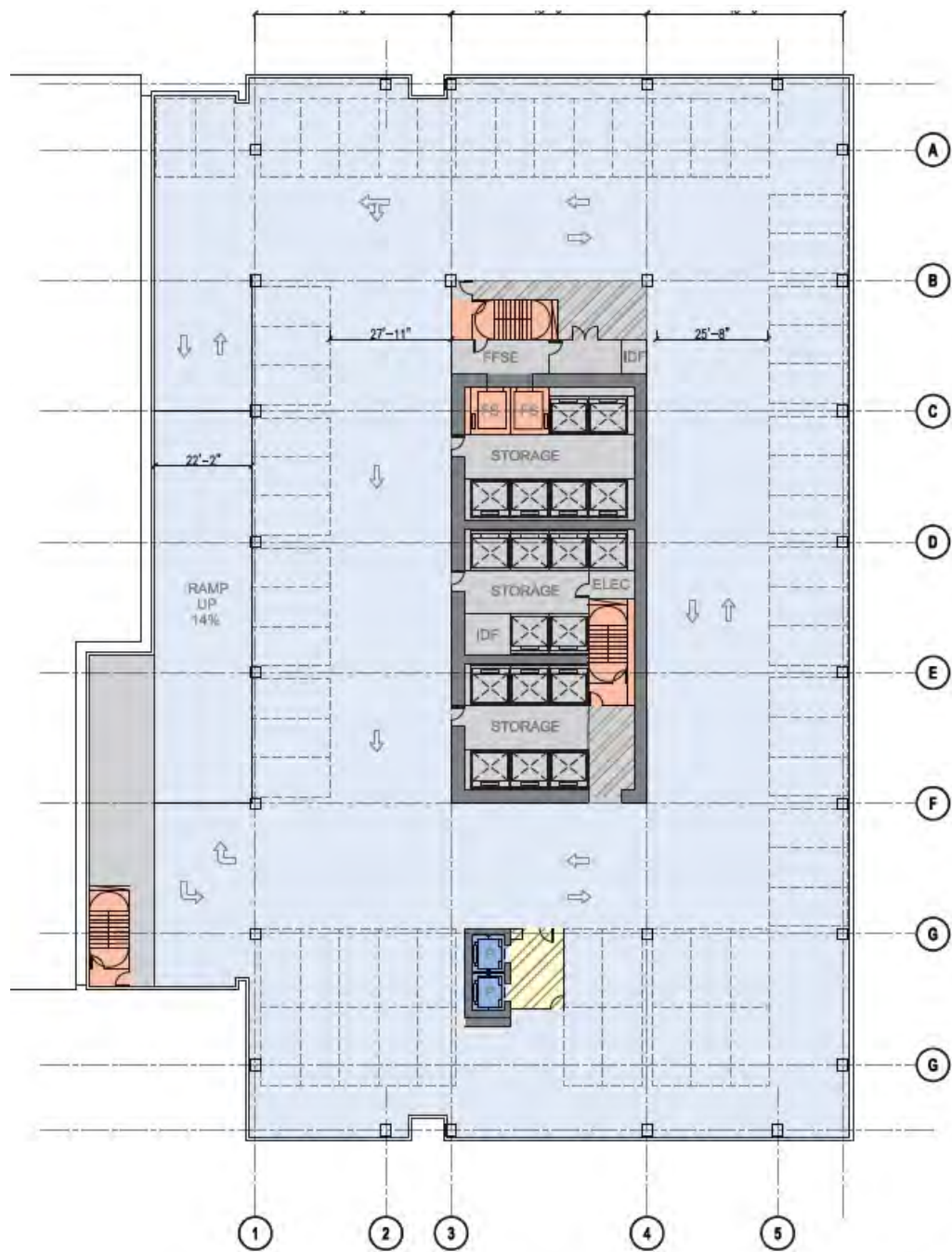


Figure 8c. Garage Floor Plan – 64 Spaces, Option B

Source: SCB

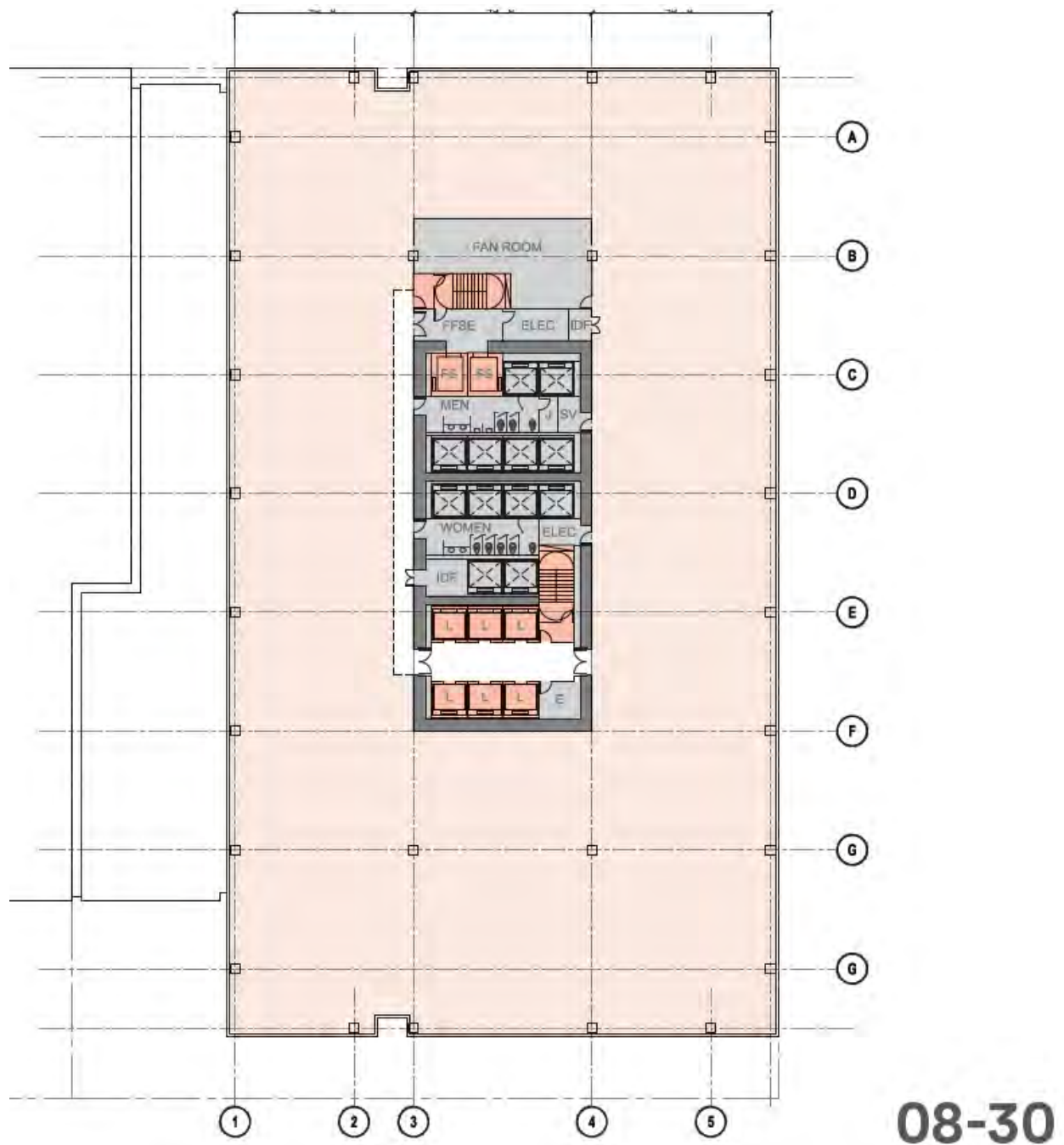


Figure 8d. Typical Floor Plan – Floors 8-30, Option B

Source: SCB

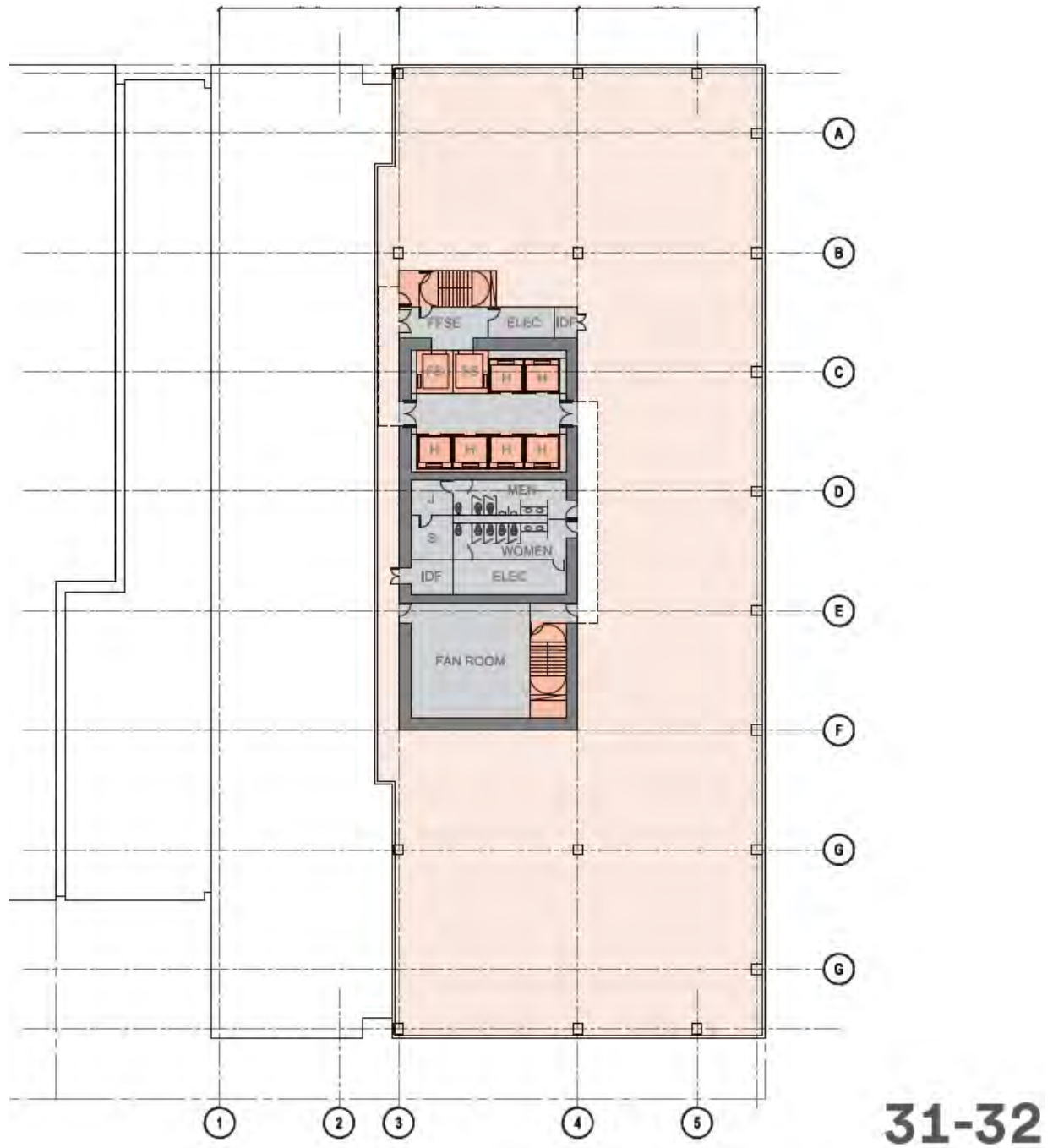


Figure 8e. Typical Floor Plan – Floors 31-31, Option B

Source: SCB

Project Approvals

Project Options A and B require the following discretionary actions/approvals, including without limitation:

Actions by the City of Oakland

- Major Design Review approval, pursuant to Chapter 17.136 of the Oakland Planning Code
- Conditional Use Permit for building over 200,000 sf in size
- Encroachment permits for work within and close to public rights-of-way (Chapter 12.08 of the Oakland Municipal Code)
- Grading permits and building permits

Actions by Other Agencies

A number of other public agencies' approval and authorization will or may be required to implement the Project. These agencies and their approvals include:

- Bay Area Air Quality Management District (BAAQMD) – Issuance of permits for installation and operation of the emergency generator.
- East Bay Municipal Utilities District – Approval of new service requests and water meter installation.
- Regional Water Quality Control Board (RWQCB) – Acceptance of a Notice of Intent to obtain coverage under the General Construction Activity Storm Water Permit, and Notice of Termination after construction is complete. Granting of required clearances to confirm that all applicable standards, regulations, and conditions for all previous contamination at the site have been met.

VI. Summary of Findings

An evaluation of the proposed Project options is provided in the CEQA Analysis below. This evaluation concludes that the Project qualifies for an exemption from additional environmental review and the Project is consistent with the development density and land use characteristics established by existing zoning and General Plan policies for which an EIR was certified (i.e., the Program EIRs). As such, the Project would be required to comply with the applicable mitigation measures identified in the Program EIRs, as well as any applicable City of Oakland SCAs (see Attachment A for a complete list of SCAs referred to and required by this CEQA Analysis). With implementation of the applicable mitigation measures and SCAs, the project would not result in a substantial increase in the severity of significant impacts that were previously identified in the General Plan or any new significant impacts that were not previously identified in the prior EIRs.

In accordance with Public Resources Code Sections 21083.3, 21094.5, and 21166 and State CEQA Guidelines Sections 15168, 15180, 15183, and 15332, and as set forth in the CEQA Analysis below, the Project qualifies for an exemption because the following findings can be made:

- **Class 32 Exemption:** The Project is of a class of urban infill projects which have been determined by the State Secretary for Resources not to have a significant effect on the environment and which are therefore exempt from the provisions of CEQA. The Project does not have a reasonable probability of having a significant effect on the environment due to unusual circumstances that would pose an exception to this determination. The Project is consistent with Criterion 15332 (a), (b), (c), (d), and (e), and no exceptions per CEQA Guidelines Section 15300.2 apply to the Project that have not been previously identified and mitigated under the City of Oakland General Plan and its supporting EIRs. In accordance with CEQA Guidelines Section 15332, the Project is exempt from further environmental review.
- **Addendum:** The analysis conducted indicates that the preparation of an addendum to the 2011 CDURP Amendments EIR is appropriate. The conclusions reached in the 2011 CDURP Amendments EIR remain valid, and no supplemental environmental review is required for the Project. The Project would not cause new significant impacts that were not previously identified in the 2011 CDURP Amendments EIR or result in a substantial increase in the severity of previously identified significant impacts. No new mitigation measures would be necessary to reduce significant impacts. No changes have occurred with respect to the circumstances surrounding the 2011 CDURP Amendments EIR that would cause significant environmental impacts to which the Project would contribute considerably, and no new information has been put forward that shows that the Project would cause significant environmental impacts. Therefore, no supplemental environmental review is required beyond this addendum, in accordance with Public Resources Code Section 21166 and CEQA Guidelines Sections 15162, 15164, 15168, and 15180.
- **Community Plan Exemption:** The following analysis demonstrates that the Project is consistent with the development density established by existing zoning and General Plan policies for which an EIR was certified (i.e., the Program EIRs). The Project is consistent with the LUTE and the CDURP and will not result in significant impacts that were not previously identified as significant project-level, cumulative, or offsite effects in the LUTE EIR and 2011 CDURP Amendments EIR.
- **Program EIRs and Redevelopment Projects:** The analysis in the 2011 CDURP Amendments EIR and in this CEQA Analysis demonstrates that the Project would not result in substantial changes or involve new information that would warrant preparation of a subsequent EIR, per CEQA Guidelines Section 15162, because the level of development proposed for the site is within the broader

development assumptions analyzed in the Previous EIRs. The effects of the Project have been addressed in those EIRs and no further environmental documents are required in accordance with CEQA Guidelines Sections CEQA Guidelines Sections 15168 and 15180.

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

Darin Ranelletti
Environmental Compliance Officer

Date

VII. Class 32 Categorical Exemption Overview

Article 19 of the CEQA Guidelines Sections 15300 to 15333, includes a list of classes of projects determined to not have a significant effect on the environment, and therefore are exempt from CEQA. Among the classes of projects that are exempt from CEQA review are those projects that urban infill development, as defined by CEQA Guidelines Section 15332 (Class 32 exemption). Infill projects must meet the following conditions to be exempt:

- (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.*

Even if a project is ordinarily exempt under any of the potential categorical exemptions, CEQA Guidelines Section 15300.2 provides specific instances where exceptions to otherwise applicable exemptions apply. In these cases, the CEQA exemption would not apply to a project. Exceptions to a categorical exemption would occur under the following circumstances:

- (a) *Location. Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located. A project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.*
- (b) *Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.*
- (c) *Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.*
- (d) *Scenic Highways. A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway. This does not apply to improvements which are required as mitigation by an adopted negative declaration or certified EIR.*
- (e) *Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.*
- (f) *Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of a historical resource.*

The analysis presented in the following section provides substantial evidence that the Project options properly qualify for an exemption under CEQA Guidelines Section 15332 as Class 32 urban infill development, and would **not** have a significant effect on the environment. In addition, the analysis also

presents substantial evidence that there are **no exceptions** that apply to the Project or its site, that the Project options would not have a new significant effect on the environment, and that the Class 32 exemption remains applicable.

Further, as outlined in Section IV–Purpose and Summary, the exemption and exception analyses in Section–VIII, Class 32 Categorical Exemption Analysis, and Section IX–Exceptions to Categorical Exemptions, as well as Attachments B and C, provide substantial evidence to support the use of the:

- Addendum;
- Community Plan Exemption; and/or
- Program EIRs and Redevelopment Projects.

VIII. Class 32 Categorical Exemption Analysis

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

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

Yes No

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

General Plan

The General Plan land use designation for the site is CBD. The intent of the CBD classification is to encourage, support, and enhance the downtown area as a high density, mixed-use urban center of regional importance. The CBD classification includes a mix of large-scale offices, commercial, retail, urban high-rise residential, institutional, open space, cultural, educational, arts, entertainment, service, community facilities, and visitor uses.

Development of either Project option would result in an urban high-rise commercial development with retail space, which is consistent with the CBD intent. The Project is also aligned with policies set forth in the LUTE of the General Plan as listed below.

- *Policy D2.1 Enhancing the Downtown. Downtown development should be visually interesting, harmonize with its surroundings, respect and enhance important views in and of the downtown, respect the character, history, and pedestrian-orientation of the downtown, and contribute to an attractive skyline.*

The Project design would be consistent with other newer high-rise developments in the area. The Project design would comply with the City's design standards and respects the surrounding streetscape, as specified in the Planning Code and subject to the City's design review process.

- *Policy D3.2 Incorporating Parking Facilities. New parking facilities for cars and bicycles should be incorporated into the design of any project in a manner that encourages and promotes safe pedestrian activity.*

The Project design includes a parking garage, which would accommodate from 280 (Option A) to 352 (Option B) vehicle parking spaces, depending on the option chosen for development.

- *Policy D6.1 Developing Vacant Lots. Construction on vacant land or to replace surface parking lots should be encouraged throughout downtown, where possible.*

The Project site is currently a surface parking lot. The Project would redevelop the site with a commercial building that includes ground floor retail, podium level parking, and an office tower.

- *Policy D8.1 Locating Office Development. New large scale office development should be primarily located along the Broadway corridor south of Grand Avenue, with concentrations at the 12th Street and 19th street BART stations. The height of office development should respect the Lake Merritt edge. Small scale offices should be allowed throughout the downtown, including in the downtown neighborhoods, when compatible with the character of surrounding development.*

The Project would be a large-scale office development located within the Broadway corridor south of Grand Avenue and approximately 0.25 mile from the 19th Street Oakland BART Station. The Project site is within Height Area 7, for which there is no maximum building height and a maximum podium height of 120 feet.

Therefore, Project options A and B would be consistent with the General Plan policies detailed above as either Project option would construct commercial uses at densities consistent with the General Plan.

Zoning

The Project site is zoned as CBD-C, per the City of Oakland Planning Code Section 17.58.01. This section states that the intent of the CBD-C zone is to create, maintain, and enhance areas of the Central Business District appropriate for a wide range of ground-floor office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities.

The Project proposes ground-floor retail use (approximately 11,380 sf under Option A and 8,705 sf under Option B) along the 21st Street and Kaiser Plaza frontage and office uses in the upper floors. The proposed design complies with design standards and regulations of the Planning Code, including but not limited to the following:

- The podium height under Option A would be approximately 75 feet and the total building height would be approximately 319 feet. The podium height under Option B would be approximately 88 feet and the total building height would be approximately 472 feet. The zoning district CBD-C, Height Area 7, allows for a maximum podium height of 120 feet; there is no maximum building height pursuant to the Planning Code, Table 17.58.04. The Project would be consistent with the maximum podium height.
- The building would conform to the zero-lot line setback pursuant to the Planning Code, Table 17.58.03.

Therefore, both Project options adhere to the criteria of CEQA Guidelines Section 15332(a) as being consistent with both 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 site is within the incorporated limits of the City of Oakland on a 1.02-acre site, and is entirely surrounded by parcels developed with urban land uses and paved public streets as described above in the Project Description and shown in Figure 4. Therefore, both Project options are consistent with the Section 15332(b).

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

Yes No

- ☒ ☐ The project site has no value as habitat for endangered, rare or threatened species.

The Project site is a surface parking lot and is entirely paved. Wildlife use in the area is expected to be relatively low due to the absence of suitable habitat, the proximity of streets and development, and the

lack of protective cover. Special-status species are not expected to inhabit or use the site because of a lack of suitable habitat, prior disturbance, and the current level of human activity. In addition, the City of Oakland's Open Space, Conservation, and Recreation (OSCAR) Element indicates that there are no known endangered, rare, or threatened species on or within the immediate vicinity of the Project site.⁷

Both Project options would result in the construction of a high-rise tower proximate to Lake Merritt in an area of downtown Oakland containing other high-rise buildings. The Project would not interfere substantially with the movement of any native resident or migratory wildlife species, but could result in increased migratory bird mortality, considering the proximity of Lake Merritt and the site's adjacency to a vegetated roof-top containing numerous mature trees, which may serve as an attractant to migratory or other birds using Lake Merritt. This impact would be less than significant. Implementation of **SCA-BIO-1: Bird Collision Reduction Measures** is recommended to reduce the potential for bird collision impacts.

The Project site has no value as habitat for endangered, rare or threatened species and both Project options are consistent with Section 15332(c).

Criterion §15332(d): Traffic, Noise, Air Quality, Water Quality

Yes No

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

The analysis below describes the Project effects for the resource topics in this criterion, organized as follows: traffic, noise, air quality, and water quality.

Traffic

Senate Bill 743 creates a process to modify the 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. Effective October 2016, the City of Oakland has updated its CEQA Thresholds of Significance as they relate to transportation. The update 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 GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. The new Thresholds replace LOS with vehicle miles traveled (VMT) criteria to determine whether a project causes a significant impact on the environment related to transportation. Subsequent to this update, the City of Oakland released revised guidelines for the review of transportation issues associated with land use development projects. These guidelines became effective April 18, 2017. In conformance with current City guidelines, a VMT assessment was prepared for the Project by Fehr and Peers (**Attachment D**). The VMT assessment found that the Project would not result in significant impacts under the new thresholds, as summarized below.

⁷ City of Oakland, 1996. General Plan, Open Space, Conservation, and Recreation (OSCAR) Element, Chapter 3, Tables 5 and 6, pp. 3-42-3-43.

Conflicts with Plans, Ordinances, or Policies Relating to Safety, or Performance of the Circulation System

Construction of the Project would result in temporary construction-period transportation, bicycle, and pedestrian movement disruption. The Project will be required to implement **SCA-TRAN-1: Construction Activity in the Public Right-of-Way**, which will ensure these impacts would be less than significant.

The Project is consistent with both the City's Pedestrian Master Plan and Bicycle Master Plan as it would not make major modifications to existing pedestrian or bicycle facilities in the surrounding areas and would not adversely affect installation of future facilities.

The LUTE and the City's Public Transit and Alternative Mode and Complete Streets policies state a strong preference for encouraging the use of non-automobile transportation modes, such as transit, bicycling, and walking. The Project would encourage the use of non-automobile transportation modes by providing commercial uses in a dense, walkable urban environment that is well-served by local and regional transit (e.g., the 19th Street BART station and numerous AC Transit bus routes within 0.25 mile of the Project site). Development of the Project would not have an impact on AC Transit or BART services in the area. The Project would therefore be consistent with adopted transportation policies, plans, and ordinances addressing the safety and performance of public transit.

Development of the Project would increase vehicular traffic in the vicinity; however, the increase in traffic generated by the Project would be accommodated by existing roadways. The Project would be consistent with adopted transportation policies, plans, and ordinances addressing the safety and performance of the circulation system.

Emergency vehicles would access the site via 21st and 22nd streets. Development of the Project would not result in inadequate emergency access.

Development of the Project would not conflict with adopted transportation policies, plans, or ordinances addressing the safety or performance of the circulation system, and will be required to comply with **SCA-TRANS-1: Construction Activity in the Public Right-of-Way** and **SCA-TRANS-2: Transportation and Parking Demand Management**. The Project would not cause a significant impact on the Alameda County Congestion Management Program or the Metropolitan Transportation System roadways in the vicinity. The Project would be consistent with policies, plans, and programs supporting public transit, bicycle, and pedestrian uses. Impacts would be less than significant.

Vehicle Miles Traveled Assessment

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 percent or more below the regional average, as illustrated on maps provided by MTC

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 Stop⁸ and satisfies the following:

- Has a FAR of more than 0.75
- Includes less parking for use by residents, customers, or employees of the project than required (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site)
- Is consistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Transportation Commission)

The Project would generate more than 100 trips per day and therefore does not meet the small project screening criterion.

The Project satisfies the Low-VMT Area screening criterion. As shown in **Table 2**, the 2020 average daily VMT per capita in transportation analysis zone (TAZ) 971 (the TAZ in which the Project site is located) is 12.7, which is below the 2020 regional average daily VMT per capita of 21.8. Because the Project site is in an area where existing VMT is 15 percent or less than the 2020 regional average, the Project would not result in substantial additional VMT per capita and impacts would be less than significant.

Table 2: Daily Vehicle Miles Traveled Per Capita

Land Use	Bay Area				TAZ 971	
	2020		2040		2020	2040
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%		
Office (VMT per worker)	21.8	18.5	20.3	17.3	12.7	12.0

Source: Fehr and Peers VMT Assessment included in Attachment D.

Additionally, the 2040 average daily VMT per capita in the Project TAZ is more than 15 percent below the regional average. Therefore, it is presumed that the Project would not result in substantial additional VMT and project impacts with respect to VMT would be less than significant under 2040 conditions.

The Project also satisfies the Near Transit Stations screening criterion (Criterion #3). The Project is about 0.2 mile from the 19th Street BART Station and is within 0.5 mile of several frequent bus corridors, including: Broadway (Routes 51A with 10-minute peak headways), 20th Street (Routes 72, 72M, and 72R, with 10- to 12-minute peak headways), and Telegraph Avenue (Route 6 with 10-minute peak headways). The Project would satisfy Criterion #3 because it would also meet the following three conditions for this criterion:

- The Project has a FAR greater than 0.75 (Option A has an approximate FAR of 11.2, and Option B has an approximate FAR of 20).

⁸ 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.

- Option A would provide 280 parking spaces and Option B would provide 352 parking spaces, which correspond to approximately 0.61 parking space per 1,000 sf for Option A and approximately 0.41 parking space per 1,000 sf for Option B. The City of Oakland Municipal Code Section 17.116.080 has no parking minimum or maximum requirements for office developments in the CBD-C zone. Thus, the parking supply proposed by either Project option would satisfy City Code requirements. In addition, it is estimated that the parking supply provided by either Project option would be less than the current parking demand for office uses in downtown Oakland.⁹ Therefore, the Project would not provide more parking for use by residents, customers, or workers than other typical nearby uses, nor would it provide more parking than required by the City Code.
- The Project is within the Downtown Oakland Priority Development Area as defined by Plan Bay Area, and is therefore consistent with the region's Sustainable Communities Strategy.

Induced Automobile Travel

No roadway modifications or additions are planned as part of the Project. The Project would not induce automobile travel through roadway additions or modifications.

Conclusion

Construction activities associated with the Project could potentially temporarily disrupt transportation, bicycle, and pedestrian movement. Compliance with **SCA-TRANS-1: Construction Activity in the Public Right-of-Way** would reduce these potential impacts. The Project would not conflict with adopted transportation policies, plans, or ordinances addressing the safety or performance of the circulation system, and would be required to comply with **SCA-TRANS-2: Transportation and Parking Demand Management**.

Implementation of the City of Oakland's SCAs would lessen the Project's potential impacts related to construction activity in the public right-of-way and transportation and parking demand. With the implementation of the required SCAs listed in Attachment A at the end of this CEQA Analysis (for reference, these are SCA-TRANS-1 and SCA-TRANS-2), the Project would not result in significant effects related to traffic. Therefore, the Project is consistent with Section 15332(d), traffic.

Noise

Project construction would generate noise from activities such as site grading, foundation work, and framing. These construction activities would generate noise levels that could conflict with the City Noise Ordinance on a short-term and temporary basis. Implementation of **SCA-NOS-1: Construction Days/Hours**, **SCA-NOS-2: Construction Noise**, **SCA-NOS-3: Extreme Construction Noise**, and **SCA-NOS-4: Construction Noise Complaints** will be required for the Project to reduce the effects of construction noise by requiring reasonable limits on construction hours and implementation of a noise reduction program. These SCAs are comprehensive in their content and for practical purposes represent all feasible measures available to mitigate construction noise.

⁹ It is estimated that the proposed Project would have a parking demand of about 1.2 spaces per 1,000 square feet based on the assumptions that typical office developments have about 3.0 workers per 1,000 square feet and US Census data shows that about 40 percent of workers in downtown Oakland drive to work.

Operation of the Project would generate noise from new sources such as heating, ventilation, and air conditioning equipment, and from commercial uses. All future uses will be required to adhere to City of Oakland Planning Code regulations. Implementation of **SCA-NOS-5: Operational Noise** would require compliance with City of Oakland operational noise standards including for noise generated by the rooftop mechanical equipment (e.g., heating, ventilating, air conditioning, and refrigeration equipment) and delivery trucks, and require the incorporation of noise reduction measures into the building's design.

The increase in traffic noise associated with the Project has been fully accounted for in the 2011 CDURP Amendments EIR, which found less than significant impacts related to roadway noise. Development of the Project would not result in a substantial permanent increase above existing traffic noise levels, and would not generate significant traffic noise.

Implementation of the City of Oakland's SCAs would lessen the impacts of construction period noise and require compliance with City of Oakland operational noise standards including for noise generated by the HVAC systems and delivery trucks. With the implementation of the required SCAs listed above and included in Attachment A at the end of this CEQA Analysis (SCA-NOS-1, SCA-NOS-2, SCA-NOS-3, SCA-NOS-4, SCA-NOS-5), the development of either Project option would not result in significant effects related to noise and vibration. Therefore, both Project Option A and Project Option B are consistent with Section 15332(d), noise.

Air Quality

An Air Quality Analysis was prepared by Illingworth and Rodkin for the Project and is included as **Attachment E**.

Criteria Pollutants

Construction-period Emissions

Construction activities associated with the Project would generate fugitive dust in the short-term. Construction activities may result in significant quantities of fugitive dust emissions, including PM₁₀ and PM_{2.5}, on a temporary and intermittent basis during the construction period. Construction activities associated with the Project would also generate short-term emissions of criteria pollutants, but these emissions would not exceed City significance thresholds (see Tables 2.1 [Option B] and 2.2 [Option A] in Attachment E). Construction-related emissions are not peculiar because the Project would use standard construction equipment such as loaders, backhoes, cranes, and haul trucks, similar to other projects under construction in Oakland and the site's proximity to sensitive receptors is typical of other project sites in this urbanized area.

The applicant has committed to using best available control technologies for all off-road diesel equipment used for the Project and would meet Tier 4 (or equivalent) emissions standards. Emissions from off-road construction equipment that is equipped with a Tier 2 or Tier 3 engine and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type are equivalent to Tier 4 emissions standards. VDECS used for exhaust retrofits on older Tier 2 and 3 engines include diesel particulate filters and oxidation catalysts. Tier 4 engines already have incorporated these best available control technologies into the engine design and, therefore, need not be retrofitted.

Implementation of **SCA-AIR-1: Construction Management Plan** and **SCA-AIR-2: Construction-Related Air Pollutant Controls (Dust and Equipment Emissions)** will be required to ensure reductions in construction-period fugitive dust and criteria pollutant emissions. Compliance with the requirements found under the City Municipal Code (Section 15.36.100; Dust Control Measures) would also be

required. As described under SCA-AIR-2, enhanced controls for construction emissions would be implemented for the Project. Implementation of SCA-AIR-1, SCA-AIR-2, and compliance with the City's Dust Control Measures would ensure *less than significant* impacts related to construction-period fugitive dust and criteria pollutants.

Operational Emissions

The only source of stationary air pollutants identified with build-out of the Project is assumed to be an emergency back-up generator (see Tables 3.1 [Option B] and 3.2 [Option A] in Attachment E). The Project would not exceed applicable operational screening level sizes for criteria pollutants, and thus would not exceed the City thresholds. Impacts related to operational criteria pollutant emissions would be *less than significant*.

Toxic Air Contaminants

Construction-period Emissions

Construction activities associated with the Project would generate construction-related TAC emissions, specifically diesel particulate matter, from on-road haul trucks and off-road equipment exhaust emissions, resulting in increased cancer risk or non-cancer health concerns for nearby sensitive receptors. Due to the variable nature of construction activity, the generation of TAC emissions would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. As noted above, construction-related emissions are not peculiar because the Project would use standard construction equipment such as loaders, backhoes, cranes, and haul trucks, similar to other projects under construction in Oakland and the site's proximity to sensitive receptors is typical of other project sites in this urbanized area.

Implementation of **SCA-AIR-2: Construction-Related Air Pollutant Controls (Dust and Equipment Emissions)** will be required for the Project to ensure reductions in construction-period TAC emissions. Effective implementation of SCA-AIR-2 would reduce TAC emissions and resultant exposure to health risks below City significance thresholds for cancer and PM_{2.5} exposure. Implementation of SCA-AIR-2 (for construction-related air pollution controls) would also reduce health risks to sensitive receptors from temporary construction emissions of diesel particulate matter. The enhanced control measures for construction emissions under SCA-AIR-2 would apply for the Project. In accordance with SCA-AIR-2, all off-road diesel equipment will be equipped with engines certified to meet CARB's Tier 4 emission standards, which can reduce emissions of diesel particulate matter by at least 85 percent relative to equipment without emission control technologies installed.¹⁰ Tier 4 equipment is routinely used at construction sites throughout California and can feasibly be required by the City to reduce construction-related diesel particulate matter. Implementation of SCA-AIR-1 (for construction-related air pollution controls, including enhanced controls) would also reduce health risks to sensitive receptors from temporary construction emissions of diesel particulate matter.

Impacts would therefore be less than significant. There is nothing particular or unusual about the Project that would cause it to generate uncharacteristically high diesel particulate matter and PM_{2.5} emissions during construction.

¹⁰ California Air Resources Board 2015. Frequently Asked Questions; Regulation for In-Use Off-Road Diesel-Fueled Fleets. Revised December.

Operational Emissions

The commercial uses associated with the Project would not result in significant ground-level concentrations of TACs. The Project would include a back-up diesel generator, the operation of which would generate TACs and result in a cancer risk of 22.6 in 1 million, exceeding the BAAQMD significance threshold of 10 in 1 million. Implementation of **SCA-AIR-3: Stationary Sources of Air Pollution (Toxic Air Contaminants)** will be applicable and require incorporation of identified health risk reduction measures or a health risk assessment demonstrating that the health risk is at or below acceptable levels prior to permitting such a generator. Implementation of the preceding recommended measures would further reduce on-site diesel exhaust emissions, resulting in *less than significant* impacts.

The Project would not otherwise have the potential to act as a substantial source of health risk to others.

Water Quality

The Project site is in a highly urbanized environment. Lake Merritt, which is the nearest surface water body, is approximately 650 feet to the east and is separated from the Project site by urban development. There are no other lakes, creeks, or other surface waters in the immediate proximity.

Construction of the Project under Option A and Option B would involve removal of the parking lot, grading, and construction on an approximately 1-acre site, which could result in erosion and/or sedimentation of downstream receiving waters. A Stormwater Pollution Prevention Plan (SWPPP) is required for coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB).

The Project is high-density, within 0.25 mile of a transit hub, and does not include surface parking, therefore Project Options A and B would qualify for 100 percent Low Impact Development (LID) treatment reduction credits which allow for non-LID treatment (per Provision C.3 of the Municipal Regional Permit¹¹). The Project under both options would incorporate source control measures as well as direct all storm drainage from the building roof and site hardscape to a media filter vault, treating 100 percent of the site's impervious surface runoff using Bay Area Stormwater Management Agencies Association-approved media filter devices (**Figure 9**).

The Project under Option A and Option B would require excavation for construction of the building foundation. As indicated in City of Oakland Code of Ordinance Section 15.04.660, projects within the City that propose to excavate more than 500 cubic yards of soil are required to obtain a grading permit. Both Project options would excavate more than 500 cubic yards. The grading permit requires the Project to comply with local and state construction requirements, including the California Building Code, for the design and construction of the Project. **SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction** would reduce the Project's potential to cause erosion and sedimentation from construction activities.

Under the existing condition, the relatively flat Project site is entirely paved with impervious surfaces. The total post-Project impervious surface area would not change, and the potential of the Project to substantially alter drainage patterns or increase the flow of runoff would not be significant. The Project

¹¹ California RWQCB, 2015. San Francisco Bay Region Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049, NPDES Permit No. CAS612008. November 19.

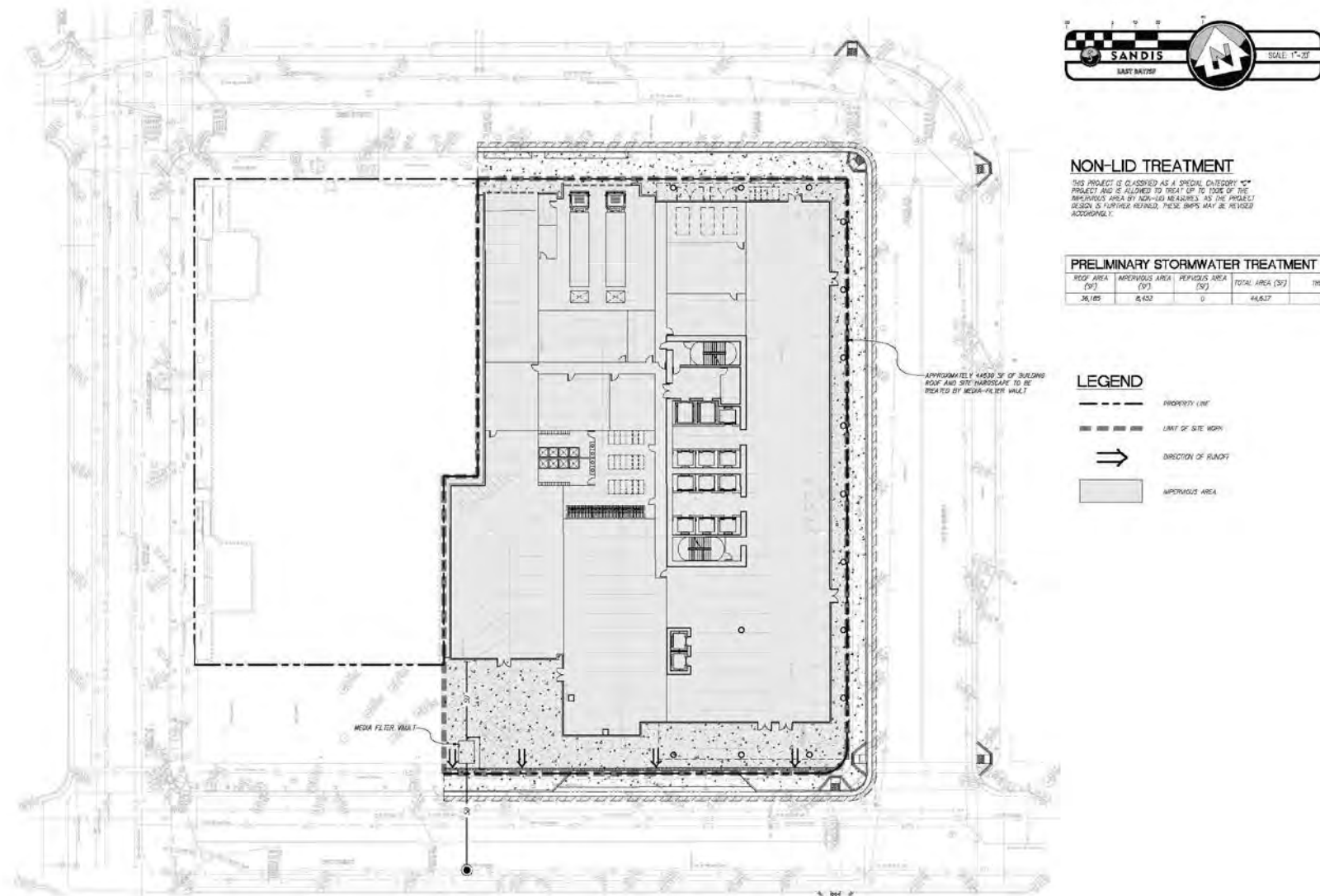


Figure 9. Project Stormwater Management, Options A and B

would also incorporate stormwater treatment measures in compliance with the C.3 requirements and implement the **SCA-HYD-2: NPDES C.3 Stormwater Requirements for Regulated Projects**.

With implementation of the required SCAs listed in Attachment A at the end of the CEQA Analysis (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, development of the Project site would not result in significant effects related to water quality and both Project Option A and Project Option B are consistent with Section 15332(d), water quality.

Criterion §15332(e): Utilities and Public Services

Yes No

☒ ☐ The site can be adequately served by all required utilities and public services.

On-site utilities would include storm drainage, energy, 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. Development of the Project would increase demand on utilities and service systems, but not to a substantial degree that it would impose a burden on existing utilities and service systems. The applicant will pay applicable Sewer Mitigation Fees, which would be used either to replace pipes as part of the local collection system repair, or to perform inflow and infiltration rehabilitation projects off-site. Impacts related to utilities would be less than significant.

With implementation of the required SCAs listed in Attachment A at the end of the CEQA Analysis (for reference, these are **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. Impacts related to utilities and service systems would be less than significant with implementation of SCAs UTIL-1, UTIL-2, UTIL-3, UTIL-4, UTIL-5, and UTIL-6.

Development of the Project would slightly increase the demand for local fire and police service and result in an associated increase in service calls, but not to an extent that would result in the need for new or physically altered fire or police protection facilities. The Project would be subject to the policies, regulations, standards, and SCAs of the City, including appropriate standards for emergency access roads, emergency water supply, and fire preparedness, capacity, and response. Impacts related to public services would be ***less than significant***.

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.

IX. Exceptions to Categorical Exemptions Checklist

Under the Class 32 Categorical Exemption Overview, even if a project is ordinarily exempt under any of the potential categorical exemptions, CEQA Guidelines Section 15300.2 provides specific instances where exceptions to otherwise applicable exemptions apply. The following section addresses whether any of the exceptions to the CEQA exemption apply to the Project, consistent with CEQA Guidelines Section 15300.2.

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 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 and is provided here for information purposes only. There are no environmental resources of hazardous or critical concern that are designated, precisely mapped or officially adopted near the Project site, or that could be adversely affected by the Project. Therefore, exception under CEQA Guidelines Section 15300.2(a) does not apply to 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?

As demonstrated under Criterion Section 15332(a), General Plan and Zoning Consistency, the Project is consistent with the development density allowed under the General Plan and zoning for the site. There are no peculiar aspects, other than those evaluated herein, that would increase the severity of any of the previously identified significant cumulative effects in the Program EIRs.

Pursuant to the streamlining provisions of CEQA Guidelines Sections 15183, the cumulative effect of successive projects of the same type in the same place, over time would not be significant. Community Plan Exemption findings are provided in Attachment C of this CEQA Analysis. This additional exemption analysis presents findings that an exception under CEQA Guidelines Section 15300.2(b) regarding cumulative effects does not apply to the Project.

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 that may result in a significant effect on the environment. The Project is consistent with the development density allowed under the General Plan and zoning for the site and proposes an office building in an urban downtown area surrounded by similar uses. Since there are no unusual circumstances, there are no significant environmental impacts due to unusual circumstances. Therefore, the exception under CEQA Guidelines Section 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 does not contain trees, historic buildings, rock outcroppings or similar visual resources, and is not visible from any state scenic highways described in the General Plan's Scenic Highway Element or as identified by California Department of Transportation.¹¹ The Oakland segment of Interstate 580 (I-580)¹² is a designated scenic highway; however, with the surrounding high-rise urban development and the distance of the Project site from I-580, development of either Option A or Option B would have a negligible effect on views from the highway. The Lake Merritt Historic District area of potential impact has the rough boundaries of the lake, Lakeside Park, and one parcel deep around the perimeter of the lake. Neither of the proposed Project options, however, would impact this Historic District (see also discussion under Criterion 15300.2(f), Historical Resources). Therefore, the exception under CEQA Guidelines Section 15300.2(d) does not apply to either Project option.

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?

The provisions of Government Code Section 65962.5 are commonly referred to as the "Cortese List." The provisions require the Department of Toxic Substance Control (DTSC), the SWRCB, the California Department of Public Health (DPH), and the California Department of Resources Recycling and Recovery to submit information pertaining to sites associated with solid waste disposal, hazardous waste disposal, leaking underground tank sites, and/or hazardous materials releases to the Secretary of California Environmental Protection Agency (CalEPA). The Project site is not identified on any lists compiled

¹¹ Department of Transportation, California. 2016. *Officially Designated State Scenic Highways and Historic Parkways, Alameda County*. Accessed March 25. Website: www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

¹² Department of Transportation, California. 2016. *Route 580 – Scenic Highway*. Accessed March 25. Website: www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

pursuant to Section 65962.5 of the Government Code;¹³ therefore, an exception to the exemption under CEQA Guidelines Section 15300.2(e) does not apply to the Project.

Construction and operational activities associated with development of the Project could result in the accidental release of hazardous materials and may involve the handling, transport, or use of small quantities of hazardous materials. The Project will be required to follow the applicable laws and regulations related to transportation, use, and storage of all hazardous materials and to safeguard workers and the public. The Project will be required to implement the City's **SCA-HAZ-1: Hazardous Materials Related to Construction** and **SCA-HAZ-2: Hazardous Materials Business Plan**.

As noted in the LUTE EIR, hazardous substances are likely to be present within Oakland due to existing or historical land uses. Historical uses of hazardous substances were not subject to the current level of regulation, and previous handling, storage and management practices may have resulted in the contamination of soils or groundwater that has been previously unidentified. Although the identification of contaminants related to past uses on infill development sites is not peculiar as their existence is not different from the usual or normal, because the Project involves the redevelopment or change of use of a historically industrial or commercial site, it will therefore be subject to **SCA-HAZ-3: Hazardous Building Materials and Site Contamination**, which includes among its requirements the preparation of a Phase I Environmental Site Assessment.

Consistent with the requirements of CEQA, a determination of whether the Project would have a significant impact will occur as part of the preparation of this document prior to the approval of the Project and, where applicable, SCAs have been identified that will mitigate them. In some instances, exactly how the measures/conditions identified will be achieved awaits completion of future studies (e.g., the results of the Phase I Environmental Site Assessment), an approach that is legally permissible where measures/conditions are known to be feasible for the impact identified, where subsequent compliance with identified federal, state, or local regulations or requirements apply, where specific performance criteria is specified and required, and where the Project commits to developing measures that comply with the requirements and criteria identified.

Therefore, with the implementation of the required SCAs listed in Attachment A at the end of the CEQA Analysis (SCA-HAZ-1, SCA-HAZ-2, and SCA-HAZ-3), Project's potential impacts related to the disturbance of potential soil and/or groundwater contamination would not be significant. The exception to the exemption under CEQA Guidelines Section 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?

¹³ State Water Resources Control Board GeoTracker Database, website accessed May 23, 2016 at <http://geotracker.waterboards.ca.gov/>; Department of Toxic Substances Control EnviroStor Database, website accessed May 23, 2016 at <http://www.envirostor.dtsc.ca.gov/public/>.

Historic Architectural Resources

The Project site is a paved surface parking lot and there are no buildings on the site. Therefore, the Project would not have any direct impacts to historical resources. Historic resources in the immediate vicinity of the Project site include the Lake Merritt Historic District and the Kaiser Center building, which is a contributor to the District. The Project site is neither located within the District nor directly adjacent to the District, which has an area of potential impact consisting of the rough boundaries of Lake Merritt, Lakeside Park, and one parcel deep around the perimeter of the lake. The Project site lies one block from this area of potential impact. The Project would not indirectly materially impair the Historic District or the Kaiser Center building. While the Project office tower proposed under Option B would be substantially taller than extant towers in the Historic District, it would not adversely affect the District's integrity. Neither Project option would result in indirect substantial adverse changes to the significance of the District or the Kaiser Center building. The exception under CEQA Guidelines Section 15300.2(f) does not apply.

Archaeological Resources

The Project site in urbanized downtown Oakland, has been previously developed, and is surrounded by other urban development. While no archaeological research, investigations, or database searches have been conducted for the Project site, archaeological studies have been conducted for areas that are not far removed from the site.¹⁴ These studies indicate that the general area is potentially sensitive for archaeological and buried sites that are obscured by urban development, the area has low paleontological sensitivity and fossils could be discovered during excavation, and the inadvertent discovery of human remains during ground-disturbing activities could occur.

Implementation of **SCA-CUL-1: Archaeological and Paleontological Resources–Discovery During Construction** and **SCA-CUL-2: Human Remains–Discovery During Construction** will be required for the Project to ensure that appropriate procedures would be followed in the event of accidental discovery of archaeological resources or human remains to minimize potential risks of impact during Project construction. With required implementation of these SCAs, potential adverse effect on as-yet undiscovered archaeological and/or historic resources would not be significant. Therefore, the exception under CEQA Guidelines Section 15300.2(f) does not apply to the Project.

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?

Wind

Although the CDURP EIR concluded that impacts related to wind hazards would be less than significant in the plan area, it acknowledged that new high-rise structures amidst existing or other new high-rise structures can result in increases in adverse wind conditions and therefore required detailed wind studies for individual projects at least 100 feet tall and adjacent to the Oakland Estuary or Lake Merritt or located within downtown. Using City of Oakland significance threshold criteria, potential adverse

¹⁴ Kaiser Center Office Project Draft EIR, August 2010.

effects pertaining to wind hazards from new buildings within the downtown area of Oakland were considered as described below.

Under City of Oakland thresholds of significance, a project would have a significant wind impact if it would create winds that exceed 36 mph for more than one hour during daylight hours during the year. The wind analysis only needs to be done if the Project's height is 100 feet or greater (measured to the roof) and one of the following conditions exist: (a) the Project is located adjacent to a substantial water body (i.e., Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the Project is located in Downtown. The Project meets both conditions and therefore a wind study has been prepared for the Project by RWDI (**Attachment F**) based on City of Oakland significance threshold criteria.

As shown in Figures 1a through 1f of Attachment F, the wind study included the Project site and all relevant surrounding buildings and topography within a 1,200-foot radius of the site. Six conditions were studied: Existing, Existing plus Cumulative, Project Option A (or "Low Boy"), Project Option A plus Cumulative, Project Option B (or "Tall Boy"), and Project Option B plus Cumulative. Projects included in the cumulative modeling include the following:

- 2100 Telegraph Avenue
- 2270 Broadway
- 2305 Webster Street
- 2315 Valdez

Under Existing and Existing plus Cumulative wind conditions, none of the tested locations exceeded the City's hazard wind threshold of 36 miles per hour for more than 1 hour during daylight hours during the year. Similarly, none of the locations tested for Project Option A, Project Option A plus Cumulative, Project Option B, and Project Option B plus Cumulative exceeded the City of Oakland's wind hazard threshold of 36 miles per hour for more than 1 hour during daylight hours. As a result, the Project would not result in any significant impacts related to wind, which is consistent with the findings of the CDURP EIR.

Greenhouse Gases Emissions

Based on City of Oakland significance threshold criteria, potential Project-level impacts pertaining to greenhouse gas (GHG) emissions were also considered (see Attachment E) as summarized below.

Construction and operation of the Project would contribute additional sources of GHG emissions, though primarily through consumption of fuel for transportation and energy usage on an ongoing basis. The City's threshold of significance for GHGs would be exceeded if the Project's emissions exceed 1,100 metric tons carbon dioxide equivalent (MTCO₂e) per year *and* the efficiency threshold of 4.6 MTCO₂e per service population per year.

The Project's estimated CO₂e emissions exceeded the City's annual emissions threshold, but were below the efficiency-based threshold in terms of annual emissions per service population (see Attachment E), as summarized below. Therefore, the Project would not exceed the significance threshold identified above and thus would not have a significant impact in relation to GHG emissions.

The City does not have a separate threshold of significance for construction-related GHG emissions, though recommends quantification and a determination regarding significance in relation to meeting Assembly Bill 32 goals. Consistent with standard practice, the City requires that construction emissions be annualized over 40 years (an average building life) and added to the operational emissions as a conservative analysis.

The Project's GHG emissions were modeled using the California Emissions Estimator Model (CalEEMod). Details of the Project were used in the model analysis, otherwise, model defaults were used. Note that this is likely to result in conservative (overestimated) emissions as trip characteristics and trip lengths and the resultant vehicle emissions would be lower in this area than model defaults. CalEEMod inputs and results are included in Attachment E and summarized in **Table 3**.

Construction-period GHG emissions were estimated to be 1,172 MTCO₂e for Project Option A and 2,467 MTCO₂e for Project Option B.¹⁵ These are the emissions from on-site operation of construction equipment, vendor and hauling truck trips, and worker trips. 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.

Although the Project would use back-up diesel generators for elevator safety, project-specific stationary sources of GHGs would not generate emissions approaching the stationary source threshold of 10,000 MTCO₂e per year. Any new stationary sources will be subject to BAAQMD's requirement for New Source Review, and BAAQMD may impose conditions that would lead to emissions reductions from any new stationary sources that may be proposed.

The CalEEMod model, along with the Project vehicle trip generation rates, was used to predict daily operational GHG emissions associated with the Project. Annual operational emissions are predicted to be 4,717 MTCO₂e for Project Option A and 8,530 MTCO₂e for Project Option B. These emissions would exceed the BAAQMD threshold of 1,100 MTCO₂e/year. However, when a project is above the 1,100 MTCO₂e/year threshold, impacts can still be considered less than significant if the service population efficiency threshold of 4.6 is met.

As shown in Table 3, operation of the Project would not exceed the 4.6 MTCO₂e per service population threshold. The Project would therefore not result in a cumulatively considerable increase in GHG emissions. Impacts would be less than significant.

¹⁵ Construction-period GHG emissions have been annualized and added to the operational emissions analysis.

Table 3. Greenhouse Gas Emissions

Description	Option A MTCO₂e per Year	Option B MTCO₂e per Year
Energy Consumption Emissions, Operational	2,130	4,183
Mobile Emissions, Operational	2,107	3,400
Solid Waste Generation Emissions, Operational	209	414
Stationary Emissions, Operational	19	26
Water Usage Emissions, Operational	223	445
Project Emissions, Construction (averaged over 40 years)	29	62
Project Emissions, Total	4,717	8,530
Project Service Population	1,338	2,655
Project Emissions, Total (per Service Population)	3.5	3.2
<i>Project Service Population Significance Threshold</i>	<i>4.6</i>	<i>4.6</i>

Notes: CO₂e is carbon dioxide equivalent units, the standard measure of total greenhouse gases.

The project service population efficiency rate is based on the number of future full-time employees and is calculated by assuming 3 employees per 1,000 sf of retail or office space.

City SCAs that would contribute to minimizing potential GHG emissions from construction and operation of development projects would apply to the Project; they pertain to alternative transportation facilities (bicycles and BART), construction equipment emissions, transportation demand management, construction waste reduction and recycling, and California Green Building Standards (see Attachment A).

The Project would be served by the 19th Street BART station (within 0.25 mile), and numerous AC Transit stops within 0.5 mile of the Project site. The proximity of the Project to these transit opportunities would serve to reduce GHG emissions, as taken into account in the trip generation rates used in this analysis.

The Project would not conflict or otherwise interfere with the statewide GHG reduction measures identified in CARB's Scoping Plan.

Additionally, the Project would comply with the Oakland Energy and Climate Action Plan, current City Sustainability Programs, and General Plan policies and regulations regarding GHG reductions and other local, regional, and statewide plans, policies, and regulations that are related to the reduction of GHG emissions.

Because the Project would involve development of a commercial office building encompassing more than 250,000 sf of floor space, exceed BAAQMD GHG emissions screening criteria, and exceed at least one of the BAAQMD Thresholds of Significance (more than 1,100 MTCO₂e annually OR more than 4.6 MTCO₂e per service population annually), the Project is required to implement **SCA-GHG-1: Greenhouse Gas (GHG) Reduction Plan**. Other City SCAs that would contribute to minimizing potential GHG emissions from construction and operation of development projects would apply to the Project; they pertain to transportation demand management (SCA-TRANS-2), alternative transportation facilities

(SCA-TRANS-2), construction equipment emissions (SCA-AIR-1 and SCA-AIR-2), construction waste reduction and recycling (SCA-AIR-1 and SCA-UTIL-1), and California Green Building Standards (SCA-UTIL-4; see Attachment A). Overall, the Project would not have a significant GHG impact.

Acronyms and Terms

ABAG	Association of Bay Area Governments
AC Transit	Alameda–Contra Costa Transit District
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
CBD	Central Business District
CBD-C	Central Business District - Commercial
CEQA	California Environmental Quality Act
City	City of Oakland
EIR	Environmental Impact Report
GHG	greenhouse gas
I-580	Interstate 580
NPDES	National Pollution Discharge Elimination System
PM ₁₀	particulate matter, 10 micrometers or less
RWQCB	Regional Water Quality Control Board
SCA	Standard Condition of Approval
sf	square feet
SWRCB	State Water Resources Control Board
VMT	vehicle miles traveled

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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 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, Housing Element-related mitigation measures, 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, LUTE EIR—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—e.g., **SCA-AIR-1**, **SCA-AIR-2**. The SCA title and the SCA number that corresponds to the City's master SCA list are also provided—e.g., **SCA-AIR-1: Construction-Related Air Pollution (Dust and Equipment Emissions; #19)**.

Table 4. Standard Conditions of Approval for the Project

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

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
<i>b. Landscape Installation</i> 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. <i>c. Landscape Maintenance</i> 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.	Prior to building permit final Ongoing	Bureau of Planning N/A	Bureau of Building Bureau of Building
SCA-AES-3: Lighting. (#18) Proposed new exterior lighting fixtures shall be adequately shielded to a point below the light bulb and reflector to prevent unnecessary glare onto adjacent properties.	Prior to building permit final	N/A	Bureau of Building
AIR QUALITY			
SCA-AIR-1: Construction Management Plan. (#13) Prior to the issuance of the first construction-related permit, the project applicant and his/her general contractor shall submit a Construction Management Plan (CMP) for review and approval by the Bureau of Planning, Bureau of Building, and other relevant City departments such as the Fire Department and the Public Works Department as directed. The CMP shall contain measures to minimize potential construction impacts including measures to comply with all construction-related Conditions of Approval (and mitigation measures if applicable) such as dust control, construction emissions, hazardous materials, construction days/hours, construction traffic control, waste reduction and recycling, stormwater pollution prevention, noise control, complaint management, and cultural resource management (see applicable Conditions below). The CMP shall provide project-specific information including descriptive procedures, approval documentation, and drawings (such as a site logistics plan, fire safety plan, construction phasing plan,	Prior to Approval of Construction-Related Permit	Bureau of Planning, Bureau of Building, et al.	Bureau of Planning

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
proposed truck routes, traffic control plan, complaint management plan, construction worker parking plan, and litter/debris clean-up plan) that specify how potential construction impacts will be minimized and how each construction-related requirement will be satisfied throughout construction of the project.			
SCA-AIR-2: Construction-Related Air Pollution (Dust and Equipment Emissions). (#19) The project applicant shall implement all of the following applicable air pollution control measures during construction of the project: a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible. b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer). c. All visible mud or dirt track-out onto adjacent public roads 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	During construction	N/A	Bureau of Planning

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations"). i. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas. k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe. 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			

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
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-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.	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
BIOLOGICAL RESOURCES			
SCA-BIO-1: Bird Collision Reduction Measures. (#25) 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 all of the following: 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 that incorporate bird friendly treatments no more than two inches horizontally, four inches vertically, or both (the “two-by-four” rule), as explained below. 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: • 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	Prior to approval of construction-related permit	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
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. vi. Reduce light pollution. Examples include the following: • 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 15 to May 15) or fall (August 15 to November 30) migration. vii. Develop and implement a building operation and management manual that promotes bird safety. Example measures in the manual include the following: • 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			

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
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.			
CULTURAL RESOURCES			
SCA-CUL-1: Archaeological and Paleontological Resources – Discovery During Construction. (#29) Pursuant to CEQA Guidelines section 15064.5(f), in the event that any historic or prehistoric subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and the project applicant shall notify the City and consult with a qualified archaeologist or paleontologist, as applicable, to assess the significance of the find. In the case of discovery of paleontological resources, the assessment shall be done in accordance with the Society of Vertebrate Paleontology standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined unnecessary or infeasible by the City. Feasibility of avoidance shall be determined with consideration of factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted. Work may proceed on other parts of the project site while measures for the cultural resources are implemented. In the event of data recovery of archaeological resources, the project applicant shall submit an Archaeological Research Design and Treatment Plan (ARDTP) prepared by a qualified archaeologist for review and approval by the City. The ARDTP is required to identify how the proposed data recovery program would preserve the significant information the archaeological resource is expected to contain. The ARDTP shall identify the scientific/historic research questions	During construction	N/A	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
applicable to the expected resource, the data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. The ARDTP shall include the analysis and specify the curation and storage methods. Data recovery, in general, shall be limited to the portions of the archaeological resource that could be impacted by the proposed project. Destructive data recovery methods shall not be applied to portions of the archaeological resources if nondestructive methods are practicable. Because the intent of the ARDTP is to save as much of the archaeological resource as possible, including moving the resource, if feasible, preparation and implementation of the ARDTP would reduce the potential adverse impact to less than significant. The project applicant shall implement the ARDTP at his/her expense. In the event of excavation of paleontological resources, the project applicant shall submit an excavation plan prepared by a qualified paleontologist to the City for review and approval. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and/or a report prepared by a qualified paleontologist, as appropriate, according to current professional standards and at the expense of the project applicant.			
SCA-CUL-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.	During Construction	N/A	Bureau of Building

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GEOLOGY AND SOILS			
SCA-GEO-1: Construction-Related Permit(s). (#33) The project applicant shall obtain all required construction-related permits/approvals from the City. The project shall comply with all standards, requirements and conditions contained in construction-related codes, including but not limited to the Oakland Building Code and the Oakland Grading Regulations, to ensure structural integrity and safe construction.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building
SCA-GEO-2: Seismic Hazards Zone (Landslide/Liquefaction). (#36) The project applicant shall submit a site-specific geotechnical report, consistent with California Geological Survey Special Publication 117 (as amended), prepared by a registered geotechnical engineer for City review and approval containing at a minimum a description of the geological and geotechnical conditions at the site, an evaluation of site-specific seismic hazards based on geological and geotechnical conditions, and recommended measures to reduce potential impacts related to liquefaction and/or slope stability hazards. The project applicant shall implement the recommendations contained in the approved report during project design and construction.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building
GREENHOUSE GAS EMISSIONS			
SCA-GHG-1: Greenhouse Gas (GHG) Reduction Plan. (#38) <i>a. Greenhouse Gas (GHG) Reduction Plan Required</i> The project applicant shall retain a qualified air quality consultant to develop a Greenhouse Gas (GHG) Reduction Plan for City review and approval and shall implement the approved GHG Reduction Plan. The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below CEQA Thresholds of Significance (1,100 metric tons of CO ₂ e per year or 4.6 metric tons of CO ₂ e per year per service population) AND to reduce GHG emissions by 36 percent below the project's "adjusted" baseline GHG emissions (as explained below) to help achieve the City's goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a "business-as-usual" scenario with no consideration of project design features, or other energy efficiencies, (b) an "adjusted" baseline GHG emissions inventory for the project, taking into consideration energy	Prior to approval of construction-related permit	Bureau of Planning	N/A

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
efficiencies included as part of the project (including the City's Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase. Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD's latest CEQA Air Quality Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010, as may be revised), the California Attorney General's website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council. The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of "carbon credits") as explained below. The allowable locations of the GHG reduction measures include the following (listed in order of City preference): (1) the project site; (2) off-site within the City of Oakland; (3) off-site within the San Francisco Bay Area Air Basin; (4) off-site within the State of California; then (5) elsewhere in the United States. As with preferred locations for the implementation of all GHG reductions measures, the preference for carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of carbon credit purchases shall be based on current market value at the time purchased and shall be based on the project's operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan.			

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For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits.			
<i>b. GHG Reduction Plan Required Implementation During Construction</i> The project applicant shall implement the GHG Reduction Plan during construction of the project. For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be implemented during construction. For physical GHG reduction measures to be incorporated into off-site projects, the project applicant shall obtain all necessary permits/approvals and the measures shall be included on drawings and submitted to the City Planning Director or his/her designee for review and approval. These off-site improvements shall be installed prior to completion of the subject project (or prior to completion of the project phase for phased projects). For GHG reduction measures involving the purchase of carbon credits, evidence of the payment/purchase shall be submitted to the City for review and approval prior to completion of the project (or prior to completion of the project phase, for phased projects).	During construction	Bureau of Planning	Bureau of Building
<i>c. GHG Reduction Plan Implementation After Construction</i> The project applicant shall implement the GHG Reduction Plan after construction of the project (or at the completion of the project phase for phased projects). For operational GHG reduction measures to be incorporated into the project or off-site projects, the measures shall be implemented on an indefinite and ongoing basis. The project applicant shall satisfy the following requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. The GHG Reduction Plan requires regular periodic evaluation over the life of the project (generally estimated to be at least 40 years) to determine how the Plan is achieving required GHG emissions reductions over time, as well as the efficacy of the specific additional GHG reduction measures identified in the Plan. Annual Report. Implementation of the GHG reduction measures and related requirements shall be ensured through compliance with Conditions of Approval adopted for the project. Generally, starting two years after the City issues the first Certificate of Occupancy for the project, the project applicant shall prepare each year of the useful life of the project an Annual GHG	Ongoing	Bureau of Planning	Bureau of Planning

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
Emissions Reduction Report (“Annual Report”), for review and approval by the City Planning Director or his/her designee. The Annual Report shall be submitted to an independent reviewer of the City’s choosing, to be paid for by the project applicant. The Annual Report shall summarize the project’s implementation of GHG reduction measures over the preceding year, intended upcoming changes, compliance with the conditions of the Plan, and include a brief summary of the previous year’s Annual Report results (starting the second year). The Annual Report shall include a comparison of annual project emissions to the baseline emissions reported in the GHG Plan. The GHG Reduction Plan shall be considered fully attained when project emissions are less than either applicable numeric BAAQMD CEQA Thresholds AND GHG emissions are 36 percent below the project’s “adjusted” baseline GHG emissions, as confirmed by the City through an established monitoring program. Monitoring and reporting activities will continue at the City’s discretion, as discussed below. Corrective Procedure. If the third Annual Report, or any report thereafter, indicates that, in spite of the implementation of the GHG Reduction Plan, the project is not achieving the GHG reduction goal, the project applicant shall prepare a report for City review and approval, which proposes additional or revised GHG measures to better achieve the GHG emissions reduction goals, including without limitation, a discussion on the feasibility and effectiveness of the menu of other additional measures (“Corrective GHG Action Plan”). The project applicant shall then implement the approved Corrective GHG Action Plan. If, one year after the Corrective GHG Action Plan is implemented, the required GHG emissions reduction target is still not being achieved, or if the project applicant fails to submit a report at the times described above, or if the reports do not meet City requirements outlined above, the City may, in addition to its other remedies, (a) assess the project applicant a financial penalty based upon actual percentage reduction in GHG emissions as compared to the percent reduction in GHG emissions established in the GHG Reduction Plan; or (b) refer the matter to the City Planning Commission for scheduling of a compliance hearing to determine whether the project’s approvals should be revoked, altered or additional conditions of approval imposed.			

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The penalty as described in (a) above shall be determined by the City Planning Director or his/her designee and be commensurate with the percentage GHG emissions reduction not achieved (compared to the applicable numeric significance thresholds) or required percentage reduction from the “adjusted” baseline. In determining whether a financial penalty or other remedy is appropriate, the City shall not impose a penalty if the project applicant has made a good faith effort to comply with the GHG Reduction Plan. The City would only have the ability to impose a monetary penalty after a reasonable cure period and in accordance with the enforcement process outlined in Planning Code Chapter 17.152. If a financial penalty is imposed, such penalty sums shall be used by the City solely toward the implementation of the GHG Reduction Plan. Timeline Discretion and Summary. The City shall have the discretion to reasonably modify the timing of reporting, with reasonable notice and opportunity to comment by the applicant, to coincide with other related monitoring and reporting required for the project.			
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: - Follow manufacture’s recommendations for use, storage, and disposal of chemical products used in construction; - Avoid overtopping construction equipment fuel gas tanks; - During routine maintenance of construction equipment, properly contain and remove grease and oils; - Properly dispose of discarded containers of fuels and other chemicals; - 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	During construction	N/A	Bureau of Building

[illegible]

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
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. <i>c. Health and Safety Plan Required</i> 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. <i>d. Best Management Practices (BMPs) Required for Contaminated Sites</i> The project applicant shall ensure that Best Management Practices (BMPs) are implemented by the contractor during construction to minimize potential soil and groundwater hazards. These shall include the following: i. Soil generated by construction activities shall be stockpiled on-site in a secure and safe manner. All contaminated soils determined to be hazardous or non-hazardous waste must be adequately profiled (sampled) prior to acceptable reuse or disposal at an appropriate off-site facility. Specific sampling and handling and transport procedures for reuse or disposal shall be in accordance with applicable local, state, and federal requirements. ii. Groundwater pumped from the subsurface shall be contained on-site in a secure and safe manner, prior to treatment and disposal, to ensure environmental and health issues are resolved pursuant to applicable laws and policies. Engineering controls shall be utilized, which include impermeable barriers to prohibit groundwater and vapor intrusion into the building.	Prior to approval of construction-related permit During construction	Bureau of Building N/A	Bureau of Building Bureau of Building
SCA-HAZ-3: Hazardous Materials Business Plan. (#41) 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	Prior to building permit final	Oakland Fire Department	Oakland Fire Department

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
Hazardous Materials Business Plan shall include the following: a. The types of hazardous materials or chemicals stored and/or used on-site, such as petroleum fuel products, lubricants, solvents, and cleaning fluids. b. The location of such hazardous materials. c. An emergency response plan including employee training information. d. A plan that describes the manner in which these materials are handled, transported, and disposed.			
<i>HYDROLOGY AND WATER QUALITY</i>			
SCA-HYD-1: Erosion and Sedimentation Control Plan for Construction. (#45) <i>a. Erosion and Sedimentation Control Plan Required</i> The project applicant shall submit an Erosion and Sedimentation Control Plan to the City for review and approval. The Erosion and Sedimentation Control Plan shall include all necessary measures to be taken to prevent excessive stormwater runoff or carrying by stormwater runoff of solid materials on to lands of adjacent property owners, public streets, or to creeks as a result of conditions created by grading and/or construction operations. The Plan shall include, but not be limited to, such measures as short-term erosion control planting, waterproof slope covering, check dams, interceptor ditches, benches, storm drains, dissipation structures, diversion dikes, retarding berms and barriers, devices to trap, store and filter out sediment, and stormwater retention basins. Off-site work by the project applicant may be necessary. The project applicant shall obtain permission or easements necessary for off-site work. There shall be a clear notation that the plan is subject to changes as changing conditions occur. Calculations of anticipated stormwater runoff and sediment volumes shall be included, if required by the City. The Plan shall specify that, after construction is complete, the project applicant shall ensure that the storm drain system shall be inspected and that the project applicant shall clear the system of any debris or sediment.	Prior to Approval of Construction-Related Permit	Bureau of Building	N/A
<i>b. Erosion and Sedimentation Control During Construction</i> The project applicant shall implement the approved Erosion and Sedimentation Control Plan. No grading shall occur during the wet weather season (October 15 through April 15) unless specifically authorized in writing by the Bureau of Building.	During Construction	N/A	Bureau of Building

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the Regional Water Quality Control Board, San Francisco Region, for the purpose of verifying the implementation, operation, and maintenance of the on-site stormwater treatment measures and to take corrective action if necessary. The maintenance agreement shall be recorded at the County Recorder's Office at the applicant's expense.			
SCA-HYD-3: State Construction General Permit. (#46) The project applicant shall comply with the requirements of the Construction General Permit issued by the State Water Resources Control Board (SWRCB). The project applicant shall submit a Notice of Intent (NOI), Stormwater Pollution Prevention Plan (SWPPP), and other required Permit Registration Documents to SWRCB. The project applicant shall submit evidence of compliance with Permit requirements to the City.	Prior to approval of construction-related permit	State Water Resources Control Board; evidence of compliance submitted to Bureau of Building	State Water Resources Control Board
NOISE			
SCA-NOS-1: Construction Days/Hours. (#58) The project applicant shall comply with the following restrictions concerning construction days and hours: - 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. - 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. - No construction is allowed on Sunday or federal holidays. Construction activities include, but are not limited to, truck idling, moving equipment (including trucks, elevators, etc.) or materials, deliveries, and construction meetings held on-site in a non-enclosed area. Any construction activity proposed outside of the above days and hours for special activities (such as concrete pouring which may require more continuous amounts of time) shall be evaluated on a case-by-case basis by the	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
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.			
SCA-NOS-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: - Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds) wherever feasible. - 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. - Applicant shall use temporary power poles instead of generators where feasible. - 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. - The noisiest phases of construction shall be limited to less than 10 days	During Construction	N/A	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.			
SCA-NOS-3: Extreme Construction Noise. (#60) <i>a. Construction Noise Management Plan Required</i> Prior to any extreme noise generating construction activities (e.g., pier drilling, pile driving and other activities generating greater than 90dBA), the project applicant shall submit a Construction Noise Management Plan prepared by a qualified acoustical consultant for City review and approval that contains a set of site-specific noise attenuation measures to further reduce construction impacts associated with extreme noise generating activities. The project applicant shall implement the approved Plan during construction. Potential attenuation measures include, but are not limited to, the following: i. Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings; ii. Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions; iii. Utilize noise control blankets on the building structure as the building is erected to reduce noise emission from the site; iv. Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and v. Monitor the effectiveness of noise attenuation measures by taking noise measurements. <i>b. Public Notification Required</i> 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	Prior to Approval	Bureau of Building	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
attenuation measures to be implemented.			
SCA-NOS-4: Construction Noise Complaints. (#62) The project applicant shall submit to the City for review and approval a set of procedures for responding to and tracking complaints received pertaining to construction noise, and shall implement the procedures during construction. At a minimum, the procedures shall include: - 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
SCA-NOS-5: Operational Noise. (#64) Noise levels from the project site after completion of the project (i.e., during project operation) shall comply with the performance standards of chapter 17.120 of the Oakland Planning Code and chapter 8.18 of the Oakland Municipal Code. If noise levels exceed these standards, the activity causing the noise shall be abated until appropriate noise reduction measures have been installed and compliance verified by the City.	Ongoing	N/A	Bureau of Building
POPULATION AND HOUSING			
SCA-POP-1: Jobs/Housing Impact Fee. (#67) The project applicant shall submit payment to the City in accordance with the requirements of the City of Oakland Jobs/Housing Impact Fee Program (chapter 15.68 of the Oakland Municipal Code).	Prior to construction	Bureau of Building	N/A
TRANSPORTATION AND TRAFFIC			
SCA-TRANS-1: Transportation and Parking Demand Management. (#71) <i>a. Transportation and Parking Demand Management (TDM) Plan Required</i> The project applicant shall submit a Transportation and Parking Demand	Prior to approval of construction-related permit	Bureau of Planning	N/A

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
Management (TDM) Plan for review and approval by the City. i. The goals of the TDM Plan shall be the following: • Reduce vehicle traffic and parking demand generated by the project to the maximum extent practicable, consistent with the potential traffic and parking impacts of the project. • Achieve the following project vehicle trip reductions (VTR): • Projects generating 50-99 net new a.m. or p.m. peak hour vehicle trips: 10 percent VTR • Projects generating 100 or more net new a.m. or p.m. peak hour vehicle trips: 20 percent VTR • Increase pedestrian, bicycle, transit, and carpool/vanpool modes of travel. All four modes of travel shall be considered, as appropriate. • Enhance the City's transportation system, consistent with City policies and programs. ii. TDM strategies to consider include, but are not limited to, the following: • Inclusion of additional long-term and short-term bicycle parking that meets the design standards set forth in chapter five of the Bicycle Master Plan and the Bicycle Parking Ordinance (chapter 17.117 of the Oakland Planning Code), and shower and locker facilities in commercial developments that exceed the requirement. • Construction of and/or access to bikeways per the Bicycle Master Plan; construction of priority bikeways, on-site signage and bike lane striping. • Installation of safety elements per the Pedestrian Master Plan (such as crosswalk striping, curb ramps, count down signals, bulb outs, etc.) to encourage convenient and safe crossing at arterials, in addition to safety elements required to address safety impacts of the project. • Installation of amenities such as lighting, street trees, and trash receptacles per the Pedestrian Master Plan and any applicable streetscape plan. • Construction and development of transit stops/shelters, pedestrian access, way finding signage, and lighting around transit stops per			

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
transit agency plans or negotiated improvements. • Direct on-site sales of transit passes purchased and sold at a bulk group rate (through programs such as AC Transit Easy Pass or a similar program through another transit agency). • Provision of a transit subsidy to employees or residents, determined by the project applicant and subject to review by the City, if employees or residents use transit or commute by other alternative modes. • Provision of an ongoing contribution to transit service to the area between the project and nearest mass transit station prioritized as follows: 1) Contribution to AC Transit bus service; 2) Contribution to an existing area shuttle service; and 3) Establishment of new shuttle service. The amount of contribution (for any of the above scenarios) would be based upon the cost of establishing new shuttle service (Scenario 3). • Guaranteed ride home program for employees, either through 511.org or through separate program. • Pre-tax commuter benefits (commuter checks) for employees. • Free designated parking spaces for on-site car-sharing program (such as City Car Share, Zip Car, etc.) and/or car-share membership for employees or tenants. • On-site carpooling and/or vanpool program that includes preferential (discounted or free) parking for carpools and vanpools. • Distribution of information concerning alternative transportation options. • Parking spaces sold/leased separately for residential units. Charge employees for parking, or provide a cash incentive or transit pass alternative to a free parking space in commercial properties. • Parking management strategies including attendant/valet parking and shared parking spaces. • Requiring tenants to provide opportunities and the ability to work off-site. • Allow employees or residents to adjust their work schedule in order			

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
to complete the basic work requirement of five eight-hour workdays by adjusting their schedule to reduce vehicle trips to the worksite (e.g., working four, ten-hour days; allowing employees to work from home two days per week). • Provide or require tenants to provide employees with staggered work hours involving a shift in the set work hours of all employees at the workplace or flexible work hours involving individually determined work hours. The TDM Plan shall indicate the estimated VTR for each strategy, based on published research or guidelines where feasible. For TDM Plans containing ongoing operational VTR strategies, the Plan shall include an ongoing monitoring and enforcement program to ensure the Plan is implemented on an ongoing basis during project operation. If an annual compliance report is required, as explained below, the TDM Plan shall also specify the topics to be addressed in the annual report. <i>b. TDM Implementation — Physical Improvements</i> 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. <i>c. TDM Implementation — Operational Strategies</i> 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.	Prior to Building Permit Final Ongoing	Bureau of Building Bureau of Planning	Bureau of Building Bureau of Planning

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

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
SCA-UTIL-4: Green Building Requirements. (#77) <i>a. Compliance with Green Building Requirements During Plan-Check</i> The project applicant shall comply with the requirements of the California Green Building Standards (CALGreen) mandatory measures and the applicable requirements of the City of Oakland Green Building Ordinance (chapter 18.02 of the Oakland Municipal Code). i. The following information shall be submitted to the City for review and approval with the application for a building permit: • Documentation showing compliance with Title 24 of the current version of the California Building Energy Efficiency Standards. • Completed copy of the final green building checklist approved during the review of the Planning and Zoning permit. • Copy of the Unreasonable Hardship Exemption, if granted, during the review of the Planning and Zoning permit. • Permit plans that show, in general notes, detailed design drawings, and specifications as necessary, compliance with the items listed in subsection (ii) below. • Copy of the signed statement by the Green Building Certifier approved during the review of the Planning and Zoning permit that the project complied with the requirements of the Green Building Ordinance. • Signed statement by the Green Building Certifier that the project still complies with the requirements of the Green Building Ordinance, unless an Unreasonable Hardship Exemption was granted during the review of the Planning and Zoning permit. • Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance. ii. The set of plans in subsection (i) shall demonstrate compliance with the following: • CALGreen mandatory measures. • 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	Prior to approval of construction-related permit	Bureau of Building	N/A

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
Zoning permit. - A minimum of 23 points (3 Community; 6 IAQ/Health; 6 Resources; 8 Water) as defined by the Green Building Ordinance for Residential New Construction. - All green building points identified on the checklist approved during review of the Planning and Zoning permit, unless a Request for Revision Plan-check application is submitted and approved by the Bureau of Planning that shows the previously approved points that will be eliminated or substituted. - The required green building point minimums in the appropriate credit categories. <i>b. Compliance with Green Building Requirements During Construction</i> The project applicant shall comply with the applicable requirements of CALGreen and the Oakland Green Building Ordinance during construction of the project. The following information shall be submitted to the City for review and approval: - Completed copies of the green building checklists approved during the review of the Planning and Zoning permit and during the review of the building permit. - Signed statement(s) by the Green Building Certifier during all relevant phases of construction that the project complies with the requirements of the Green Building Ordinance. - Other documentation as deemed necessary by the City to demonstrate compliance with the Green Building Ordinance. <i>c. Compliance with Green Building Requirements After Construction</i> Within sixty (60) days of the final inspection of the building permit for the project, the Green Building Certifier shall submit the appropriate documentation to Build It Green and attain the minimum required certification/point level. Within one year of the final inspection of the building permit for the project, the applicant shall submit to the Bureau of Planning the Certificate from the organization listed above demonstrating certification and compliance with the minimum point/certification level noted above.	During Construction	N/A	Bureau of Building
	After Project Completion as Specified	Bureau of Planning	Bureau of Building

Standard Conditions of Approval	When Required	Initial Approval	Monitoring/ Inspection
SCA-UTIL-5: Sanitary Sewer System. (#79) The project applicant shall prepare and submit a Sanitary Sewer Impact Analysis to the City for review and approval in accordance with the City of Oakland Sanitary Sewer Design Guidelines. The Impact Analysis shall include an estimate of pre-project and post-project wastewater flow from the project site. In the event that the Impact Analysis indicates that the net increase in project wastewater flow exceeds City-projected increases in wastewater flow in the sanitary sewer system, the project applicant shall pay the Sanitary Sewer Impact Fee in accordance with the City's Master Fee Schedule for funding improvements to the sanitary sewer system.	Prior to approval of construction-related permit	Public Works Department, Department of Engineering and Construction	N/A
SCA-UTIL-6: Storm Drain System. (#80) The project storm drainage system shall be designed in accordance with the City of Oakland's Storm Drainage Design Guidelines. To the maximum extent practicable, peak stormwater runoff from the project site shall be reduced by at least 25 percent compared to the pre-project condition.	Prior to approval of construction-related permit	Bureau of Building	Bureau of Building

Attachment B: Criteria for Use of an Addendum— Redevelopment Projects, Per CEQA Guidelines Section 15168 and 15180(c)

Under CEQA Guidelines Section 15180, projects that are subsequent activities of a program EIR for a redevelopment plan will be subject to the review required by Section 15168. The CDURP EIR and, as amended (2011 CDURP Amendments EIR), is a Program EIR.

CEQA Guidelines Section 15168 state that an addendum to a previously certified EIR shall be prepared “if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.” The Guidelines further state that a “brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency’s findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.”

Proposed 2 Kaiser Plaza Project. The Project would be developed in the CDURP Plan Area either as Option A or as Option B.

Option A would construct a new approximately 697,150 sf commercial building, consisting of 21 stories (approximately 319 feet in height) composed of 11,8380 sf ground floor retail space, 5 levels of podium parking, and 457,100 sf of office space. The parking garage would accommodate approximately 280 parking spaces. The floor area ratio would be 11.2.

Option B would construct a new approximately 1,128,604 sf commercial building consisting of 33 stories (approximately 470 feet in height) composed of 8,705 sf ground floor retail space, 6 levels of podium parking, and 850,055 sf of office space. The parking garage would accommodate approximately 352 parking spaces. The floor area ratio would be 20.

Conditions for Addendum. None of the following conditions for preparation of a subsequent EIR per Section 15162(a) apply to the proposed Project:

- 1) No substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- 2) No substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- 3) No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:
 - A) The project will have one or more significant effects not discussed in the previous EIR;
 - B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or mitigation

measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Project Consistency with Section 15162 of the CEQA Guidelines. Since certification of the 2011 CDURP Amendments EIR, no changes have occurred in the circumstances under which the Project would be implemented that would change the severity of the Project's physical impacts as explained in the CEQA Checklist, and no new information has emerged that would materially change the analyses or conclusions set forth in the 2011 CDURP Amendments EIR.

As demonstrated in the CEQA Analysis, implementation of the Project pursuant to the CDURP would not result in any new significant environmental impacts, result in any substantial increases in the significance of previously identified effects, or necessitate implementation of additional or considerably different mitigation measures than those identified in the EIR. The Project would not render any mitigation measures or alternatives previously found not to be feasible, feasible. The effects of the Project would be substantially the same as those reported for the CDURP in the 2011 CDURP Amendments EIR.

The analysis presented in this CEQA Checklist, combined with the prior 2011 CDURP Amendments EIR analysis, demonstrates that the Project would not result in significant impacts that were not previously identified in the 2011 CDURP Amendments EIR.

The Project would not result in a substantial increase in the significance of impacts, nor would the Project contribute considerably to cumulative effects that were not already accounted for in the certified 2011 CDURP Amendments EIR. Overall, the impacts of the Project are similar to those identified and discussed in the 2011 CDURP Amendments EIR, as described in the CEQA Analysis, and the findings reached in the 2011 CDURP Amendments EIR are applicable.

As allowed under CEQA Guidelines Section 15168, the 2011 CDURP Amendments EIR was prepared to consider all actions facilitated by the CDURP as one large project because they are in the same geographic location. In addition, a program-level document is most appropriate for this action specifically because it provides for a more exhaustive consideration of effects and alternatives than would be practical in a project-level document. The program-level document allows the City to consider program-wide mitigation measures and cumulative impacts that might be slighted in a case-by-case analysis approach. Preparation of a program-level document also simplifies the task of preparing subsequent environmental documents for those activities that are facilitated by the Redevelopment Plan but the details of which are currently unknown.

Implementation of actions defined in the CDURP could result in the rehabilitation, reconstruction, construction, or alteration of buildings, housing, public infrastructure, and other physical changes to the environment. Redevelopment activities to be facilitated by the CDURP would generally remain similar to those currently being implemented. For purposes of the 2011 CDURP Amendments EIR, the CEQA project is the implementation of the activities facilitated by the CDURP.

Attachment C: Project Consistency with Community Plan or Zoning, Per CEQA Guidelines Section 15183

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 an EIR does not need to be prepared for the project “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 standards.”

The analysis in the Program EIRs (LUTE EIR and 2011 CDURP Amendments EIR) is applicable to the Project and the Program EIRs are the previous CEQA documents that provide the basis for use of the streamlined review for consistency with a Community Plan or Zoning.

Proposed 2 Kaiser Plaza Project. The Project is in the City of Oakland General Plan area, the LUTE Downtown Showcase District, and CDURP Plan Area. The Project would be developed within the General Plan’s Central District planning area either as Option A or as Option B.

Option A would construct a new approximately 697,150 sf commercial building, consisting of 21 stories (approximately 319 feet in height) composed of 11,8380 sf ground floor retail space, 5 levels of podium parking, and 457,100 sf of office space. The parking garage would accommodate approximately 280 parking spaces. The floor area ratio would be 11.2.

Option B would construct a new approximately 1,128,604 sf commercial building consisting of 33 stories (approximately 470 feet in height) composed of 8,705 sf ground floor retail space, 6 levels of podium parking, and 850,055 sf of office space. The parking garage would accommodate approximately 352 parking spaces. The floor area ratio would be 20.

Project Consistency. As outlined below and as determined by the City of Oakland Bureau of Planning, the Project is permitted in the zoning district in which it is located and is consistent with the bulk, density, and land uses envisioned in the Central District planning area for which the 2011 CDURP Amendments EIR, the was prepared and certified. The CDURP implements the 1998 LUTE and General Plan.

- As demonstrated under Criterion Section 15332(a) in the CEQA Analysis: General Plan and Zoning Consistency, 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 Program EIRs.
- The land use designation for the site is CBD; this designation 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 in Northern California. The proposed mixed-use Project would be consistent with this designation.
- The Project site is zoned as CBD-C (Commercial Zone) which is intended to create, maintain, and enhance areas of the CBD appropriate for a wide range of ground-floor office and other commercial activities. Upper-story spaces are intended to be available for a wide range of residential and office or other commercial activities. In this zone, the Project site is in Height

Area 7, which allows for a maximum podium height of 120 feet; there is no maximum building height.

- The podium height under Option A would be approximately 75 feet and the total building height would be approximately 319 feet to the roof. The podium height under Option B would be approximately 87.5 feet and the total building height would be approximately 487 feet to the roof. The Project would be in compliance with the height limits on the site.
- Since the Project is consistent with the development assumptions for the site as provided under the LUTE EIR and 2011 CDURP Amendments 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 reconsider cumulative effects.

Therefore, the both of the Project options proposed are eligible for an exemption under California Public Resources Code Section 21083.3, and Section 15183 of the CEQA Guidelines.

Attachment D: VMT Assessment



DRAFT MEMORANDUM

Date: August 31, 2017
To: Sharon Wright, Lamphier-Gregory
From: Sam Tabibnia
Subject: VMT Assessment for 2 Kaiser Plaza Project in Oakland

OK16-0092

This memorandum provides a vehicle miles traveled (VMT) assessment for the proposed 2 Kaiser Plaza development in the City of Oakland. Fehr & Peers analyzed the Project's VMT based on the City of Oakland's CEQA Thresholds of Significance.

Based on our assessment, the impacts of the two project options under consideration on VMT would be less-than-significant. Both project options would be located in a low-VMT area (screening criterion #2) and be near transit stations (screening criterion #3), and are therefore presumed to not exceed VMT thresholds. The rest of this memorandum presents more background and detail on the VMT analysis completed for this project.

PROJECT DESCRIPTION

The project would be located at 2 Kaiser Plaza between 21st and 22nd Streets in downtown Oakland. Two project options are currently under consideration:

- Scheme A would consist of about 457,100 gross square feet of office, about 11,380 gross square feet of retail, and 280 parking spaces.
- Scheme B would consist of about 850,055 gross square feet of office, about 8,705 gross square feet of retail, and 352 parking spaces.

BACKGROUND

On September 21, 2016, the City of Oakland's Planning Commission directed staff to update the City of Oakland's California Environmental Quality Act (CEQA) Thresholds of Significance Guidelines related to transportation impacts in order to implement the directive from Senate Bill



743 (Steinberg 2013) to modify local environmental review processes by removing automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, as a significant impact on the environment pursuant to CEQA. The recommendation 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.

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 per worker 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.

VEHICLE MILES TRAVELED 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 MTC Travel Model estimates travel behavior 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 worker is included; not just trips into and out of the person's home or workplace. For example: a resident leaves her apartment in the morning, stops for coffee, and then goes to the office. In the afternoon she heads out to lunch, and then returns to the office, with a stop at the drycleaners on the way. After work she goes to the gym to work out, and then joins some friends at a restaurant for dinner before returning home. The tour-based approach would add up the total amount driven and assign the daily VMT to this resident for the total number of miles driven on the entire "tour".

Based on the MTC Travel Model, the regional average daily VMT per 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

According to the interim *Update to CEQA Thresholds of Significance and Transportation Impact Study Guidelines* dated October 17, 2016, VMT impacts would have a significant effect on the environment if the project would:

1. 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
2. Cause substantial additional VMT per capita, per service population, or other appropriate efficiency measure; or



3. 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.

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 worker minus 15 percent.
- For retail projects, a project would cause substantial additional VMT if it results in a net increase in total VMT.

Screening Criteria

VMT impacts would be less than significant for a project if any of the identified screening criteria are met:

1. Small Projects: The project generates fewer than 100 vehicle trips per day
2. Low-VMT Areas: The project meets map-based screening criteria by being located in an area that exhibits below threshold VMT, or 15 percent or more below the regional average
3. Near Transit Stations: The project is located in a Transit Priority Area or within a one-half mile of a Major Transit Corridor or Stop¹ and satisfies the following:
 - Has a Floor Area Ratio (FAR) of more than 0.75
 - Does not include more parking for use by residents, customers, or employees of the project than other typical nearby uses, or more than required by the City (if parking minimums pertain to the site) or allowed without a conditional use permit (if minimums and/or maximums pertain to the site).

¹ Major transit stop is defined in CEQA Section 21064.3 as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.



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

IMPACT ANALYSIS

Both project options would provide less than 50,000 square feet of retail space. Therefore, the retail is considered to be local serving and not result in a net increase in total VMT. The VMT per worker criterion is used to screen the VMT for the office component of the two project options under consideration.

The Project would satisfy the Low-VMT Area (#2) and Near Transit Station (#3) criteria, as detailed below.

Criterion #1: Small Projects

The project would generate more than 100 trips per day and therefore does not meet criterion #1.

Criterion #2: Low-VMT Area

Table 1 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 1: DAILY VEHICLE MILES TRAVELED SUMMARY						
Land Use	Bay Area				TAZ 971	
	2020		2040		2020	2040
	Regional Average	Regional Average minus 15%	Regional Average	Regional Average minus 15%		
Office (VMT per worker) ²	21.8	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 January 2017.

2. MTC Model results at analytics.mtc.ca.gov/foswiki/Main/PlanBayAreaVmtPerWorker and accessed in January 2017.

Source: Fehr & Peers, 2016

As shown in **Table 1**, the 2020 and 2040 average daily 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 with respect to VMT would be less-than-significant.



Criterion #3: Near Transit Stations

The Project would be located about 0.2 miles from the 19th Street BART Station and is within one-half mile of several frequent bus corridors including: Broadway (Routes 51A with 10 minute peak headways), 20th Street (Routes 72, 72M, and 72R, with 10 to 12 minute peak headways), and Telegraph Avenue (Route 6 with 10 minute peak headways). The project would satisfy Criterion #3 because it would also meet the following three conditions for this criterion:

- The project has an FAR greater than 0.75 (Scheme A has an approximate FAR of 11.2, and Scheme B has an approximate FAR of 20)
- Scheme A would provide 280 parking spaces and Scheme B would provide 352 parking spaces, which correspond to about 0.61 spaces per 1,000 square feet for Scheme A and about 0.41 spaces per 1,000 square feet for Scheme B. The City of Oakland Municipal Code Section 17.116.080 has no parking minimum or maximum requirements for office developments in the CBD-C zone. Thus, the parking supply proposed by either project option would satisfy City Code requirements. In addition, it is estimated that the parking supply provided by either project option would be less than the current parking demand for office uses in downtown Oakland.² Therefore, the project would not provide more parking for use by residents, customers, or workers than other typical nearby uses, nor would it provide more parking than required by the City Code.
- The Project is located within the Downtown Oakland Priority Development Area (PDA) as defined by Plan Bay Area, and is therefore consistent with the region's Sustainable Communities Strategy

CONCLUSION

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

Please contact Sam with questions or comments.

² It is estimated that the proposed project would have a parking demand of about 1.2 spaces per 1,000 square feet based on the assumptions that typical office developments have about 3.0 workers per 1,000 square foot and US Census data shows that about 40 percent of workers in downtown Oakland drive to work.

Attachment E: Air Quality/Greenhouse Gas Emissions Analysis

2 KAISER PLAZA OFFICE DEVELOPMENT DRAFT AIR QUALITY, HEALTH RISK, AND GREENHOUSE GAS ASSESSMENT

Oakland, California

January 31, 2017

Prepared for:

**Sharon Wright
Lamphier-Gregory
1944 Embarcadero
Oakland, CA 94501**

Prepared by:

**Tanushree Ganguly and
James Reyff**

ILLINGWORTH & RODKIN, INC.
/// Acoustics • Air Quality ///
**1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400**

Project: 16-206

Introduction

The purpose of this report is to address air quality and greenhouse gas (GHG) impacts associated with the Kaiser Plaza commercial development in Oakland. The project site is currently occupied by a surface parking lot. The 1.02-acre project site is bounded by Kaiser Plaza to the east, 22nd street to the north, a high-rise commercial development to the west and, 21st Street to the south. Two project options (Scheme 1 and Scheme 2) have been proposed. The existing parking lot would be removed under both options. Scheme 1 proposes the development of a 34-story commercial building consisting of 7,396 square feet (sf) of retail space, 877,522 sf of office space and 342 parking spaces. Scheme 2 proposes the development of a 19-story commercial building consisting of 7,396 sf of retail space, 438,389 sf of office space and 181 parking spaces.

Air pollutant and GHG emissions associated with construction and operation of both project options were modeled and compared. In addition, the potential construction health risk impact to nearby sensitive receptors and the impact of existing toxic air contaminant (TAC) sources affecting the proposed residences were evaluated. This analysis addresses those issues following the guidance provided by the Bay Area Air Quality Management District (BAAQMD).

Setting

The project is located in the Alameda County, which is in the San Francisco Bay Area Air Basin. 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 of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM₁₀) and fine particulate matter where particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ and PM_{2.5} are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the 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 [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (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.

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. These regulations include the solid waste collection vehicle (SWCV) rule, in-use public and utility fleets, and the heavy-duty diesel truck and bus regulations. In 2008, CARB approved a new regulation to reduce emissions of DPM and nitrogen oxides from existing on-road heavy-duty diesel fueled vehicles.¹ The regulation requires affected vehicles to meet specific performance requirements between 2014 and 2023, with all affected diesel vehicles required to have 2010 model-year engines or equivalent by 2023. These requirements are phased in over the compliance period and depend on the model year of the vehicle.

The BAAQMD is the regional agency tasked with managing air quality in the region. At the State level, the CARB (a part of the California Environmental Protection Agency [EPA]) oversees regional air district activities and regulates air quality at the State level. The BAAQMD has recently published California Environmental Quality Act (CEQA) Air Quality Guidelines that are used in this assessment to evaluate air quality impacts of projects.² *Attachment 1* includes detailed community risk modeling methodology.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care

¹ Available online: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed: November 21, 2014.

² Bay Area Air Quality Management District. 2011. BAAQMD CEQA Air Quality Guidelines. May.

facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are the multi-family residences to the north of the project site, along Grand Avenue and Valdez Street.

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. Though not a CEQA issue in this case, TAC impacts on the proposed project are addressed to comply with City of Oakland Standard Condition of Approval B Exposure to Air Pollution (Toxic Air Contaminants).

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

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

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-AIR-2: Construction-Related Air Pollution (Dust and Equipment Emissions). (#19)

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

- a. Water all exposed surfaces of active construction areas at least twice daily. Watering should be sufficient to prevent airborne dust from leaving the site. Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water should be used whenever feasible.
- b. Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer).
- c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- d. Pave all roadways, driveways, sidewalks, etc. within one month of site grading or as soon as feasible. In addition, building pads should be laid within one month of grading or as soon as feasible unless seeding or soil binders are used.
- e. Enclose, cover, water twice daily, or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.).
- f. Limit vehicle speeds on unpaved roads to 15 miles per hour.
- g. Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.
- h. Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations (“California Air Resources Board Off-Road Diesel Regulations”).
- i. All construction equipment shall be maintained and properly tuned in accordance with the manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- j. Portable equipment shall be powered by electricity if available. If electricity is not available, propane or natural gas shall be used if feasible. Diesel engines shall only be used if electricity is not available and it is not feasible to use propane or natural gas.
- k. All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- 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-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.

Project Air Quality Impacts

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 predict emissions from construction and operation of both the project options 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 provided annual emissions for construction. 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. CalEEMod defaults were used for equipment usage. The construction schedule was based on information provided by the applicant. The proposed project land uses were input into CalEEMod, which included: 877,752 sf entered as “General Office Building,” 7,396 sf entered as “Strip Mall,” and 342 spaces entered as “Enclosed Parking with Elevator” for Scheme 1, and 438,389 sf entered as “General Office Building”, 7,396 sf as “Strip Mall”, and 181 spaces as “Enclosed Parking with Elevator” for Scheme 2.

Demolition of approximately 655 tons of pavement is anticipated and was entered into the model. During the building construction phase delivery of 41,000 cubic yards (cy) of concrete is anticipated for Scheme 1 and 26,000 cy for Scheme 2. Modeling assumed 16cy/truck and the truck trips were distributed uniformly over the entire duration of the building construction phase.

The construction schedule assumes that Scheme 1 would be built out over a period of approximately 26 months beginning in March, 2017 or an estimated 572 construction workdays (assuming an average of 22 construction days per month). Scheme 2 would be built over a period of 18 months or an estimated 396 days. Average daily emissions were computed by dividing the total construction emissions by the number of construction days. Tables 2.1 and 2.2 show average daily construction emissions of ROG, NO_x, PM₁₀ exhaust, and PM_{2.5} exhaust during construction of the Schemes 1 and 2, respectively. As indicated in both tables, predicted the construction period emissions from either option 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 consider these impacts to be less than significant if best management practices are implemented to reduce these emissions. The Project would be required to comply with applicable SCAs related to construction emissions (SCA-AIR-2), which are considered Best Management Practices and reduce the impact to a less-than-significant effect.

Table 2.1 Construction Period Emissions- Scheme 1 (890)

Scenario	ROG	NOx	PM₁₀ Exhaust	PM_{2.5} Exhaust
Total construction emissions (tons)	5.98 tons	12.77 tons	0.46 tons	0.43 tons
Average daily emissions (pounds) ¹	20.9 lbs.	44.7 lbs.	1.61 lbs.	1.50 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 572 workdays.				

Table 2.2 Construction Period Emissions-Scheme 2 (450)

Scenario	ROG	NOx	PM₁₀ Exhaust	PM_{2.5} Exhaust
Total construction emissions (tons)	3.14 tons	7.32 tons	0.33 tons	0.31 tons
Average daily emissions (pounds) ¹	15.9 lbs.	37.0 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 396 workdays.				

Operational Period Emissions

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

Land Uses

The project land uses were input to CalEEMod, as described above.

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 year Scheme 1 would

be constructed and begin operating would be 2020 and Scheme 2 would begin operating in 2019. Emissions associated with build-out later than the first full operational year 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 reductions for internal trips due to the mixed-use nature of the project and nearby transit. The default trip lengths and trip types specified by CalEEMod were used.

Energy

CalEEMod defaults for energy use were used, which include the 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. No new wood-burning stoves or fireplaces are allowed in the Bay Area, but it was assumed that new residences could include gas-powered fireplaces.

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. While Scheme 1 proposes the inclusion of a 1000 KW generator, Scheme 2 would include a 750 KW generator. It is assumed for this assessment that the generator would be driven by a diesel-fueled engine.

The emergency back-up generators would be used for backup power in emergency conditions. The generators will be operated for testing and maintenance purposes only, 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. The engine will consume commercially available California low-sulfur diesel fuel. The generator emissions were modeled using CalEEMod.

Total Project Emissions

Tables 3.1 and 3.2 report predicted emission for both project options in terms of annual emissions in tons and average daily operational emissions that assume 365 days of operation per year. As shown in the tables, average daily and annual emissions of ROG, NO_x, PM₁₀, or PM_{2.5} emissions associated with operation of either project scenario would not exceed the BAAQMD significance thresholds.

Table 3.1 Operational Emissions- Scheme 1 (890)

Scenario	ROG	NO_x	PM₁₀	PM_{2.5}
Project Annual Operational Emissions	5.06 tons	7.35 tons	2.83 tons	0.84 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 Project Operational Emissions (pounds) ¹	27.7 lbs.	40.3 lbs.	15.5 lbs.	4.6 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.

Table 3.2 Operational Emissions- Scheme 2 (450)

Scenario	ROG	NO_x	PM₁₀	PM_{2.5}
Project Annual Operational Emissions	2.73 tons	4.70 tons	1.72 tons	0.51 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 Project Operational Emissions (pounds) ¹	15.0 lbs.	25.8 lbs.	9.4 lbs.	2.8 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.

Impact: Expose sensitive receptors to substantial pollutant concentrations? ***Less than significant.***

Project impacts related to increased community risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors in the project vicinity or by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs. The project would not introduce new sensitive receptors. The project would have temporary TAC emissions during construction and then long-term TAC emissions associated with testing and maintenance of the diesel engines that would power the emergency generators. Community risk impacts associated with these emissions were assessed.

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. Both project alternatives propose the installation of emergency back-up generators. However, the generators 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.

Project Construction Activity

Construction activities, particularly during site preparation and grading would temporarily generate fugitive dust in the form of respirable particulate matter (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 consider these impacts to be less than significant if best management practices are employed to reduce these emissions. The Project would be required to comply SCA-AIR-2, which is considered Best Management Practices to control construction emissions of fugitive dust.

Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust air pollutant emissions would not be considered to contribute substantially to existing or projected air quality violations. Construction exhaust emissions may still pose community risks for sensitive receptors such as nearby residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to PM_{2.5}. Diesel exhaust poses both a potential health and nuisance impact to nearby receptors. A community risk assessment of the project construction activities was conducted that evaluated potential health effects of sensitive receptors at these nearby residences from construction emissions of DPM and PM_{2.5}.³ The closest sensitive receptors to the project site are the mulita-family residential apartments to the north and northwest of the project boundary (see Figure 1). Emissions and dispersion modeling was conducted to predict the off-site DPM concentrations resulting from project construction, so that lifetime cancer risks and non-cancer health effects could be evaluated.

Construction period emissions were computed using CalEEMod along with projected construction activity, as described above. The construction period emissions associated with Scheme 1 were found to be higher and have been used to calculate the maximum community risk impacts. The CalEEMod model provided total annual PM₁₀ exhaust emissions (assumed to be DPM) for the off road construction equipment used for construction of the project and for the exhaust emissions from on-road vehicles (haul trucks, vendor trucks, and worker vehicles) of 0.4132 tons (826 pounds) over the construction period. A trip length of one-half mile was used to represent vehicle travel while at or near the construction site. For modeling purposes, it was assumed that these emissions from on-road vehicles would occur at the construction site. Fugitive dust PM_{2.5} emissions were also computed and included in this analysis. The model predicts emissions of 0.0863 tons (173 pounds) of fugitive PM_{2.5} over the construction period.

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and PM_{2.5} concentrations at sensitive receptors (residences) in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.⁴ For each phase of construction the AERMOD modeling utilized two area sources to represent the on-site construction

³ DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

⁴ Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0*. May.

emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 6 meters (19.7 feet) was used for the area source. The elevated source height reflects the height of the equipment exhaust pipes plus an additional distance for the height of the exhaust plume above the exhaust pipes to account for plume rise of the exhaust gases. For modeling fugitive PM_{2.5} emissions, a near-ground level release height of 2 meters (6.6 feet) was used for the area source. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources. Construction emissions were modeled as occurring daily between 7 a.m. to 4 p.m., when the majority of construction activity would occur.

The modeling used a 5-year meteorological data set (2009-2013) from the Metro Oakland International Airport prepared for use with the AERMOD model by the BAAQMD. Annual DPM and PM_{2.5} concentrations from construction activities during the 2017 - 2019 period were calculated using the model. DPM and PM_{2.5} concentrations were calculated at nearby sensitive receptor locations. Receptor heights of 1.5 meters (4.9 feet) and 4.5 meters (14.7 feet) were used to represent the breathing heights of residents on the first and second floor levels of nearby residential apartments.

The maximum-modeled DPM concentration occurred at the second floor level of a mixed-use residential development to the northwest of the project site. The maximum modeled PM_{2.5} concentration occurred at the same location. The location where the maximum impacts occurred has been identified in Figure 1. Results of this assessment indicate that the maximum excess residential lifetime cancer risks would be 16.0 in one million for an infant exposure and 0.3 in one million for an adult exposure. The maximum residential excess cancer risk would be greater than the BAAQMD significance threshold of 10 in one million. The maximum-modeled annual PM_{2.5} concentration, which is based on combined exhaust and fugitive dust emissions, was 0.06 µg/m³, which would not exceed the BAAQMD significance threshold of 0.3 µg/m³. The maximum modeled annual residential DPM concentration (i.e., from construction exhaust) was 0.045 µg/m³. The maximum computed HI based on this DPM concentration is less than 0.01, which is much lower than the BAAQMD significance criterion of a HI greater than 1.0.

The results of the health risk calculations can be found in *Attachment 2*.

Cumulative Construction Risk Assessment

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site. These sources include freeways or highways, busy surface streets and stationary sources identified by BAAQMD. Traffic on high volume roadways is a source of TAC emissions that may adversely affect sensitive receptors in close proximity to the roadway. For local roadways, BAAQMD considers roadways with traffic volumes of over 10,000 vehicles per day to have a potentially significant impact on a proposed project. A review of the project area indicates that traffic on Grand Avenue, Harrison Street and Broadway would exceed 10,000 vehicles per day. Other nearby streets are assumed to have less than 10,000 vehicles per day. A review of BAAQMD's Google Earth map tool used to identify stationary sources revealed several sources with the

potential to affect the project site. Community risk impacts from these sources upon the project are reported in Table 4.

Roadways - TAC Impacts

For local roadways, BAAQMD has provided the *Roadway Screening Analysis Calculator* to assess whether roadways with traffic volumes of over 10,000 vehicles per day 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 and (2) adjustment of cancer risk to reflect new OEHHA guidance (see *Attachment 1*).

The calculator uses EMFAC2011 emission rates for the year 2014. Overall, emission rates will decrease by the time the project is constructed and occupied. The project is not likely to be occupied prior to at least 2018. In addition, a new version of the 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) 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 using a factor of 1.3744 to account for new OEHHA guidance. This factor was provided by BAAQMD for use with their CEQA screening tools that are used to predict cancer risk.⁵

There are several local roadways near the project site, with the busiest being Grand Avenue, Broadway and Harrison Street.

- Grand Avenue The Average Daily Traffic (ADT) on Grand Avenue was estimated to be 13,370 based on the project traffic report peak hour traffic volumes for the Grand Avenue segment adjacent to the project and assuming that ADT is approximately ten times peak hour volumes⁶. Using the BAAQMD *Roadway Screening Analysis Calculator* for Alameda County for east-west directional roadways and at a distance of approximately 50 feet north of the roadway, estimated cancer risk from Grand Avenue at the location of maximum impact would be 6.3 per million and PM_{2.5} concentration would be 0.2 µg/m³. Chronic or acute HI for the roadway would be below 0.03.
- Broadway ADT on Broadway was estimated to be 12,340. Using the BAAQMD *Roadway Screening Analysis Calculator* for Alameda County for north-south directional roadways and at a distance of approximately 720 feet east of the roadway, estimated cancer risk from Broadway at the location of maximum impact would be 0.94 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.
- Harrison Street ADT on Harrison Street was estimated to be 27,280. Using the BAAQMD *Roadway Screening Analysis Calculator* for Alameda County for north-south directional roadways and at a distance of approximately 470 feet west of the roadway, estimated cancer risk

⁵ Correspondence with Alison Kirk, BAAQMD, November 23, 2015.

⁶ The ADT was estimated for both project alternatives and the higher ones have been reported here.

from Harrison Street at the location of maximum impact would be 1.7 per million and PM_{2.5} concentration would be 0.04 µg/m³. Chronic or acute HI for the roadway would be below 0.03.

Off-Site Stationary Sources

Permitted stationary sources of air pollution near the project site were identified using BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*. This mapping tool uses Google Earth and identified the location of several stationary sources and their estimated risk and hazard impacts. The identified sources were entered into a Risk & Hazard Stationary Source Inquiry Form that was submitted to BAAQMD to confirm these sources and obtain updated risk and hazard information, which the District provided.⁷ Sources that are not within 1000 feet of the location of maximum impact and with screening risk of zero are not included below.

- Plant 18451, which is a back-up generator located at 2121 Harrison Street operated by Catholic Cathedral Corporation of the Era is about 300 feet southwest of the location of maximum impact or maximally exposed individual (MEI). At BAAQMD's direction, risk and PM_{2.5} concentrations from the facility were adjusted based on BAAQMD's *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engines*. According to the BAAQMD screening data (and adjusted for the 300-foot distance and 2015 OEHHA methodology), this facility would result in an adjusted adult cancer risk of 0.4 per million, HI of 0, and no PM_{2.5} concentration.
- Plant 19467, which is a back-up generator located at 155 Grand Avenue (#125) operated by Brandywine Realty Trust, is about 130 feet south of the MEI. Again, the risk and PM_{2.5} concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine*. Having adjusted for an approximate distance of 120 feet, the cancer risk was found to be 5 in a million, approximately zero HI and no PM_{2.5} concentration.
- Plant 19999, which is a back-up generator located at 2150 Webster Street operated by Pacific Bell telephone Co., is about 425 feet southwest of the MEI. Again, the risk and PM_{2.5} concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine*. Having adjusted for an approximate distance of 425 feet, the cancer risk was found to be 0.9 in a million, zero HI and no PM_{2.5} concentration.
- Plant 19514, which is a back-up generator located at 2101 Webster Street operated by Oakland Center 21 is about 630 feet southwest of the MEI. Again, the risk and PM_{2.5} concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine*. Having adjusted for an approximate distance of 630 feet, the cancer risk was found to be 2.8 in a million, the HI of less than 0.01 and a PM_{2.5} concentration of less than 0.01 µg/m³.
- Plant 20095, which is a back-up generator located at One Kaiser Plaza operated by CIM Group/Ordway is about 330 feet south of the MEI. Again, the risk and PM_{2.5} concentration from the facility were adjusted using the *Distance Adjustment Multiplier*

⁷ Email correspondence from Alison Kirk, BAAQMD to Illingworth & Rodkin, Inc. on June 17, 2016.

Tool for Diesel Internal Combustion Engine. Having adjusted for an approximate distance of 330 feet, the cancer risk was found to be 2.6 in a million, the HI was less than 0.01 and less than 0.01 $\mu\text{g}/\text{m}^3$ $\text{PM}_{2.5}$ concentration.

- Plant 20013, which is a back-up generator located at 23rd and Waverly Street operated by MPower Communications is about 330 feet northwest of the MEI. Again, the risk and $\text{PM}_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine.* Having adjusted for an approximate distance of 330 feet, the cancer risk was found to be 1.1 in a million, zero HI and no $\text{PM}_{2.5}$ concentration.
- Plant 16640, which is a back-up generator located at 180 Grand Avenue operated by CalSTEARS 180 Grand, LLC is about 240 feet east of the MEI. Again, the risk and $\text{PM}_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine.* Having adjusted for an approximate distance of 240 feet, the cancer risk was found to be 19.6 in a million, the HI was 0.1 and $\text{PM}_{2.5}$ concentration of 0.02 $\mu\text{g}/\text{m}^3$
- Plant 19971, which is a back-up generator located at 100 Grand Avenue operated by Essex Portfolio LLC is about 85 feet west of the MEI. Again, the risk and $\text{PM}_{2.5}$ concentration from the facility were adjusted using the *Distance Adjustment Multiplier Tool for Diesel Internal Combustion Engine.* Having adjusted for an approximate distance of 85 feet, the cancer risk was found to be 3.4 in a million, approximately zero HI and no $\text{PM}_{2.5}$ concentration.
- Plant 14195, which is a back-up generator located at 111 Grand Avenue operated by State of California Department of Transportation (Caltrans), is about 140 feet south of the MEI. At BAAQMD's direction, risk and $\text{PM}_{2.5}$ concentrations from a diesel generator was adjusted based on BAAQMD's *Risk and Hazards Emissions Screening Calculator (Beta Version)* and *Distance Adjustment Multiplier Tool for Diesel Internal Combustion (IC) Engines.* However, even after using BAAQMD screening tools, screening level risk exceeds BAAQMD significance thresholds. Therefore, refined modeling of this source was conducted, as described below.

Refined Assessment of Plant 14195 Caltrans Generators

Modeling of the Caltrans emergency back-up generators (Plant 14195) was conducted to assess cancer risks and annual $\text{PM}_{2.5}$ concentrations at the location of the maximally exposed individual. Based on the BAAQMD emission inventory data the daily $\text{PM}_{2.5}$ and DPM emissions from this generator are 0.057 pounds per day (20.81 pounds per year).⁸ 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 are located on the roof of the Caltrans building at a height of about 220 feet. Potential impacts at the residential MEI were evaluated

⁸ Correspondence between Joshua Carman, I&R, and Alison Kirk, BAAQMD, November 19, 2014.

Default BAAQMD stack parameters for generator screening (6 feet high stack, 3 inch diameter, 50 meter/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 at the construction MEI was found to be 0.0013 ug/m³. Using BAAQMD cancer risk calculation methods the maximum estimated increased residential cancer risks would be 1.0 in a million, which would be below the significance threshold of 10 in one million. Details of the modeling and risk calculations are included in *Attachment 3*.

Summary of Cumulative Construction Community Risk Impacts

Table 4 summarizes the impacts from all the above mentioned sources on the construction MEI. The cumulative impacts of TAC emissions from construction of the project, nearby stationary sources and traffic on Grand Avenue, Broadway and Harrison Street on the construction MEI have been summarized in Table 4. As shown in Table 4, the sum of impacts from combined sources at the construction MEI would be below the thresholds of significance and this impact would be considered *less-than-significant*.

Table 4. Impact of combined sources at the Construction MEI

Source	Maximum Cancer Risk (per million)	Maximum Annual PM _{2.5} Concentration (µg/m ³)	Maximum Hazard Index
Project construction	16.0	0.06	<0.01
Project Generator	7.8	<0.01	<0.01
Plant 18451, Catholic Cathedral Corporation of the Era (Diesel IC Engine distance multiplier)~300 feet	0.4	~0	~0
Plant 19467, Brandywine Realty Trust, (Diesel IC engine distance multiplier)~130 feet	5.0	~0	~0
Plant 14195, State of California Department of Transportation, (Diesel IC Engine distance multiplier)~120 feet	1.0	~0	~0
Plant 19999, Pacific Bell Telephone Co. (dba AT&T Cal), (Diesel IC Engine Distance Multiplier)~425 feet	0.9	~0	~0
Plant 19514, Oakland Center 21, (Diesel IC Engine Distance Multiplier)~630 feet	2.8	<0.01	<0.01
Plant 20095, Ordway Building, (Diesel IC Engine Distance Multiplier)~330 feet	2.6	<0.01	<0.01
Plant 20013, MPower Communications, (Diesel IC Engines Distance Multiplier)~330 feet	1.1	~0	~0
Plant 16640, CalSTEARS 180 Grand, LLC, (Diesel IC Engine Distance Multiplier)~240 feet	19.6	0.02	0.1
Plant 19971, Essex Portfolio LLC, (Diesel IC Engine Distance Multiplier)~85 feet	3.4	~0	~0
Grand Avenue (Roadway Screening Analysis)	6.2	0.18	<0.03

Calculator) at ~ 50 feet			
Broadway (Roadway Screening Analysis Calculator) at ~ 720 feet	0.9	0.03	<0.03
Harrison Street (Roadway Screening Analysis Calculator) at ~470 feet	1.7	0.04	<0.03
Cumulative Total	69.4	0.36	<0.23
BAAQMD Threshold – Cumulative Sources	>100	>0.8	>10.0
Significant?	No	No	No

Project Emergency Generator Testing and Maintenance -

As previously described one emergency back-up generator driven by diesel-fueled engine would be associated with either project alternative. 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 AIR-3.

The generators would also require permits from the BAAQMD, since they are equipped with engines larger than 50 hp. As part of the BAAQMD permit requirements, an assessment that shows less-than-significant health risks from diesel particulate matter exposure would be required. The risk assessment, prepared by BAAQMD, would have to show that cancer risks are less than 10 per million and that the project includes Best Available Toxics Control Technology, which would set limits for diesel particulate matter emissions. Sources of air pollutant emissions complying with all applicable BAAQMD regulations generally will not be considered to have a significant air quality community risk impact.

For calculating risks associated with generator emissions, emissions from the 1000 KW generator were considered. Emissions from the testing and maintenance of the generators were calculated using CalEEMod, as described previously. Results of generator modeling indicate average daily emissions of about 0.044 pounds of DPM per day. Risk and PM_{2.5} concentrations from a diesel generator of this size and average daily emissions were then calculated based on BAAQMD's *Risk and Hazards Emissions Screening Calculator (Beta Version)*. Results indicate that the project generators would result in an excess cancer risk of 7.76 per million,⁹ PM_{2.5} concentration of less than 0.01 µg/m³ and HI of <0.01, all of which would be below BAAQMD thresholds of significance at nearby sensitive receptors. *Therefore, this impact would be considered less than significant.* Attachment 3 includes emission factors and risk modeling calculations for the project emergency back-up generator.

Table 5 summarizes the impacts from all the above mentioned sources on the operational MEI, including the project generator.

⁹ Includes adjustment factor of 1.3744 to account for latest OEHHHA methodology per correspondence with Alison Kirk, BAAQMD, November 23, 2015.

The cumulative impacts of TAC emissions from testing and maintenance of the project generator, nearby stationary sources and traffic on Grand Avenue, Broadway and Harrison Street on the operational MEI have been summarized in Table 5. As shown in Table 5, the sum of impacts from combined sources at the Generator MEI would be below the thresholds of significance and this impact would be considered *less-than-significant*. 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 AIR-3: **Stationary Sources of Air Pollution (Toxic Air Contaminants)**.

Table 5. Impact of combined sources at the Operational MEI

Source	Maximum Cancer Risk (per million)	Maximum Annual PM _{2.5} Concentration (µg/m ³)	Maximum Hazard Index
Project Generator	7.8	<0.01	<0.01
Off-site cumulative sources (see Table 4)	45.6	0.29	0.21
Cumulative Total	53.4	<0.30	<0.22
BAAQMD Threshold – Cumulative Sources	>100	>0.8	>10.0
Significant?	No	No	No

The Project would be required to comply with **SCA-AIR-2: Construction-Related Air Pollutant Controls (Dust and Equipment Emissions)**, including the enhanced control measures to control construction emissions of fugitive dust.

The project shall develop a plan demonstrating that the off-road equipment used on-site to construct the project would achieve a fleet-wide average 38 percent reduction in PM_{2.5} exhaust emissions or more. One feasible plan to achieve this reduction would include the following:

- All mobile diesel-powered off-road equipment larger than 25 horsepower and operating on the site for more than two days continuously shall meet, at a minimum, U.S. EPA particulate matter emissions standards for Tier 2 engines or equivalent. The construction contractor could use other measures to minimize construction period DPM emission to reduce the predicted cancer risk below the thresholds. The use of equipment that includes CARB-certified Level 3 Diesel Particulate Filters^[1] or alternatively-fueled equipment (i.e., non-diesel) would meet this requirement. Other measures may be the use of added exhaust devices, or a combination of measures, provided that these measures are approved by the City and demonstrated to reduce community risk impacts to less than significant.

Implementation of SCA AIR-2 would reduce on-site diesel exhaust emissions. This would reduce the cancer risk proportionally, such that the risk would be less than 9.1 in one million at the residential MEI.

^[1] See <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>

Figure 1. Project Construction Site and Locations of Off-Site Sensitive Receptors and Maximum TAC and PM_{2.5} Impacts



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 predict GHG emissions from operation of the site assuming full build-out of the project. The project land use types and size and other project-specific information were input to the model, as described above. CalEEMod provides emissions for transportation, areas sources, electricity consumption, natural gas combustion, electricity usage associated with water usage and wastewater discharge, and solid waste land filling and transport. CalEEMod output worksheets are included in *Attachment 4*.

CalEEMod 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 for 2014, which is 429.6 pounds of CO₂e per megawatt of electricity produced.¹⁰

Service Population Emissions

The project service population efficiency rate is based on the number of future full-time employees. The number of future full time employees is estimated at 2,655 for scheme 1 and 1,338 for Scheme 2 based on an approximate 3 employees per 1,000 sf of retail or office space.

Construction Emissions

GHG emissions associated with construction were computed to be 2,467 MT of CO₂e for scheme 1 and 1,172 MT of CO₂e for scheme 2 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.

¹⁰ See Climate Registry most current version of default emissions factors: <http://www.theclimateregistry.org/tools-resources/reporting-protocols/general-reporting-protocol>.

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 2019 as shown in Table 5, annual emissions resulting from operation of the proposed project are predicted to be 8467.7 MT of CO₂e for Scheme1 and 4687.7 MT of CO₂e for Scheme 2. These emissions would exceed the BAAQMD threshold of 1,100 MT of CO₂e/yr and, 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.*

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

Source Category	Scheme 1(2020)	Scheme 2(2019)
Area	0	0
Energy Consumption	4183	2130
Mobile	3400	2107
Solid Waste Generation	414	209
Stationary	26	19
Water Usage	445	223
Total	8468	4688
<i>Service Population Emissions^{1,2}</i>	3.2	3.5
<i>BAAQMD Threshold</i>	4.6	4.6

¹ Based on a service population of 2,655 employees for Scheme 1

² Based on a service population of 1,338 employees for Scheme 2

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. 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.

Supporting Information

Project data, assumptions and modeling output used in this study are provided in the Attachments to this report. Attachment 1 includes the methodology for computing community risk impacts. Attachment 2 consists of the CalEEMod output file used for predicting the TAC (toxic air contaminants) emissions and the health risk calculation. The calculations and results of generator risk modeling for the on-site and off-site generators, summary of stationary source risks and results of roadway screening calculations can be found in Attachment 3. Attachment 4 includes the CalEEMod output files for construction criteria pollutants, operational and Greenhouse Gas Emissions.

Attachment 1: Health Risk Calculation 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. While the OEHHA guidelines use substantially more conservative assumptions than the current Bay Area Air Quality Management District (BAAQMD) guidelines, BAAQMD has not formally adopted recommended procedures for applying the newest OEHHA guidelines. BAAQMD is in the process of developing new guidance and has developed proposed HRA Guidelines as part of the proposed amendments to Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.¹³ Exposure parameters from the OEHHA guidelines and newly proposed 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,

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. *Workshop Report. Proposed Amendments to Air District Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants. Appendix C. Proposed Air District HRA Guidelines*. January 2016.

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. BAAQMD recommends using these FAH factors for residential exposures.

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)

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 (µg/m³)

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 < 16	16 - 30
DPM Cancer Potency Factor (mg/kg-day) ⁻¹		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day)*		361	1,090	572	261
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14
Exposure Frequency (days/year)		350	350	350	350
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home		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 2: CalEEMod Output (TAC Emissions), Health Risk Calculations

CalEEMod Output

TAC Emissions

2 Kaiser Plaza, Alternative B, TAC emissions - Alameda County, Annual

2 Kaiser Plaza, Scheme 1, TAC 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	877.52	1000sqft	1.02	877,522.00	0
Enclosed Parking Structure	342.00	Space	0.00	200,785.00	0
Strip Mall	7.37	1000sqft	0.00	7,369.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	429.6	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Altered construction schedule based on project duration of 572 days

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment usage on higher site acreage

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip lengths for health risk assessment

Vendor Trips (Building Construction)= $41000/16 \times 2/466 = 12 + 178$

Demolition - 1.02 acre pavement removed

Grading - acres disturbed based on increased acreage

Construction Off-road Equipment Mitigation - Best Management Practices

all equipment <25 HP, tier 2 Mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	200.00	466.00

tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	2.00	10.00
tblFleetMix	FleetMixLandUseSubType	General Office Building	Enclosed Parking Structure
tblFleetMix	FleetMixLandUseSubType	Enclosed Parking Structure	General Office Building
tblGrading	AcresOfGrading	16.50	7.50
tblGrading	AcresOfGrading	5.00	12.50
tblLandUse	BuildingSpaceSquareFeet	877,520.00	877,522.00
tblLandUse	BuildingSpaceSquareFeet	136,800.00	200,785.00
tblLandUse	BuildingSpaceSquareFeet	7,370.00	7,369.00
tblLandUse	LandUseSquareFeet	877,520.00	877,522.00
tblLandUse	LandUseSquareFeet	136,800.00	200,785.00
tblLandUse	LandUseSquareFeet	7,370.00	7,369.00
tblLandUse	LotAcreage	20.15	1.02
tblLandUse	LotAcreage	3.08	0.00
tblLandUse	LotAcreage	0.17	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2020
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	HaulingTripLength	20.00	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50

tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripLength	7.30	0.50
tblTripsAndVMT	VendorTripNumber	178.00	190.00
tblTripsAndVMT	WorkerTripLength	10.80	0.50
tblTripsAndVMT	WorkerTripLength	10.80	0.50
tblTripsAndVMT	WorkerTripLength	10.80	0.50
tblTripsAndVMT	WorkerTripLength	10.80	0.50
tblTripsAndVMT	WorkerTripLength	10.80	0.50

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					
2017	0.3672	3.7219	2.1602	3.7500e-003	0.1599	0.1721	0.3319	0.0759	0.1611	0.2370	0.0000	342.6744	342.6744	0.0805	0.0000	344.6865
2018	0.4629	4.8613	3.0978	5.6400e-003	0.0297	0.1991	0.2289	8.3100e-003	0.1872	0.1955	0.0000	511.3995	511.3995	0.1108	0.0000	514.1693
2019	4.7574	1.0827	0.7281	1.3600e-003	7.3600e-003	0.0420	0.0493	2.0500e-003	0.0396	0.0416	0.0000	122.8738	122.8738	0.0255	0.0000	123.5125
Maximum	4.7574	4.8613	3.0978	5.6400e-003	0.1599	0.1991	0.3319	0.0759	0.1872	0.2370	0.0000	511.3995	511.3995	0.1108	0.0000	514.1693

Mitigated Construction

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

Year	tons/yr										MT/yr					
2017	0.1685	3.2814	2.1667	3.7500e-003	0.0811	0.0833	0.1644	0.0207	0.0832	0.1039	0.0000	342.6742	342.6742	0.0805	0.0000	344.6862
2018	0.2543	4.8828	3.1361	5.6400e-003	0.0297	0.1213	0.1511	8.3100e-003	0.1211	0.1295	0.0000	511.3991	511.3991	0.1108	0.0000	514.1689
2019	4.7161	1.1659	0.7497	1.3600e-003	7.3600e-003	0.0297	0.0371	2.0500e-003	0.0297	0.0317	0.0000	122.8737	122.8737	0.0255	0.0000	123.5124
Maximum	4.7161	4.8828	3.1361	5.6400e-003	0.0811	0.1213	0.1644	0.0207	0.1211	0.1295	0.0000	511.3991	511.3991	0.1108	0.0000	514.1689

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	8.03	3.47	-1.11	0.00	40.02	43.28	42.23	64.04	39.67	44.10	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2017	5-31-2017	0.7756	0.5287
2	6-1-2017	8-31-2017	1.3735	1.1987
3	9-1-2017	11-30-2017	1.4567	1.2931
4	12-1-2017	2-28-2018	1.3506	1.2646
5	3-1-2018	5-31-2018	1.3429	1.2958
6	6-1-2018	8-31-2018	1.3473	1.3001
7	9-1-2018	11-30-2018	1.3241	1.2775
8	12-1-2018	2-28-2019	1.2407	1.2500
9	3-1-2019	5-31-2019	5.0383	5.0549
		Highest	5.0383	5.0549

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	4/11/2017	5	10	
3	Grading	Grading	4/12/2017	6/12/2017	5	44	

4	Building Construction	Building Construction	6/13/2017	3/26/2019	5	466
5	Architectural Coating	Architectural Coating	3/27/2019	5/7/2019	5	30

Acres of Grading (Site Preparation Phase): 12.5

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,327,337; Non-Residential Outdoor: 442,446; Striped Parking

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	65.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

Site Preparation	3	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Building Construction	9	367.00	190.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	73.00	0.00	0.00	0.50	0.50	0.50	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	0.0276	0.2676	0.1556	2.4000e-004	7.0100e-003	0.0165	0.0235	1.0600e-003	0.0154	0.0165	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

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	3.6300e-003	5.0000e-004	0.0000	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.3901	0.3901	9.0000e-005	0.0000	0.3922
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	9.0000e-005	1.1700e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0738	0.0738	1.0000e-005	0.0000	0.0739
Total	2.8000e-004	3.7200e-003	1.6700e-003	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.4638	0.4638	1.0000e-004	0.0000	0.4661

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.1500e-003	0.0000	3.1500e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8600e-003	0.2121	0.1542	2.4000e-004		7.1800e-003	7.1800e-003		7.1800e-003	7.1800e-003	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	8.8600e-003	0.2121	0.1542	2.4000e-004	3.1500e-003	7.1800e-003	0.0103	2.4000e-004	7.1800e-003	7.4200e-003	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	3.6300e-003	5.0000e-004	0.0000	1.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.3901	0.3901	9.0000e-005	0.0000	0.3922
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	9.0000e-005	1.1700e-003	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0738	0.0738	1.0000e-005	0.0000	0.0739

Total	2.8000e-004	3.7200e-003	1.6700e-003	0.0000	6.0000e-005	1.0000e-005	7.0000e-005	1.0000e-005	0.0000	2.0000e-005	0.0000	0.4638	0.4638	1.0000e-004	0.0000	0.4661

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0330	0.0000	0.0330	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6500e-003	0.1111	0.0420	9.0000e-005		5.2300e-003	5.2300e-003		4.8100e-003	4.8100e-003	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638
Total	9.6500e-003	0.1111	0.0420	9.0000e-005	0.0330	5.2300e-003	0.0382	0.0152	4.8100e-003	0.0200	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.6000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0227	0.0227	0.0000	0.0000	0.0227
Total	6.0000e-005	3.0000e-005	3.6000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0227	0.0227	0.0000	0.0000	0.0227

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	3.4200e-003	0.0000	3.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4500e-003	0.0747	0.0491	9.0000e-005		1.8700e-003	1.8700e-003		1.8700e-003	1.8700e-003	0.0000	8.0024	8.0024	2.4500e-003	0.0000	8.0637
Total	2.4500e-003	0.0747	0.0491	9.0000e-005	0.0148	1.8700e-003	0.0167	3.4200e-003	1.8700e-003	5.2900e-003	0.0000	8.0024	8.0024	2.4500e-003	0.0000	8.0637

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	3.0000e-005	3.6000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0227	0.0227	0.0000	0.0000	0.0227
Total	6.0000e-005	3.0000e-005	3.6000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0227	0.0227	0.0000	0.0000	0.0227

3.4 Grading - 2017

Unmitigated Construction On-Site

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

Fugitive Dust					0.1033	0.0000	0.1033	0.0551	0.0000	0.0551	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.4024	0.1548	3.1000e-004		0.0192	0.0192		0.0177	0.0177	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582
Total	0.0353	0.4024	0.1548	3.1000e-004	0.1033	0.0192	0.1226	0.0551	0.0177	0.0727	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582

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	2.6000e-004	1.2000e-004	1.5900e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0998	0.0998	1.0000e-005	0.0000	0.1001
Total	2.6000e-004	1.2000e-004	1.5900e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0998	0.0998	1.0000e-005	0.0000	0.1001

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0465	0.0000	0.0465	0.0124	0.0000	0.0124	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.9300e-003	0.2698	0.1779	3.1000e-004		6.8300e-003	6.8300e-003		6.8300e-003	6.8300e-003	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582
Total	8.9300e-003	0.2698	0.1779	3.1000e-004	0.0465	6.8300e-003	0.0533	0.0124	6.8300e-003	0.0192	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.2000e-004	1.5900e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0998	0.0998	1.0000e-005	0.0000	0.1001
Total	2.6000e-004	1.2000e-004	1.5900e-003	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0998	0.0998	1.0000e-005	0.0000	0.1001

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214
Total	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214

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	0.0301	1.0068	0.2570	1.0000e-003	6.4900e-003	2.1400e-003	8.6300e-003	1.9100e-003	2.0400e-003	3.9600e-003	0.0000	95.1367	95.1367	0.0196	0.0000	95.6262
Worker	0.0397	0.0183	0.2381	1.7000e-004	9.9200e-003	2.5000e-004	0.0102	2.6700e-003	2.3000e-004	2.9000e-003	0.0000	14.9900	14.9900	1.3000e-003	0.0000	15.0224
Total	0.0698	1.0251	0.4951	1.1700e-003	0.0164	2.3900e-003	0.0188	4.5800e-003	2.2700e-003	6.8600e-003	0.0000	110.1267	110.1267	0.0209	0.0000	110.6486

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0778	1.6959	1.2869	1.9400e-003		0.0651	0.0651		0.0651	0.0651	0.0000	173.1546	173.1546	0.0427	0.0000	174.2211
Total	0.0778	1.6959	1.2869	1.9400e-003		0.0651	0.0651		0.0651	0.0651	0.0000	173.1546	173.1546	0.0427	0.0000	174.2211

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0301	1.0068	0.2570	1.0000e-003	6.4900e-003	2.1400e-003	8.6300e-003	1.9100e-003	2.0400e-003	3.9600e-003	0.0000	95.1367	95.1367	0.0196	0.0000	95.6262
Worker	0.0397	0.0183	0.2381	1.7000e-004	9.9200e-003	2.5000e-004	0.0102	2.6700e-003	2.3000e-004	2.9000e-003	0.0000	14.9900	14.9900	1.3000e-003	0.0000	15.0224

Total	0.0698	1.0251	0.4951	1.1700e-003	0.0164	2.3900e-003	0.0188	4.5800e-003	2.2700e-003	6.8600e-003	0.0000	110.1267	110.1267	0.0209	0.0000	110.6486

3.5 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	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867
Total	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867

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	0.0486	1.7801	0.4224	1.8200e-003	0.0118	2.9600e-003	0.0147	3.4700e-003	2.8300e-003	6.3000e-003	0.0000	174.6379	174.6379	0.0327	0.0000	175.4565
Worker	0.0646	0.0289	0.3812	3.0000e-004	0.0180	4.3000e-004	0.0184	4.8400e-003	4.0000e-004	5.2400e-003	0.0000	26.4754	26.4754	2.0300e-003	0.0000	26.5261
Total	0.1132	1.8090	0.8036	2.1200e-003	0.0297	3.3900e-003	0.0331	8.3100e-003	3.2300e-003	0.0115	0.0000	201.1132	201.1132	0.0348	0.0000	201.9826

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1411	3.0739	2.3325	3.5100e-003		0.1179	0.1179		0.1179	0.1179	0.0000	310.2859	310.2859	0.0760	0.0000	312.1864
Total	0.1411	3.0739	2.3325	3.5100e-003		0.1179	0.1179		0.1179	0.1179	0.0000	310.2859	310.2859	0.0760	0.0000	312.1864

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0486	1.7801	0.4224	1.8200e-003	0.0118	2.9600e-003	0.0147	3.4700e-003	2.8300e-003	6.3000e-003	0.0000	174.6379	174.6379	0.0327	0.0000	175.4565
Worker	0.0646	0.0289	0.3812	3.0000e-004	0.0180	4.3000e-004	0.0184	4.8400e-003	4.0000e-004	5.2400e-003	0.0000	26.4754	26.4754	2.0300e-003	0.0000	26.5261
Total	0.1132	1.8090	0.8036	2.1200e-003	0.0297	3.3900e-003	0.0331	8.3100e-003	3.2300e-003	0.0115	0.0000	201.1132	201.1132	0.0348	0.0000	201.9826

3.5 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	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435

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	0.0104	0.4058	0.0902	4.3000e-004	2.7500e-003	6.0000e-004	3.3400e-003	8.1000e-004	5.7000e-004	1.3800e-003	0.0000	40.7330	40.7330	7.3000e-003	0.0000	40.9155
Worker	0.0136	5.8800e-003	0.0791	7.0000e-005	4.2000e-003	1.0000e-004	4.3000e-003	1.1300e-003	9.0000e-005	1.2200e-003	0.0000	6.0157	6.0157	4.1000e-004	0.0000	6.0260
Total	0.0240	0.4117	0.1693	5.0000e-004	6.9500e-003	7.0000e-004	7.6400e-003	1.9400e-003	6.6000e-004	2.6000e-003	0.0000	46.7487	46.7487	7.7100e-003	0.0000	46.9415

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0330	0.7184	0.5452	8.2000e-004		0.0276	0.0276		0.0276	0.0276	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	0.0330	0.7184	0.5452	8.2000e-004		0.0276	0.0276		0.0276	0.0276	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0104	0.4058	0.0902	4.3000e-004	2.7500e-003	6.0000e-004	3.3400e-003	8.1000e-004	5.7000e-004	1.3800e-003	0.0000	40.7330	40.7330	7.3000e-003	0.0000	40.9155
Worker	0.0136	5.8800e-003	0.0791	7.0000e-005	4.2000e-003	1.0000e-004	4.3000e-003	1.1300e-003	9.0000e-005	1.2200e-003	0.0000	6.0157	6.0157	4.1000e-004	0.0000	6.0260
Total	0.0240	0.4117	0.1693	5.0000e-004	6.9500e-003	7.0000e-004	7.6400e-003	1.9400e-003	6.6000e-004	2.6000e-003	0.0000	46.7487	46.7487	7.7100e-003	0.0000	46.9415

3.6 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	4.6560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380
Total	4.6600	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380

Unmitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	5.8000e-004	7.7400e-003	1.0000e-005	4.1000e-004	1.0000e-005	4.2000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	0.5885	0.5885	4.0000e-005	0.0000	0.5895
Total	1.3300e-003	5.8000e-004	7.7400e-003	1.0000e-005	4.1000e-004	1.0000e-005	4.2000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	0.5885	0.5885	4.0000e-005	0.0000	0.5895

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.6560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7100e-003	0.0353	0.0275	4.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380
Total	4.6577	0.0353	0.0275	4.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3300e-003	5.8000e-004	7.7400e-003	1.0000e-005	4.1000e-004	1.0000e-005	4.2000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	0.5885	0.5885	4.0000e-005	0.0000	0.5895

Total	1.3300e-003	5.8000e-004	7.7400e-003	1.0000e-005	4.1000e-004	1.0000e-005	4.2000e-004	1.1000e-004	1.0000e-005	1.2000e-004	0.0000	0.5885	0.5885	4.0000e-005	0.0000	0.5895

Emission Summary

2 Kaiser Plaza, Scheme 1, Oakland, CA

DPM Construction Emissions and Modeling Emission Rates - Unmitigated

Construction Year	Activity	DPM (ton/year)	Area Source	DPM Emissions			Modeled Area (m ²)	DPM Emission Rate (g/s/m ²)
				(lb/yr)	(lb/hr)	(g/s)		
2017	Construction	0.1721	1_DPM	344.2	0.10478	1.32E-02	3,974	3.32E-06
2018	Construction	0.1991	1_DPM	398.2	0.12122	1.53E-02	3,974	3.84E-06
2019	Construction	0.0420	1_DPM	84.0	0.02557	3.22E-03	3,974	8.11E-07
Total		0.4132		826	0	0		

Construction Hours
 hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

2 Kaiser Plaza, Scheme 1, Oakland, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling - Unmitigated

Construction Year	Activity	Area Source	PM2.5 Emissions				Modeled Area (m ²)	PM2.5 Emission Rate g/s/m ²
			(ton/year)	(lb/yr)	(lb/hr)	(g/s)		
2017	Construction	1_FUG	0.0759	151.8	0.04621	5.82E-03	3,974	1.47E-06
2018	Construction	1_FUG	0.0083	16.6	0.00506	6.37E-04	3,974	1.60E-07
2019	Construction	1_FUG	0.0021	4.1	0.00125	1.57E-04	3,974	3.96E-08
Total			0.0863	172.5200	0.0525	0.0066		

Construction Hours
 hr/day = 9 (7am - 4pm)
 days/yr = 365
 hours/year = 3285

Health Risk Calculations

2 Kaiser Plaza, Alternate B, Oakland, CA - Construction Impacts - Unmitigated Emissions
Maximum DPM Cancer Risk Calculations From Construction
Off-Site Residential Receptor Locations - 4.5 meters

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

Age --> Parameter	Infant/Child			Adult
	3rd Trimester	0 - 2	2 - 16	16 - 30
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
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

Construction Cancer Risk by Year - Maximum Impact Receptor Location

Construction Cancer Risk by Year - Maximum Impact Receptor Location												
Exposure Year	Exposure Duration (years)	Age	Infant/Child - Exposure Information			Infant/Child Cancer Risk (per million)	Adult - Exposure Information			Adult Cancer Risk (per million)	Fugitive PM2.5	Total PM2.5
			DPM Conc (ug/m3)		Age Sensitivity Factor		Modeled		Age Sensitivity Factor			
			Year	Annual			Year	Annual				
0	0.25	-0.25 - 0*	2017	0.0388	10	2.00	2017	-	-	-		
1	1	0 - 1	2017	0.0388	10	6.37	2017	0.0388	1	0.11	0.0182	0.057
2	1	1 - 2	2018	0.0448	10	7.36	2018	0.0448	1	0.13	0.0020	0.047
3	1	2 - 3	2019	0.0095	3	0.24	2019	0.0095	1	0.03	0.0005	0.010
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00		
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00		
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00		
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00		
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00		
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00		
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00		
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00		
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00		
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00		
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00		
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00		
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00		
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00		
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00		
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00		
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00		
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00		
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00		
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00		
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00		
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00		
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00		
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00		
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00		
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00		
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00		
Total Increased Cancer Risk						16.0				0.27		

* Third trimester of pregnancy

Results Summary

2 Kaiser Plaza, Scheme 1, Oakland, CA - Project Construction Health Impact Summary

Maximum Impacts at Off-Site Residences

Construction Year	Unmitigated					
	Maximum Concentrations		Cancer Risk (per million)		Hazard Index (-)	Maximum Annual PM2.5 Concentration (µg/m ³)
	Exhaust PM2.5/DPM (µg/m ³)	Fugitive PM2.5 (µg/m ³)				
2017	0.0388	0.0182	8.37	0.11	0.008	0.057
2018	0.0448	0.0020	7.36	0.13	0.009	0.047
2019	0.0095	0.0005	0.24	0.03	0.002	0.010
Total	0.0931	0.0207	16.0	0.3	-	-
Maximum Annual	0.0448	0.0182	-	-	0.009	0.057

Attachment 3 Generator Risk Modeling

Project Generators

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 (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
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	1.60E-04	1.70E-07
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:	1.70E-07

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
Srontium 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	1.60E-04	6.0559E-05
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:		6.06E-05

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Pollutant Name	Emission/lbs per day	Acute Hazard
ACETALDEHYDE	0	0
ACROLEIN		0
ACRYLIC ACID		0
AMMONIA		0
ARSENIC AND COMPOUNDS (INORGANIC)1,2		0
ARSINE		0
BENZENE1		0
BENZYL CHLORIDE		0
CARBON DISULFIDE1		0
CARBON MONOXIDE		0
CARBON TETRACHLORIDE1 (Tetrachloromethane)		0
CHLORINE		0
CHLOROFORM1		0
CHLOROPICRIN		0
COPPER AND COMPOUNDS		0
Cyanide And Compounds (inorganic)		0
HYDROGEN CYANIDE (Hydrocyanic acid)		0
1,4-DIOXANE (1,4-Diethylene dioxide)		0
EPICHLOROHYDRIN (1-Chloro-2,3-epoxypropane)		0
Fluorides		0
HYDROGEN FLUORIDE (Hydrofluoric acid)		0
FORMALDEHYDE		0
ETHYLENE GLYCOL BUTYL ETHER – EGBE		0
ETHYLENE GLYCOL ETHYL ETHER – EGEE1		0
ETHYLENE GLYCOL ETHYL ETHER ACETATE – EGEEA1		0
ETHYLENE GLYCOL METHYL ETHER – EGME1		0
HYDROCHLORIC ACID (Hydrogen chloride)		0
HYDROGEN SULFIDE		0
ISOPROPYL ALCOHOL (Isopropanol)		0
MERCURY AND COMPOUNDS (INORGANIC) values also apply to:		0
Mercuric chloride		0
METHANOL		0
METHYL BROMIDE (Bromomethane)		0
METHYL CHLOROFORM (1,1,1-Trichloroethane)		0
METHYL ETHYL KETONE (2-Butanone)		0
METHYLENE CHLORIDE (Dichloromethane)		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
NITRIC ACID		0
OZONE		0
PROPYLENE OXIDE		0
HYDROGEN SELENIDE		0
SODIUM HYDROXIDE		0
STYRENE		0
SULFATES		0
SULFUR DIOXIDE		0
SULFURIC ACID AND OLEUM		0
SULFURIC ACID		0
SULFUR TRIOXIDE		0
OLEUM		0
TOLUENE		0
TRIETHYLAMINE		0
Vanadium (fume or dust)		0
VANADIUM PENTOXIDE		0
VINYL CHLORIDE (Chloroethylene)		0
XYLENES (mixed isomers)		0
m-XYLENE		0
o-XYLENE		0
p-XYLENE		0
TOTAL:		0.00E+00

Plant #:

Plant Name:

Number of Sources:

Mathilda Commons

50 kW Generator

Diesel PM Concentrations	Emissions (lbs/day)	12.5 Concentration (ug/m3)
	1.60E-04	0.000309704
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
		0
TOTAL:		0.000309704

Plant #: 12093
 Plant Name: Andpak
 Number of Sources: 2
 Fac

Emissions =
 Source:

Diesel Engine Exhaust Particul	2.47E+00	lbs/year
Methylene chloride	3.29E+02	lbs/year
TOXIC INVENTORY 2009		
lbs/year		

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		0		0
40	131	0.58		0		0
50	164	0.5		0		0
60	197	0.41		0		0
70	230	0.31	19.43	6.0233		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

Kaiaiser Plaza Scheme 1- Emergency Generator Criteria Pollutant and GHG Emissions

Analysis Year = 2019														50 = Annual Days of Project Operation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Off-Road Equipment		No. Units	Engine Age (years)	Engine Model Year	Daily Hours In Use	Days Per Year	Unit Annual Hours Use	Use Factor	Load Factor	Cumulative Hours Operation Per Unit	Engine (hp)	Fuel Type	Level of VDECS Used	Emission Factor (g/hp-hr)						Average Daily Emissions (lb/day)						Annual Emissions (ton/yr)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
														NOx	CO	ROG	PM10	PM2.5	SO2	CO2	NOx	CO	ROG	PM10	PM2.5	SO2	CO2	NOx	CO	ROG	PM10	PM2.5	SO2	CO2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Emission Factors - Off-Road Compression Ignited Engines																				
NOx			CO			ROG			PM10			PM2.5			CO2			SO2		
ZH EF	DR	Fuel	ZH EF	DR	Fuel	ZH EF	DR	Fuel	ZH EF	DR	Fuel	ZH EF	DR	Fuel	ZH EF	DR	Fuel	ZH EF	DR	Fuel
(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF	(g/hp-hr)	(g/hp-hr ²)	CF
ULSD1202017	1.40	1.88E-05	0.95	3.05	8.10E-05	1.00	0.07	1.74E-05	1.00	0.01	1.04E-06	0.85	0.01	1.04E-06	0.85	568.30	0.00E+00	0.92	0.01	

Notes: ZH EF = Zero hour emission factor
DR = Deterioration rate
ULSD = Ultra low sulfur diesel (15 ppmw sulfur, 0.0015% sulfur)

Refs: CARB OFFROAD2007 model (<http://www.arb.ca.gov/msel/offroad/offroad.htm>), December, 2006.
Stationary/Off-road engines ARB, "California's Emissions Inventory for Off-Road Large Compression-Ignited (CI) Engines (> 25 HP)" MAC#99-32

3E-04

Refined Modeling- Caltrans Off-Site Generator

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

Printed: JAN 24, 2017

State of California Department of Transportation (P# 14195)

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

1	Diesel Engine, Caterpillar model 3512, emergency standby C22BG098			
		Benzene	41	3.83E-03
		Formaldehyde	124	3.17E-04
		Organics (other, including	990	1.85E-01
		Arsenic (all)	1030	3.34E-06
		Beryllium (all) pollutant	1040	1.96E-06
		Cadmium	1070	8.34E-06
		Chromium (hexavalent)	1095	1.73E-07
		Lead (all) pollutant	1140	7.08E-06
		Manganese	1160	1.11E-05
		Nickel pollutant	1180	1.35E-04
		Mercury (all) pollutant	1190	2.36E-06
		Diesel Engine Exhaust Part	1350	3.68E-02
		PAH's (non-speciated)	1840	1.76E-05
		Nitrous Oxide (N2O)	2030	1.03E-03
		Nitrogen Oxides (part not	2990	2.70E+00
		Sulfur Dioxide (SO2)	3990	1.25E-03
		Carbon Monoxide (CO) pollu	4990	5.87E-01
		Carbon Dioxide, non-biogen	6960	1.28E+02
		Methane (CH4)	6970	5.13E-03
2	Diesel Engine, Detroit Diesel model 8.2 40847312, emergency C24AG098			
		Benzene	41	2.13E-03
		Formaldehyde	124	1.74E-04
		Organics (other, including	990	1.16E-01
		Arsenic (all)	1030	1.83E-06
		Beryllium (all) pollutant	1040	1.07E-06
		Cadmium	1070	4.57E-06
		Chromium (hexavalent)	1095	9.45E-08
		Lead (all) pollutant	1140	3.88E-06
		Manganese	1160	6.08E-06
		Nickel pollutant	1180	7.39E-05
		Mercury (all) pollutant	1190	1.29E-06
		Diesel Engine Exhaust Part	1350	2.02E-02
		PAH's (non-speciated)	1840	9.64E-06
		Nitrous Oxide (N2O)	2030	5.62E-04
		Nitrogen Oxides (part not	2990	1.48E+00
		Sulfur Dioxide (SO2)	3990	6.85E-04
		Carbon Monoxide (CO) pollu	4990	3.21E-01
		Carbon Dioxide, non-biogen	6960	7.03E+01
		Methane (CH4)	6970	2.81E-03
3	Boiler			
	C1150189			
			0	0.00E+00
4	Boiler			

C1150189

0 0.00E+00

PLANT TOTAL:

lbs/day Pollutant

5.16E-06 Arsenic (all) (1030)
5.96E-03 Benzene (41)
3.03E-06 Beryllium (all) pollutant (1040)
1.29E-05 Cadmium (1070)
1.99E+02 Carbon Dioxide, non-biogenic CO2 (6960)
9.08E-01 Carbon Monoxide (CO) pollutant (4990)
2.67E-07 Chromium (hexavalent) (1095)
5.70E-02 Diesel Engine Exhaust Particulate Matter (1350)
4.91E-04 Formaldehyde (124)
1.10E-05 Lead (all) pollutant (1140)
1.72E-05 Manganese (1160)
3.65E-06 Mercury (all) pollutant (1190)
7.94E-03 Methane (CH4) (6970)
2.09E-04 Nickel pollutant (1180)
4.18E+00 Nitrogen Oxides (part not spec elsewhere) (2990)
1.59E-03 Nitrous Oxide (N2O) (2030)
3.01E-01 Organics (other, including CH4) (990)
2.72E-05 PAH's (non-speciated) (1840)
1.94E-03 Sulfur Dioxide (SO2) (3990)

2 Kaiser Plaza - DPM Cancer Risks at Construction MEI
Caltrans Diesel Generator
Risk at location of Construstcion MEI

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
 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: Caltrans Diesel Generator
Construaction MEI Receptor Location (4.5 meters height)

Exposure Duration (years)	Age	Age Sensitivity Factor	DPM Annual Conc (ug/m3)	DPM Cancer Risk (per million)
0.25	-0.25 - 0*	10	0.0013	0.02
2	1 - 2	10	0.0013	0.44
14	3 - 16	3	0.0013	0.49
14	17 - 30	1	0.0013	0.05
Total Increased Cancer Risk				1.0

* Third trimester of pregnancy

Greyhound Site, San Jose, CA - AERMOD Modeling Parameters
Caltrans Diesel Generator

DPM Emission Rates			
Source Type	Annual Operation	DPM Emissions	
	(hr)	Daily* (lb/day)	Annual (lb/yr)
Generator	-	0.0570	20.81

* From BAAQMD permit inventory

Modeling Information			
Model:	AERMOD		
Source	Diesel Engine		
Source Type	Point		
Distance to MEI (ft)	140 feet		
Meteorological Data	2009-2013 CARB Metro Oakland Airport Data		
Point Source Stack Parameters			
Generator engine size (hp)	unknown		
Stack Height (ft)	224	Caltrans Building	
Stack Diameter** (ft)	0.25		
Stack Exit Velocity** (ft/sec)	164		
Exhaust Temperature** (F)	656		
Annual Emission Rate (lb/year)	20.81	from BAAQMD inventory data	
Hourly Emission Rate (lb/hr)	2.38E-03		

** BAAQMD default generator parameters

[illegible]

Roadway Screening Analysis Calculator

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

INSTRUCTIONS:

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

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

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

Notes and References listed below the Search Boxes

Search Parameters

County

Alameda

Roadway Direction

North-South

Side of the Roadway

East

Distance from Roadway

720

feet

Annual Average Daily Traffic (ADT)

12,340

Results

Alameda County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.027

(µg/m³)

Cancer Risk

1.36

(per million)

Broadway

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

Adjusted for EMFAC2014 for 2018

0.94

(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.

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.
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- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

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

Notes and References listed below the Search Boxes

Search Parameters

County

Alameda

Roadway Direction

East-West

Side of the Roadway

North

Distance from Roadway

50

feet

Annual Average Daily Traffic (ADT)

13,370

Results

Alameda County

EAST-WEST DIRECTIONAL ROADWAY

PM2.5 annual average

0.178 (µg/m³)

Cancer Risk

9.14 (per million)

Grand Avenue

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

Adjusted for EMFAC2014 for 2018

6.28

(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.

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.
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- Annual Average Daily Traffic (ADT): Enter the annual average daily traffic on the roadway. These data may be collected from the city or the county (if the area is unincorporated).

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

Notes and References listed below the Search Boxes

Search Parameters

County

Alameda

Roadway Direction

North-South

Side of the Roadway

West

Distance from Roadway

470

feet

Annual Average Daily Traffic (ADT)

27,280

Results

Alameda County

NORTH-SOUTH DIRECTIONAL ROADWAY

PM2.5 annual average

0.043

(µg/m³)

Cancer Risk

2.46

(per million)

Harrison Street

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

Adjusted for EMFAC2014 for 2018

1.69

(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 4: CalEEMod Output files for Construction Criteria Pollutant,
Operational and Greenhouse Gas Emissions**

2 Kaiser Plaza, Alternative B, Criteria and Operational Emissions - Alameda County, Annual

2 Kaiser Plaza, Scheme 1, 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	877.52	1000sqft	1.02	877,522.00	0
Enclosed Parking Structure	342.00	Space	0.00	200,785.00	0
Strip Mall	7.37	1000sqft	0.00	7,369.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	429.6	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Altered construction schedule based on project duration of 572 days

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment usage on higher site acreage

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip lengths for health risk assessment

Vendor Trips (Building Construction)= $41000/16 \times 2/466 = 12+178$

Demolition - 1.02 acre pavemenent removed

Grading - acres distubed based on increased acreage

Vehicle Trips - From project rtip generation rates

Energy Use - Default values used

Stationary Sources - Emergency Generators and Fire Pumps - 1,000 kw generator

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	200.00	466.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	2.00	10.00
tblFleetMix	FleetMixLandUseSubType	General Office Building	Enclosed Parking Structure
tblFleetMix	FleetMixLandUseSubType	Enclosed Parking Structure	General Office Building
tblGrading	AcresOfGrading	16.50	7.50
tblGrading	AcresOfGrading	5.00	12.50
tblLandUse	BuildingSpaceSquareFeet	877,520.00	877,522.00
tblLandUse	BuildingSpaceSquareFeet	136,800.00	200,785.00
tblLandUse	BuildingSpaceSquareFeet	7,370.00	7,369.00
tblLandUse	LandUseSquareFeet	877,520.00	877,522.00
tblLandUse	LandUseSquareFeet	136,800.00	200,785.00
tblLandUse	LandUseSquareFeet	7,370.00	7,369.00
tblLandUse	LotAcreage	20.15	1.02
tblLandUse	LotAcreage	3.08	0.00
tblLandUse	LotAcreage	0.17	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	7.00

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2020
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	178.00	190.00
tblVehicleTrips	ST_TR	2.46	0.96
tblVehicleTrips	ST_TR	42.04	37.69
tblVehicleTrips	SU_TR	1.05	0.41
tblVehicleTrips	SU_TR	20.43	18.31
tblVehicleTrips	WD_TR	11.03	4.31
tblVehicleTrips	WD_TR	44.32	39.73

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					
2017	0.5010	4.7681	3.1351	8.7300e-003	0.4454	0.1880	0.6334	0.1538	0.1763	0.3300	0.0000	808.0405	808.0405	0.0921	0.0000	810.3428
2018	0.6736	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1478	0.2094	0.3572	0.0000	1,333.1196	1,333.1196	0.1298	0.0000	1,336.3646
2019	4.8047	1.4470	1.0734	3.4700e-003	0.1352	0.0467	0.1819	0.0369	0.0441	0.0809	0.0000	319.0284	319.0284	0.0299	0.0000	319.7746

Maximum	4.8047	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1538	0.2094	0.3572	0.0000	1,333.1196	1,333.1196	0.1298	0.0000	1,336.3646

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2017	5-31-2017	0.7858	0.7858
2	6-1-2017	8-31-2017	1.8180	1.8180
3	9-1-2017	11-30-2017	1.9888	1.9888
4	12-1-2017	2-28-2018	1.8534	1.8534
5	3-1-2018	5-31-2018	1.8134	1.8134
6	6-1-2018	8-31-2018	1.8056	1.8056
7	9-1-2018	11-30-2018	1.8014	1.8014
8	12-1-2018	2-28-2019	1.6970	1.6970
9	3-1-2019	5-31-2019	5.1711	5.1711
		Highest	5.1711	5.1711

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	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Energy	0.0779	0.7085	0.5951	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	4,158.8136	4,158.8136	0.2435	0.0615	4,183.2127
Mobile	0.9930	6.3947	10.9142	0.0369	2.7227	0.0447	2.7674	0.7319	0.0422	0.7741	0.0000	3,395.8981	3,395.8981	0.1555	0.0000	3,399.7856
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	167.2300	0.0000	167.2300	9.8830	0.0000	414.3054
Water						0.0000	0.0000		0.0000	0.0000	49.6537	230.4494	280.1031	5.1155	0.1236	444.8340

Total	5.0616	7.3493	11.6610	0.0414	2.7227	0.1067	2.8293	0.7319	0.1042	0.8361	216.8837	7,810.7155	8,027.5992	15.4011	0.1851	8,467.7830

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	4/11/2017	5	10	
3	Grading	Grading	4/12/2017	6/12/2017	5	44	
4	Building Construction	Building Construction	6/13/2017	3/26/2019	5	466	
5	Architectural Coating	Architectural Coating	3/27/2019	5/7/2019	5	30	

Acres of Grading (Site Preparation Phase): 12.5

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,327,337; Non-Residential Outdoor: 442,446; Striped Parking

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	65.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	367.00	190.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	73.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	0.0276	0.2676	0.1556	2.4000e-004	7.0100e-003	0.0165	0.0235	1.0600e-003	0.0154	0.0165	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

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	3.6000e-004	0.0115	1.9000e-003	3.0000e-005	5.5000e-004	6.0000e-005	6.1000e-004	1.5000e-004	6.0000e-005	2.1000e-004	0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.9000e-004	4.8800e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9982	0.9982	3.0000e-005	0.0000	0.9990
Total	9.7000e-004	0.0120	6.7800e-003	4.0000e-005	1.5800e-003	7.0000e-005	1.6500e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	3.5581	3.5581	1.7000e-004	0.0000	3.5625

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0330	0.0000	0.0330	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6500e-003	0.1111	0.0420	9.0000e-005		5.2300e-003	5.2300e-003		4.8100e-003	4.8100e-003	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638
Total	9.6500e-003	0.1111	0.0420	9.0000e-005	0.0330	5.2300e-003	0.0382	0.0152	4.8100e-003	0.0200	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638

Unmitigated Construction Off-Site

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526
Total	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214
Total	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214

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	0.0776	1.9625	0.4676	3.8500e-003	0.0898	0.0167	0.1065	0.0260	0.0160	0.0419	0.0000	367.9732	367.9732	0.0253	0.0000	368.6050
Worker	0.1247	0.0999	0.9912	2.2500e-003	0.2089	1.5800e-003	0.2105	0.0556	1.4600e-003	0.0570	0.0000	202.8892	202.8892	7.0800e-003	0.0000	203.0663

Total	0.2022	2.0624	1.4587	6.1000e-003	0.2988	0.0183	0.3170	0.0816	0.0174	0.0990	0.0000	570.8625	570.8625	0.0324	0.0000	571.6713

3.5 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	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867
Total	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867

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	0.1232	3.3423	0.7633	6.9600e-003	0.1628	0.0239	0.1867	0.0471	0.0228	0.0699	0.0000	665.0026	665.0026	0.0426	0.0000	666.0666
Worker	0.2007	0.1576	1.5725	3.9600e-003	0.3787	2.7600e-003	0.3814	0.1007	2.5500e-003	0.1033	0.0000	357.8307	357.8307	0.0112	0.0000	358.1113
Total	0.3239	3.4999	2.3359	0.0109	0.5415	0.0266	0.5681	0.1478	0.0254	0.1732	0.0000	1,022.8333	1,022.8333	0.0538	0.0000	1,024.1778

3.5 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	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435

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	0.0261	0.7411	0.1639	1.6100e-003	0.0381	4.7400e-003	0.0428	0.0110	4.5300e-003	0.0155	0.0000	154.3643	154.3643	9.5100e-003	0.0000	154.6021
Worker	0.0424	0.0323	0.3265	9.0000e-004	0.0885	6.3000e-004	0.0891	0.0235	5.8000e-004	0.0241	0.0000	81.1856	81.1856	2.3200e-003	0.0000	81.2434
Total	0.0685	0.7734	0.4904	2.5100e-003	0.1266	5.3700e-003	0.1319	0.0346	5.1100e-003	0.0397	0.0000	235.5498	235.5498	0.0118	0.0000	235.8455

3.6 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	4.6560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380
Total	4.6600	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380

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	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476
Total	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476

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	0.9930	6.3947	10.9142	0.0369	2.7227	0.0447	2.7674	0.7319	0.0422	0.7741	0.0000	3,395.8981	3,395.8981	0.1555	0.0000	3,399.7856
Unmitigated	0.9930	6.3947	10.9142	0.0369	2.7227	0.0447	2.7674	0.7319	0.0422	0.7741	0.0000	3,395.8981	3,395.8981	0.1555	0.0000	3,399.7856

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	3,782.11	842.42	359.78	6,866,360	6,866,360
Strip Mall	292.81	277.78	134.94	412,898	412,898
Total	4,074.92	1,120.19	494.73	7,279,259	7,279,259

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
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
General Office Building	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
Strip Mall	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759

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	3,387.5585	3,387.5585	0.2287	0.0473	3,407.3744
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,387.5585	3,387.5585	0.2287	0.0473	3,407.3744
NaturalGas Mitigated	0.0779	0.7085	0.5951	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	771.2551	771.2551	0.0148	0.0141	775.8383
NaturalGas Unmitigated	0.0779	0.7085	0.5951	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	771.2551	771.2551	0.0148	0.0141	775.8383

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.44352e+007	0.0778	0.7076	0.5944	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	770.3192	770.3192	0.0148	0.0141	774.8968
Strip Mall	17538.2	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9359	0.9359	2.0000e-005	2.0000e-005	0.9415
Total		0.0779	0.7085	0.5951	4.2600e-003		0.0539	0.0539		0.0539	0.0539	0.0000	771.2551	771.2551	0.0148	0.0141	775.8383

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.31514e+006	256.2728	0.0173	3.5800e-003	257.7719
General Office Building	1.59885e+007	3,115.5620	0.2103	0.0435	3,133.7869
Strip Mall	80690.5	15.7236	1.0600e-003	2.2000e-004	15.8156
Total		3,387.5585	0.2287	0.0473	3,407.3744

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	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Unmitigated	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234

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	0.4656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.4689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0700e-003	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Total	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	280.1031	5.1155	0.1236	444.8340
Unmitigated	280.1031	5.1155	0.1236	444.8340

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	155.965 / 95.5914	279.1261	5.0976	0.1232	443.2824
Strip Mall	0.545914 / 0.334593	0.9770	0.0178	4.3000e-004	1.5516
Total		280.1031	5.1155	0.1236	444.8340

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	167.2300	9.8830	0.0000	414.3054
Unmitigated	167.2300	9.8830	0.0000	414.3054

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	816.09	165.6589	9.7902	0.0000	410.4129
Strip Mall	7.74	1.5712	0.0929	0.0000	3.8925
Total		167.2300	9.8830	0.0000	414.3054

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1341	0.73	Diesel

10.1 Stationary Sources

Unmitigated/Mitigated

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

Kaiser Plaza, Alternative A, Criteria and Operational - Alameda County, Annual

Kaiser Plaza, Scheme 2, Criteria and Operational Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	438.39	1000sqft	1.02	438,389.00	0
Enclosed Parking with Elevator	181.00	Space	0.00	121,480.00	0
Strip Mall	7.40	1000sqft	0.00	7,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	429.6	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Project Duration: 15 to 18 months

Off-road Equipment -

Off-road Equipment - Using default equipment usage for higher acreage

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip length for health risk assessment
 Vendor Trips (Building Construction) = $93 + (26000) / 16 * 2 / 336 = 103$

Demolition - 655 tons of asphalt pavement

Grading - Using higher default acreage

Vehicle Trips - Using Project Trip Generation Rates

Energy Use - Default Values Used

Construction Off-road Equipment Mitigation - Best Management Practices

Stationary Sources - Emergency Generators and Fire Pumps -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	10.00	17.00
tblConstructionPhase	NumDays	200.00	336.00
tblConstructionPhase	NumDays	20.00	34.00
tblConstructionPhase	NumDays	4.00	7.00
tblConstructionPhase	NumDays	2.00	4.00
tblFleetMix	FleetMixLandUseSubType	General Office Building	Enclosed Parking with Elevator
tblFleetMix	FleetMixLandUseSubType	Enclosed Parking with Elevator	General Office Building
tblGrading	AcresOfGrading	2.63	7.50
tblGrading	AcresOfGrading	2.00	12.50
tblLandUse	BuildingSpaceSquareFeet	438,390.00	438,389.00
tblLandUse	BuildingSpaceSquareFeet	72,400.00	121,480.00
tblLandUse	BuildingSpaceSquareFeet	7,400.00	7,396.00
tblLandUse	LandUseSquareFeet	438,390.00	438,389.00
tblLandUse	LandUseSquareFeet	72,400.00	121,480.00
tblLandUse	LandUseSquareFeet	7,400.00	7,396.00
tblLandUse	LotAcreage	10.06	1.02
tblLandUse	LotAcreage	1.63	0.00
tblLandUse	LotAcreage	0.17	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	429.6
tblProjectCharacteristics	OperationalYear	2018	2019
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,006.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	93.00	103.00
tblVehicleTrips	ST_TR	2.46	1.13
tblVehicleTrips	ST_TR	42.04	34.87
tblVehicleTrips	SU_TR	1.05	0.48
tblVehicleTrips	SU_TR	20.43	16.95
tblVehicleTrips	WD_TR	11.03	5.06
tblVehicleTrips	WD_TR	44.32	36.76

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					
2017	0.4572	4.2144	2.8245	6.8100e-003	0.2378	0.1998	0.4376	0.0696	0.1876	0.2572	0.0000	626.2547	626.2547	0.0843	0.0000	628.3610

2018	2.6801	3.1080	2.2370	5.9100e-003	0.1828	0.1325	0.3153	0.0499	0.1248	0.1747	0.0000	541.6981	541.6981	0.0659	0.0000	543.3449
Maximum	2.6801	4.2144	2.8245	6.8100e-003	0.2378	0.1998	0.4376	0.0696	0.1876	0.2572	0.0000	626.2547	626.2547	0.0843	0.0000	628.3610

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2017	5-31-2017	1.1137	1.1137
2	6-1-2017	8-31-2017	1.5250	1.5250
3	9-1-2017	11-30-2017	1.5182	1.5182
4	12-1-2017	2-28-2018	1.4053	1.4053
5	3-1-2018	5-31-2018	1.3740	1.3740
6	6-1-2018	8-31-2018	2.7261	2.7261
7	9-1-2018	9-30-2018	0.6976	0.6976
		Highest	2.7261	2.7261

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	1.9844	5.0000e-005	5.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Energy	0.0390	0.3544	0.2977	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	2,117.5631	2,117.5631	0.1243	0.0313	2,129.9859
Mobile	0.6660	4.1641	7.2877	0.0229	1.6502	0.0320	1.6821	0.4437	0.0302	0.4739	0.0000	2,103.9888	2,103.9888	0.1020	0.0000	2,106.5394
Stationary	0.0413	0.1846	0.1052	2.0000e-004		6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Waste						0.0000	0.0000		0.0000	0.0000	84.3367	0.0000	84.3367	4.9842	0.0000	208.9405
Water						0.0000	0.0000		0.0000	0.0000	24.8933	115.5331	140.4263	2.5646	0.0620	223.0122

Total	2.7306	4.7031	7.6965	0.0252	1.6502	0.0650	1.7152	0.4437	0.0633	0.5069	109.2299	4,356.2502	4,465.4802	7.7778	0.0932	4,687.7111

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	3/1/2017	4/17/2017	5	34	
2	Site Preparation	Site Preparation	4/18/2017	4/21/2017	5	4	
3	Grading	Grading	4/22/2017	5/2/2017	5	7	
4	Building Construction	Building Construction	5/3/2017	8/15/2018	5	336	
5	Architectural Coating	Architectural Coating	8/16/2018	9/7/2018	5	17	

Acres of Grading (Site Preparation Phase): 12.5

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 668,678; Non-Residential Outdoor: 222,893; Striped Parking Area:

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29

Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	65.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	194.00	103.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	39.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0470	0.4549	0.2645	4.1000e-004		0.0280	0.0280		0.0262	0.0262	0.0000	37.3435	37.3435	9.4500e-003	0.0000	37.5797

Total	0.0470	0.4549	0.2645	4.1000e-004	7.0100e-003	0.0280	0.0350	1.0600e-003	0.0262	0.0273	0.0000	37.3435	37.3435	9.4500e-003	0.0000	37.5797

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	3.6000e-004	0.0115	1.9000e-003	3.0000e-005	5.5000e-004	6.0000e-005	6.1000e-004	1.5000e-004	6.0000e-005	2.1000e-004	0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0400e-003	8.4000e-004	8.2900e-003	2.0000e-005	1.7500e-003	1.0000e-005	1.7600e-003	4.6000e-004	1.0000e-005	4.8000e-004	0.0000	1.6969	1.6969	6.0000e-005	0.0000	1.6984
Total	1.4000e-003	0.0123	0.0102	5.0000e-005	2.3000e-003	7.0000e-005	2.3700e-003	6.1000e-004	7.0000e-005	6.9000e-004	0.0000	4.2568	4.2568	2.0000e-004	0.0000	4.2618

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0172	0.0000	0.0172	6.5100e-003	0.0000	6.5100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0444	0.0168	3.0000e-005		2.0900e-003	2.0900e-003		1.9200e-003	1.9200e-003	0.0000	3.2010	3.2010	9.8000e-004	0.0000	3.2255
Total	3.8600e-003	0.0444	0.0168	3.0000e-005	0.0172	2.0900e-003	0.0193	6.5100e-003	1.9200e-003	8.4300e-003	0.0000	3.2010	3.2010	9.8000e-004	0.0000	3.2255

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	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1229	0.1229	0.0000	0.0000	0.1230
Total	8.0000e-005	6.0000e-005	6.0000e-004	0.0000	1.3000e-004	0.0000	1.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.1229	0.1229	0.0000	0.0000	0.1230

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0198	0.0000	0.0198	9.1200e-003	0.0000	9.1200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.6100e-003	0.0640	0.0246	5.0000e-005		3.0600e-003	3.0600e-003		2.8100e-003	2.8100e-003	0.0000	4.5878	4.5878	1.4100e-003	0.0000	4.6229
Total	5.6100e-003	0.0640	0.0246	5.0000e-005	0.0198	3.0600e-003	0.0228	9.1200e-003	2.8100e-003	0.0119	0.0000	4.5878	4.5878	1.4100e-003	0.0000	4.6229

Unmitigated Construction Off-Site

Vendor	0.0505	1.2781	0.3045	2.5100e-003	0.0585	0.0109	0.0694	0.0169	0.0104	0.0273	0.0000	239.6533	239.6533	0.0165	0.0000	240.0648
Worker	0.0792	0.0634	0.6295	1.4300e-003	0.1327	1.0100e-003	0.1337	0.0353	9.3000e-004	0.0362	0.0000	128.8482	128.8482	4.5000e-003	0.0000	128.9606
Total	0.1297	1.3416	0.9340	3.9400e-003	0.1912	0.0119	0.2031	0.0522	0.0113	0.0635	0.0000	368.5015	368.5015	0.0210	0.0000	369.0254

3.5 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	0.2184	1.9063	1.4328	2.1900e-003		0.1222	0.1222		0.1149	0.1149	0.0000	193.7803	193.7803	0.0475	0.0000	194.9672
Total	0.2184	1.9063	1.4328	2.1900e-003		0.1222	0.1222		0.1149	0.1149	0.0000	193.7803	193.7803	0.0475	0.0000	194.9672

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	0.0417	1.1316	0.2584	2.3500e-003	0.0551	8.0700e-003	0.0632	0.0160	7.7200e-003	0.0237	0.0000	225.1407	225.1407	0.0144	0.0000	225.5009
Worker	0.0663	0.0520	0.5191	1.3100e-003	0.1250	9.1000e-004	0.1259	0.0333	8.4000e-004	0.0341	0.0000	118.1300	118.1300	3.7100e-003	0.0000	118.2227
Total	0.1080	1.1836	0.7776	3.6600e-003	0.1801	8.9800e-003	0.1891	0.0492	8.5600e-003	0.0578	0.0000	343.2708	343.2708	0.0181	0.0000	343.7236

3.6 Architectural Coating - 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					
Archit. Coating	2.3498					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5400e-003	0.0171	0.0158	3.0000e-005		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	2.1703	2.1703	2.1000e-004	0.0000	2.1754
Total	2.3524	0.0171	0.0158	3.0000e-005		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	2.1703	2.1703	2.1000e-004	0.0000	2.1754

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3900e-003	1.0900e-003	0.0109	3.0000e-005	2.6200e-003	2.0000e-005	2.6400e-003	7.0000e-004	2.0000e-005	7.1000e-004	0.0000	2.4768	2.4768	8.0000e-005	0.0000	2.4787
Total	1.3900e-003	1.0900e-003	0.0109	3.0000e-005	2.6200e-003	2.0000e-005	2.6400e-003	7.0000e-004	2.0000e-005	7.1000e-004	0.0000	2.4768	2.4768	8.0000e-005	0.0000	2.4787

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	0.6660	4.1641	7.2877	0.0229	1.6502	0.0320	1.6821	0.4437	0.0302	0.4739	0.0000	2,103.9888	2,103.9888	0.1020	0.0000	2,106.5394
Unmitigated	0.6660	4.1641	7.2877	0.0229	1.6502	0.0320	1.6821	0.4437	0.0302	0.4739	0.0000	2,103.9888	2,103.9888	0.1020	0.0000	2,106.5394

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	2,218.25	495.38	210.43	4,027,442	4,027,442
Strip Mall	272.02	258.04	125.43	383,598	383,598
Total	2,490.28	753.42	335.86	4,411,039	4,411,039

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
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking with Elevator	0.556416	0.041967	0.190895	0.111485	0.018156	0.005234	0.022193	0.041963	0.002079	0.002948	0.005586	0.000300	0.000779
General Office Building	0.556416	0.041967	0.190895	0.111485	0.018156	0.005234	0.022193	0.041963	0.002079	0.002948	0.005586	0.000300	0.000779
Strip Mall	0.556416	0.041967	0.190895	0.111485	0.018156	0.005234	0.022193	0.041963	0.002079	0.002948	0.005586	0.000300	0.000779

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	1,731.7907	1,731.7907	0.1169	0.0242	1,741.9210
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,731.7907	1,731.7907	0.1169	0.0242	1,741.9210
NaturalGas Mitigated	0.0390	0.3544	0.2977	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.7724	385.7724	7.3900e-003	7.0700e-003	388.0648
NaturalGas Unmitigated	0.0390	0.3544	0.2977	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.7724	385.7724	7.3900e-003	7.0700e-003	388.0648

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	7.2115e+006	0.0389	0.3535	0.2969	2.1200e-003		0.0269	0.0269		0.0269	0.0269	0.0000	384.8331	384.8331	7.3800e-003	7.0600e-003	387.1199
Strip Mall	17602.5	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9393	0.9393	2.0000e-005	2.0000e-005	0.9449

Total		0.0390	0.3544	0.2977	2.1300e-003		0.0269	0.0269		0.0269	0.0269	0.0000	385.7724	385.7724	7.4000e-003	7.0800e-003	388.0648

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	818775	159.5492	0.0108	2.2300e-003	160.4825
General Office Building	7.98745e+006	1,556.4603	0.1051	0.0217	1,565.5650
Strip Mall	80986.2	15.7812	1.0700e-003	2.2000e-004	15.8736
Total		1,731.7907	0.1169	0.0242	1,741.9210

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	1.9844	5.0000e-005	5.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Unmitigated	1.9844	5.0000e-005	5.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120

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	0.2350					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.7489					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	5.5000e-004	5.0000e-005	5.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Total	1.9844	5.0000e-005	5.8200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	140.4263	2.5646	0.0620	223.0122
Unmitigated	140.4263	2.5646	0.0620	223.0122

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	77.9167 / 47.7554	139.4454	2.5467	0.0616	221.4543
Strip Mall	0.548137 / 0.335955	0.9810	0.0179	4.3000e-004	1.5579
Total		140.4263	2.5646	0.0620	223.0122

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	84.3367	4.9842	0.0000	208.9405
Unmitigated	84.3367	4.9842	0.0000	208.9405

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	407.7	82.7594	4.8909	0.0000	205.0330
Strip Mall	7.77	1.5772	0.0932	0.0000	3.9075
Total		84.3367	4.9842	0.0000	208.9405

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1006	0.73	Diesel

10.1 Stationary Sources

Unmitigated/Mitigated

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

Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750,0000 HP)	0.0413	0.1846	0.1052	2.0000e-004		6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Total	0.0413	0.1846	0.1052	2.0000e-004		6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212

Attachment F: Wind Study

KAISER PLAZA

OAKLAND, CA

PEDESTRIAN WIND STUDY

RWDI #1602304

August 29, 2017

SUBMITTED TO

Sharon Wright

Lamphier-Gregory

1944 Embarcadero

Oakland, CA 94606

T: (510) 535-6671

swright@lamphier-gregory.com

SUBMITTED BY

Raisa Lalui M.Eng

Project Coordinator

Raisa.Lalui@rwdi.com

Jon Barratt, P.Eng.

Project Manager

Jon.Barratt@rwdi.com

Rowan Williams Davies & Irwin Inc.

280 – 1385 West 8th Avenue

Vancouver, BC V6H 3V9

T: 604.730.5688



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1 INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Lamphier-Gregory to consult on the pedestrian wind conditions for the proposed Kaiser Plaza development in Oakland, CA. The purpose of the study was to assess the wind environment around the development in terms of pedestrian wind comfort and hazard relative to wind metrics specified in the City of Oakland Significant Wind Impact Criterion. This objective was achieved through wind tunnel testing of a 1:300 scale model of the proposed development for the following configurations:

A – Existing:	all existing buildings on-site and in the surroundings;
B – Existing + Cumulative:	existing site conditions with existing and cumulative surrounding buildings;
C – Low Boy:	proposed “Low Boy” design of the Kaiser Plaza project present with existing surrounding buildings;
D – Low Boy + Cumulative:	proposed “Low Boy” design of the Kaiser Plaza project present with existing and cumulative surrounding buildings;
E – Tall Boy:	proposed “Tall Boy” design of the Kaiser Plaza project present with existing and surrounding buildings;
F – Tall Boy + Cumulative:	proposed “Tall Boy” design of the Kaiser Plaza project present with existing and cumulative surrounding buildings.

The photographs in Figures 1a through 1f show the test model in one of RWDI's boundary-layer wind tunnels. Two possible design options for the proposed development were tested: “Low Boy” and “Tall Boy”. Low Boy is approx. 300ft tall and Tall Boy is approx. 470 ft tall. The test models were constructed using the design information and drawings listed in Appendix A. This report summarizes the methodology of wind tunnel studies for pedestrian wind conditions, describes the wind comfort and wind hazard criteria associated with wind force, as used in the current study, and presents the local wind conditions and their effects on pedestrians.

The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site, and reviewed by Lamphier-Gregory along with the list of cumulative buildings.

2 PRINCIPAL RESULTS

The wind conditions around the proposed Kaiser Plaza project are discussed in detail in Section 5 of this report and may be summarized as follows:

- Wind speeds at all locations met the hazard criterion in all six configurations.



- When compared to the existing conditions, the 90th percentile average wind speed around the site is reduced with the addition of the Low Boy and remains the same as existing with the addition of the Tall Boy.
- The addition of the cumulative buildings generally reduced the 90th percentile average wind speeds in the existing and Low Boy configurations. Wind speeds remained the same for the Tall Boy configuration with the addition of the cumulative buildings.
- The comfort conditions of the area remain similar to the existing conditions for all subsequent configurations.

3 METHODOLOGY

3.1 Wind Tunnel Testing

As shown in Figures 1a through 1f, the wind tunnel model included the project site and all relevant surrounding buildings and topography within a 1200 ft radius of the study site. The mean speed profile and turbulence of the natural wind approaching the modelled area were simulated in RWDI's boundary-layer wind tunnel. The model was instrumented with 54 wind speed sensors to measure mean and gust wind speeds at a full-scale height of approximately 5 feet. These measurements were recorded for 36 equally incremented wind directions.

3.2 Local Climate

Wind statistics recorded at the Metropolitan Oakland International Airport between 1984 and 2014 were analyzed for annual wind conditions. Figure 2 graphically depicts the directional distributions of annual wind frequencies and speeds. Winds are frequent from the west-southwest through northwest directions throughout the year, as indicated by the wind rose. Strong winds of a mean speed greater than 20 mph measured at the airport (at an anemometer height of 33 feet) occur 3.5% of the time annually.

Wind statistics from the Metropolitan Oakland International Airport were combined with the wind tunnel data to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the City of Oakland Significant Wind Impact Criterion.

3.3 Planning Code Requirements

A wind analysis only needs to be done if the height of the project is 100 feet or greater (measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. As the proposed project (300 and 470 feet tall) exceeds 100 feet in height and is located in Downtown, it is subject to the thresholds of significance.



For the purposes of this study, the City of Oakland considers a significant wind impact to occur if a project were to "Create winds exceeding 36 mph for more than one hour during daylight hours during the year". The Planning Code defines these wind speeds in terms of equivalent wind speeds, and average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. Equivalent wind speeds were calculated per the specifications in the City of Oakland Significant Wind Impact Criterion, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15% according to the following formula:

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

where EWS = equivalent wind speed
 V_m = mean pedestrian-level wind speed
 TI = turbulence intensity

3.4 Pedestrian Comfort

Although not applicable towards the Significant Wind Impacts Criterion defined by the City of Oakland, wind comfort speeds have been calculated for informational purposes. The comfort criterion states that wind speeds do not exceed 11 mph for more than 10% of the time during the year, when calculated for daylight hours, in substantial pedestrian use areas. A lower wind speed threshold of 7 mph may be considered for public seating areas where calmer wind conditions are ideal.

3.5 Cumulative Buildings

Buildings in the surrounding area that are under construction and/or have been approved were modeled in accordance with the information received on January 7th, 2017 from the project team and the City of Oakland Planning Department. Buildings which have been approved, and pending future buildings, were included in the existing plus cumulative, Low Boy plus cumulative and Tall Boy plus cumulative configurations only. These sites are shown in Image 1 and listed in the table below the image.

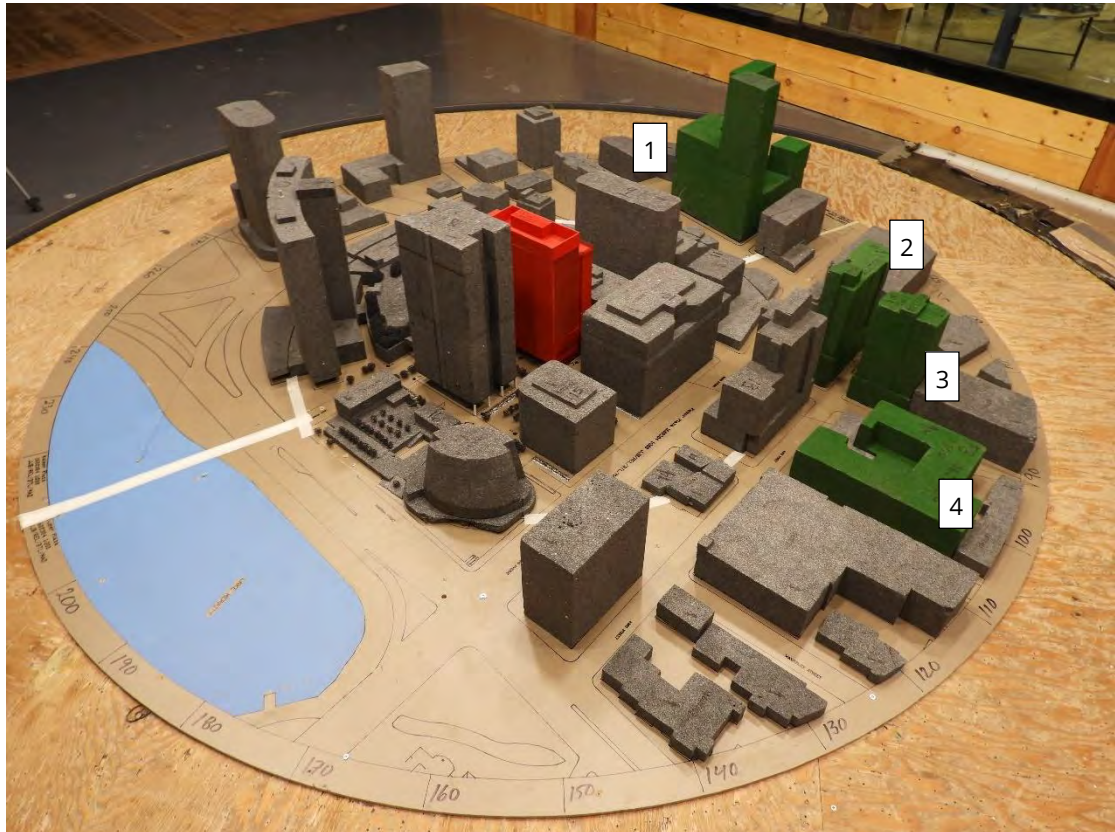


Image 1: In-construction and Cumulative Buildings (Numbered 1 - 4)

CUMULATIVE	
1	2100 Telegraph Avenue
2	2270 Broadway
3	2305 Webster Street
4	2315 Valdez

4 TEST RESULTS

This section presents the results of the wind tunnel measurements analyzed in terms of equivalent wind speeds as defined by the equation in Section 3.3. The text in the report simply refers to the data as wind speeds.

Table 1, located in the tables section of this report, presents the wind comfort results for the six configurations tested. For each measurement point, the measured 10% exceeded (90th percentile) wind speed and the percentage of time that the wind speed exceeds 11 mph are shown for all areas. A letter "e" in the last column of each configuration indicates a wind comfort exceedance.



Table 2 presents the wind hazard results, and lists the predicted wind speed to be exceeded one hour per year. The predicted number of hours per year that the City of Oakland Significant Wind Impact Criterion (one-minute wind speed of 36 mph) is exceeded is also provided. A letter “e” in the last column of each configuration indicates a wind hazard exceedance.

4.1 Wind Comfort Conditions

Although the analysis of wind comfort conditions is not required by California Environmental Quality Act (CEQA), this section describes the wind comfort conditions on and around the project site and can be used as a reference for further understanding of the wind conditions.

For the Existing Configuration, the wind speeds around the project site are predicted to be generally moderate with 90th percentile wind speeds averaging 10.8 mph for all 54 measurement locations. The 11 mph comfort criterion is exceeded at 21 of the 54 test locations (locations shown in red in Figure 3a), for 10.9% of the time (Table 1).

With the addition of the cumulative buildings to the existing site, wind conditions are expected to improve with the average 90th percentile reducing to 10.1mph, and only 14 locations exceeding the comfort criterion for 8.3% of the time (Figure 3b and Table 1).

With the addition of the Low Boy proposed building to the site, wind conditions are expected to improve compared to the existing configuration, with the average 90th percentile wind speeds to drop to 10.5 mph and the number of locations where the 11mph comfort criterion is exceeded are reduced to 14 for 9.3% of the time (Figure 3c and Table 1).

The addition of the cumulative buildings to the Low Boy configuration is expected to improve conditions further, with the average 90th percentile reducing to 9.7mph and the number of locations where the comfort criteria is exceeded deduces to 9 for 7% of the time (Figure 3d and Table 1).

With the addition of the Tall Boy proposed building to the site, conditions are mostly unchanged compared to the existing configuration, with the average 90th percentile wind speeds at 11mph and the number of locations the 11mph comfort criterion is exceeded is increased to 25 for 11.7% of the time (Figure 3e and Table 1).

The addition of the cumulative buildings to the Tall Boy configuration improves the wind comfort conditions, with the average 90th percentile wind speed at 10.4mph, and total of 15 locations exceed the comfort criteria for 9% of the time (Figure 3f and Table 1).

Overall, as indicated in Table 1, with the Proposed Project in place, wind speeds are predicted to be similar to the Existing Configuration. There is a further reduction in wind speed with the addition of the cumulative buildings.



4.2 Wind Hazard Conditions

Of the 54 locations tested for the Existing Configuration, none currently exceed the hazard criterion (presented in Figure 4a and Table 2). The number of locations exceeding the hazard criterion is expected to remain at zero for all other tested configurations (Existing plus Cumulative, Low Boy, Low Boy plus Cumulative, Tall Boy and Tall Boy plus Cumulative) (Figures 4b through 4f and Table 2). Therefore, the project does not create a significant wind impact (i.e., there are no locations with wind speeds exceeding 36 mph for more than one hour during daylight hours during the year).

5 APPLICABILITY OF RESULTS

The wind conditions presented in this report pertain to the proposed Kaiser Plaza development as detailed in the architectural design drawings listed in Appendix A. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

6 REFERENCES

1. ASCE Task Committee on Outdoor Human Comfort (2004). *Outdoor Human Comfort and Its Assessment*, 68 pages, American Society of Civil Engineers, Reston, Virginia, USA.
2. Williams, C.J., Hunter, M.A. and Waechter, W.F. (1990). "Criteria for Assessing the Pedestrian Wind Environment," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.36, pp.811-815.
3. Williams, C.J., Soligo M.J. and Cote, J. (1992). "A Discussion of the Components for a Comprehensive Pedestrian Level Comfort Criteria," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.41-44, pp.2389-2390.
4. Soligo, M.J., Irwin, P.A., and Williams, C.J. (1993). "Pedestrian Comfort Including Wind and Thermal Effects," *Third Asia-Pacific Symposium on Wind Engineering*, Hong Kong.
5. Soligo, M.J., Irwin, P.A., Williams, C.J. and Schuyler, G.D. (1998). "A Comprehensive Assessment of Pedestrian Comfort Including Thermal Effects," *Journal of Wind Engineering and Industrial Aerodynamics*, Vol.77&78, pp.753-766.
6. Williams, C.J., Wu, H., Waechter, W.F. and Baker, H.A. (1999). "Experiences with Remedial Solutions to Control Pedestrian Wind Problems," *Tenth International Conference on Wind Engineering*, Copenhagen, Denmark.
7. Lawson, T.V. (1973). "Wind Environment of Buildings: A Logical Approach to the Establishment of Criteria", *Report No. TVL 7321*, Department of Aeronautic Engineering, University of Bristol, Bristol, England.
8. Durgin, F. H. (1997). "Pedestrian Level Wind Criteria Using the Equivalent average", *Journal of Wind Engineering and Industrial Aerodynamics*, Vol. 66, pp. 215-226.



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FIGURES



Wind Tunnel Study Model Existing

Kaiser Plaza – Oakland, CA

Figure No. 1a

Project #1602304

Date: August 29, 2017





Wind Tunnel Study Model Existing + Cumulative

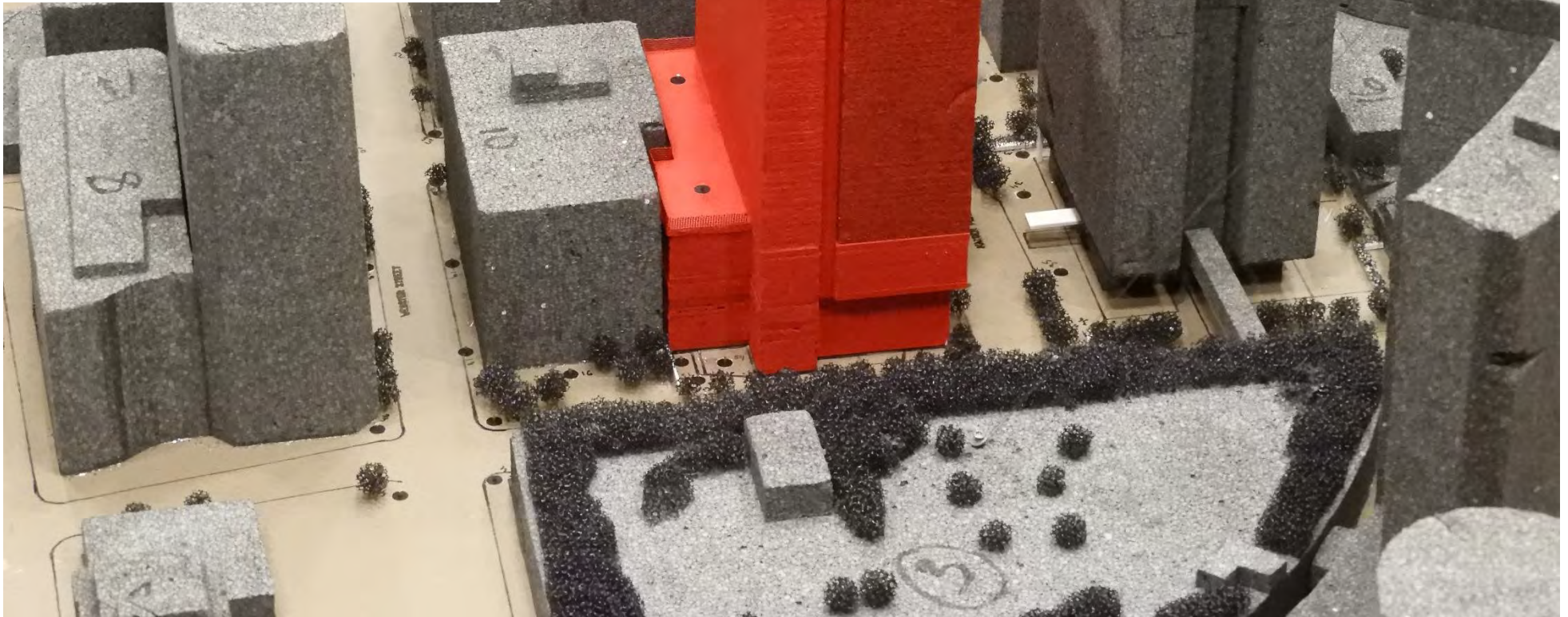
Kaiser Plaza – Oakland, CA

Figure No. 1b

Project #1602304

Date: August 29, 2017





Wind Tunnel Study Model
Low Boy

Kaiser Plaza – Oakland, CA

Figure No. 1c

Project #1602304

Date: August 29, 2017





Wind Tunnel Study Model Low Boy + Cumulative

Kaiser Plaza - Oakland, CA

Figure No. 1d

Project #1602304

Date: August 29, 2017





Wind Tunnel Study Model Tall Boy

Kaiser Plaza – Oakland, CA

Figure No. 1e

Project #1602304

Date: August 29, 2017





Wind Tunnel Study Model Tall Boy + Cumulative

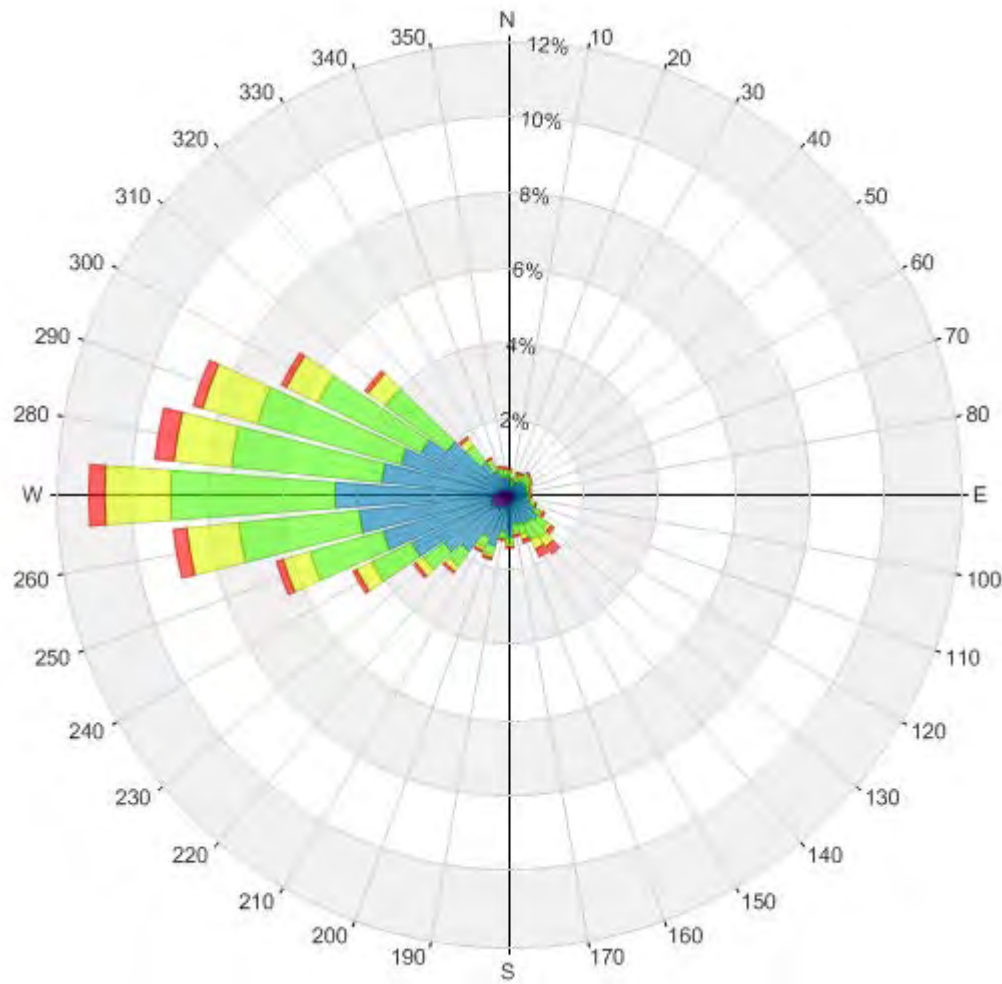
Kaiser Plaza – Oakland, CA

Figure No. 1f

Project #1602304

Date: August 29, 2017





Annual Winds

Wind Speed (mph)	Probability (%)
Calm	6.6
1-5	9.2
6-10	38.9
11-15	30.4
16-20	11.4
>20	3.5

**Directional Distribution of Winds Approaching
Metropolitan Oakland International Airport (1984 - 2014)**

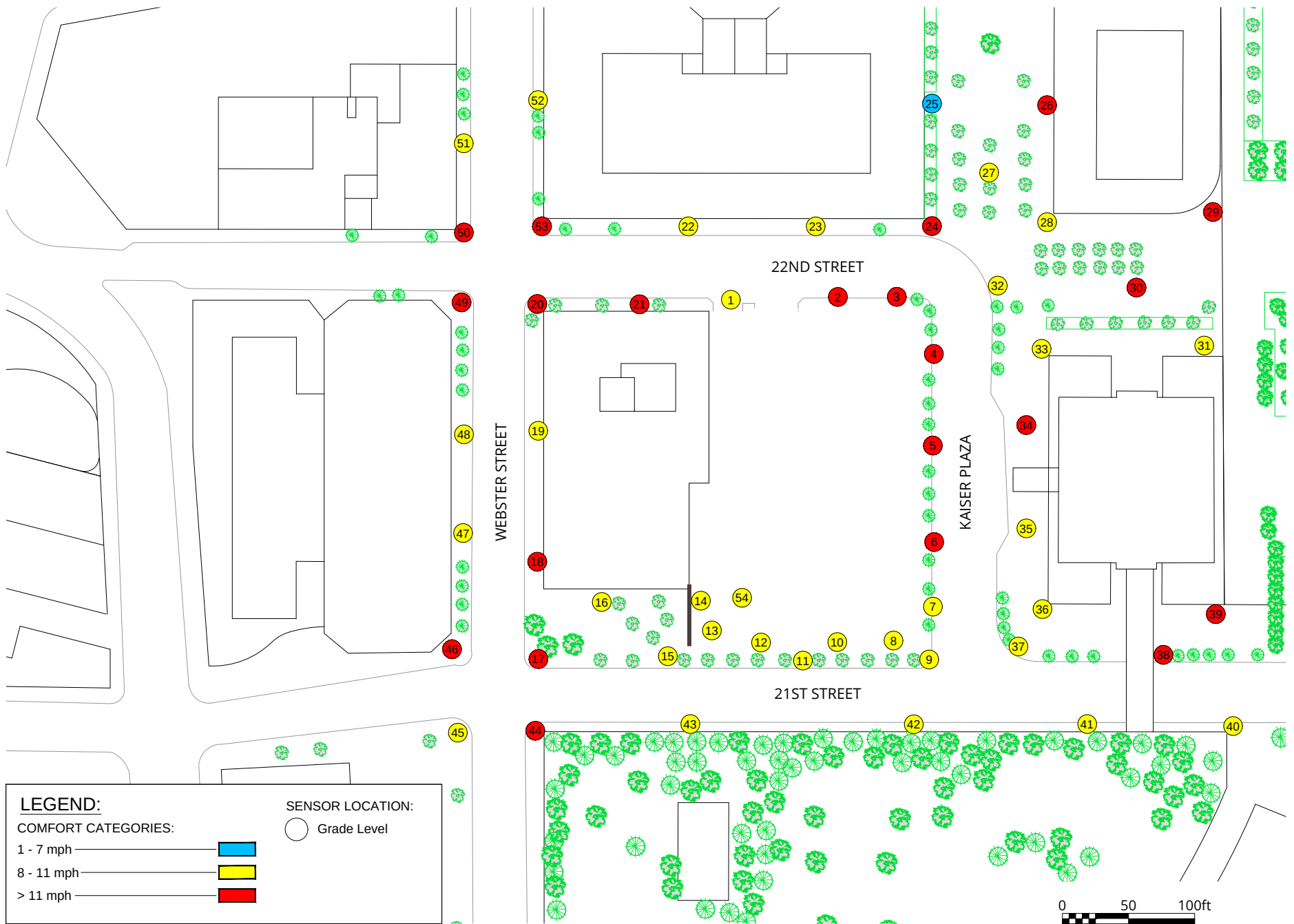
Kaiser Plaza – Oakland, CA

Project #1602304

Figure No. 2

Date: August 24, 2017





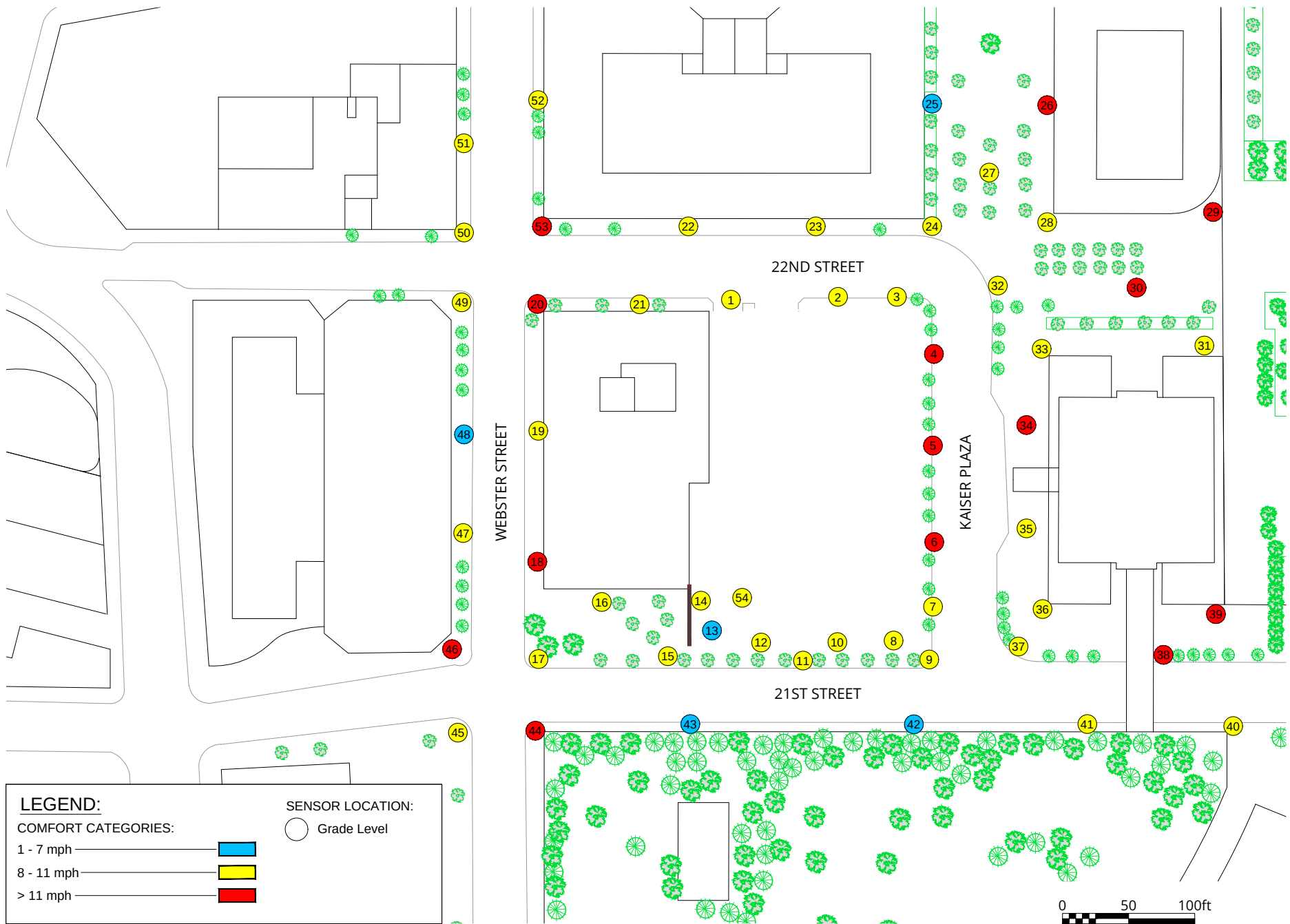
Pedestrian Wind Comfort Conditions - Existing Annual (January to December)

Kaiser Plaza - Oakland, CA

True North
Project #1602304

Drawn by: ck Figure: 3a
Approx. Scale: 1"=100'
Date Revised: Aug. 23, 2017





Pedestrian Wind Comfort Conditions - Existing + Cumulative **Annual (January to December)**

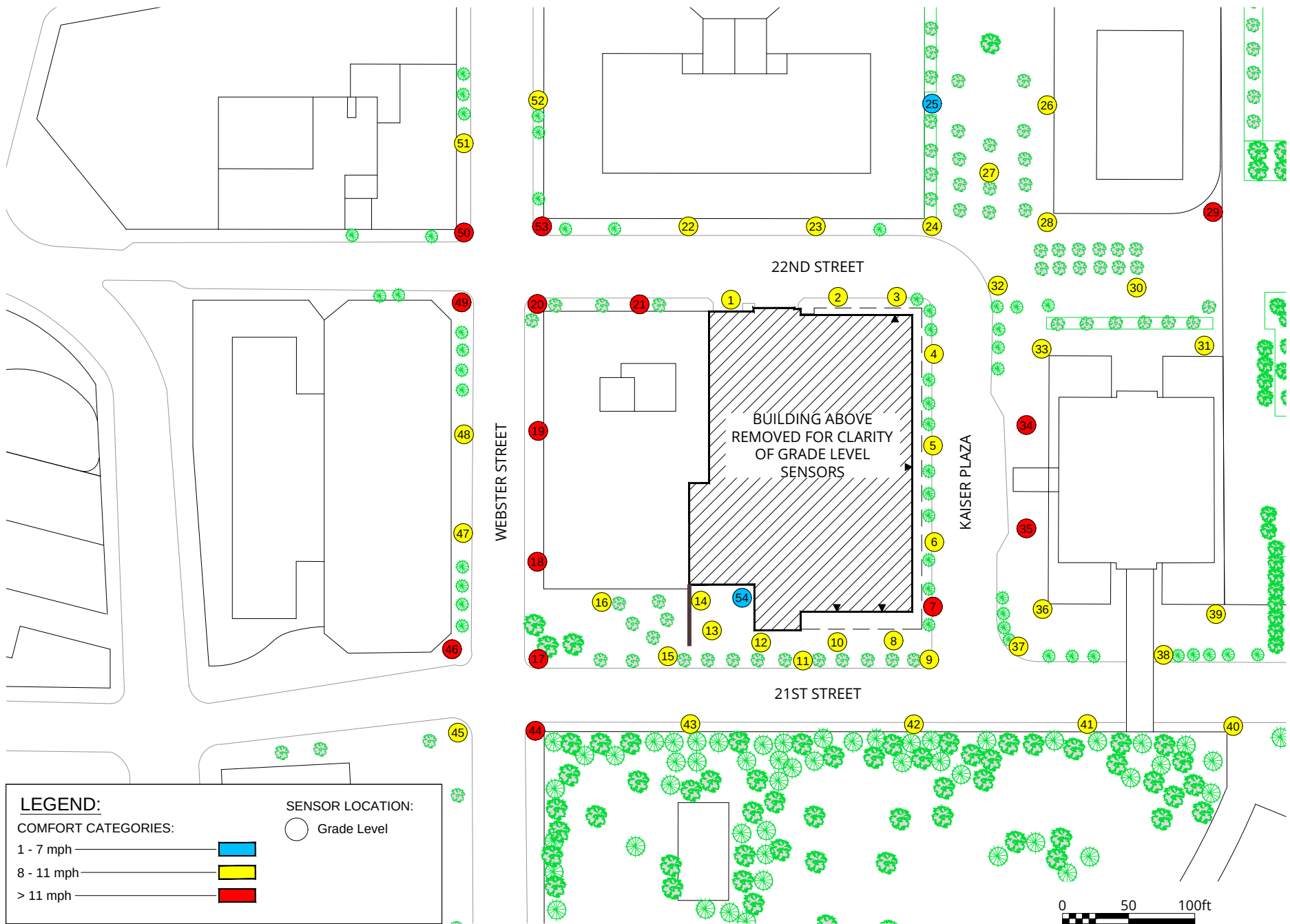
Kaiser Plaza - Oakland, CA

True North

 Project #1602304

Drawn by: ck	Figure: 3b
Approx. Scale: 1"=100'	
Date Revised: Aug. 23, 2017	





Pedestrian Wind Comfort Conditions - Proposed - Low Boy **Annual (January to December)**

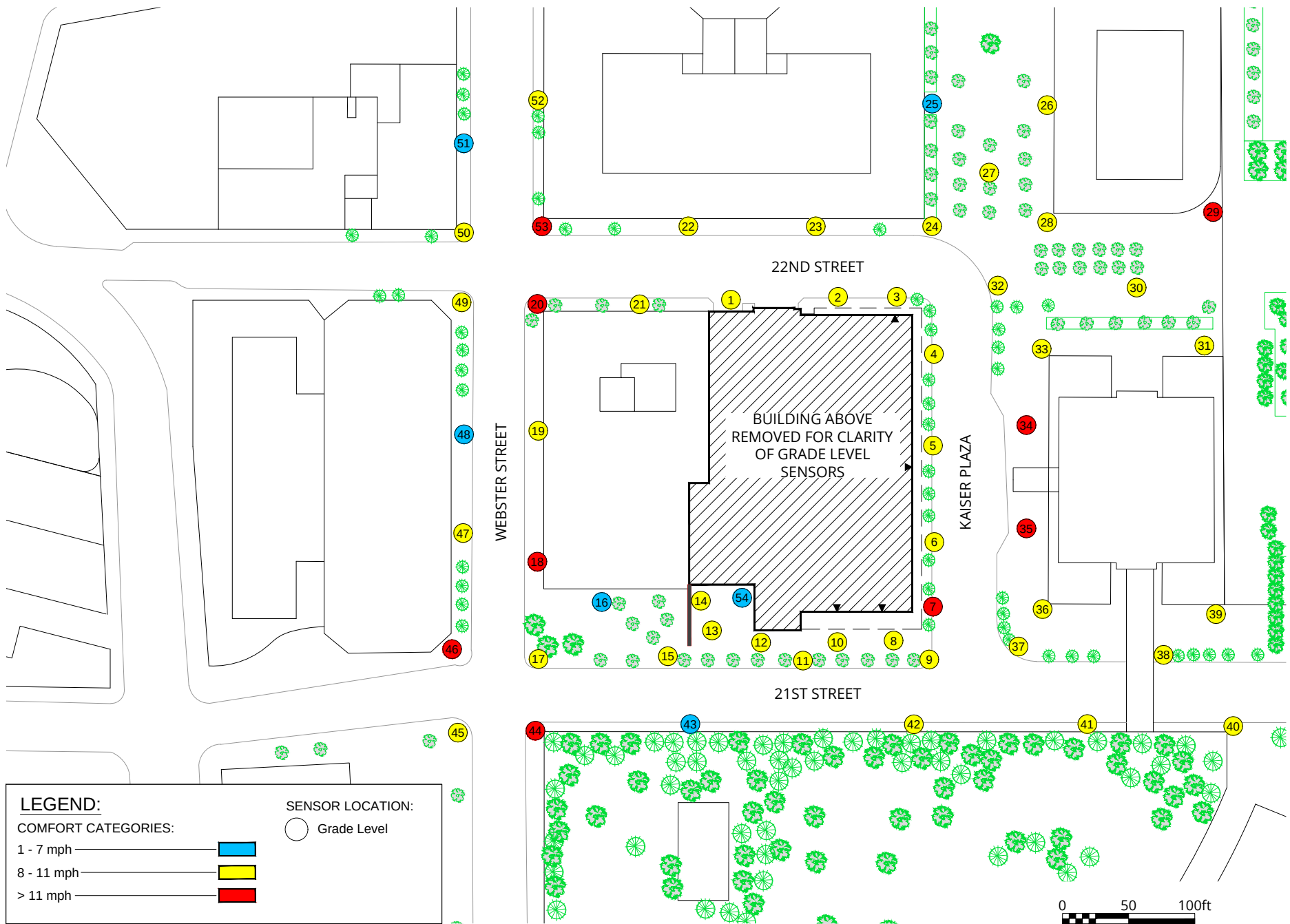
Kaiser Plaza - Oakland, CA

True North

 Project #1602304

Drawn by: ck	Figure: 3c
Approx. Scale: 1"=100'	
Date Revised: Aug. 23, 2017	





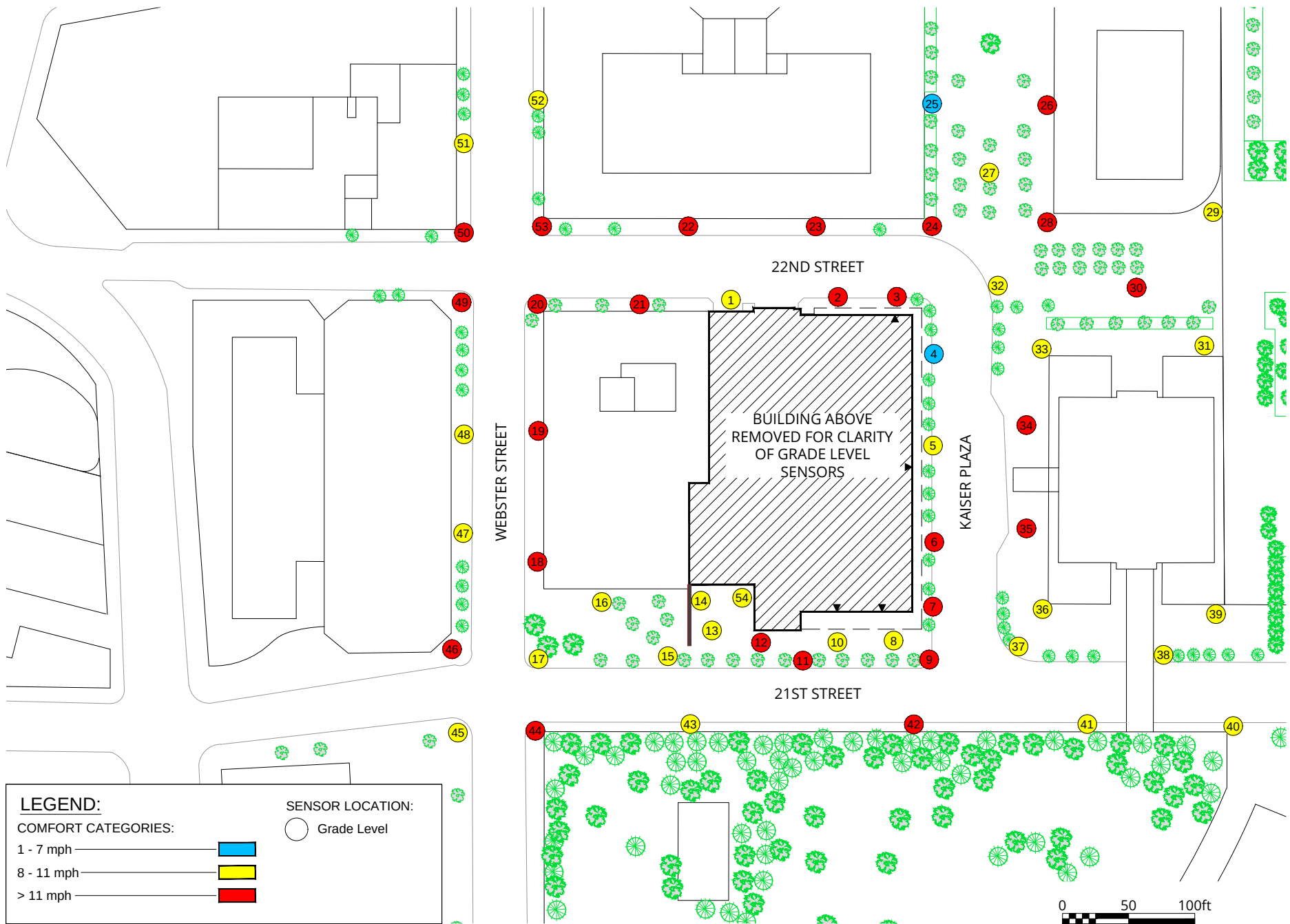
Pedestrian Wind Comfort Conditions - Low Boy + Cumulative Annual (January to December)

Kaiser Plaza - Oakland, CA

True North
Project #1602304

Drawn by: ck Figure: 3d
Approx. Scale: 1"=100'
Date Revised: Aug. 23, 2017





Pedestrian Wind Comfort Conditions - Tall Boy Annual (January to December)

Kaiser Plaza - Oakland, CA



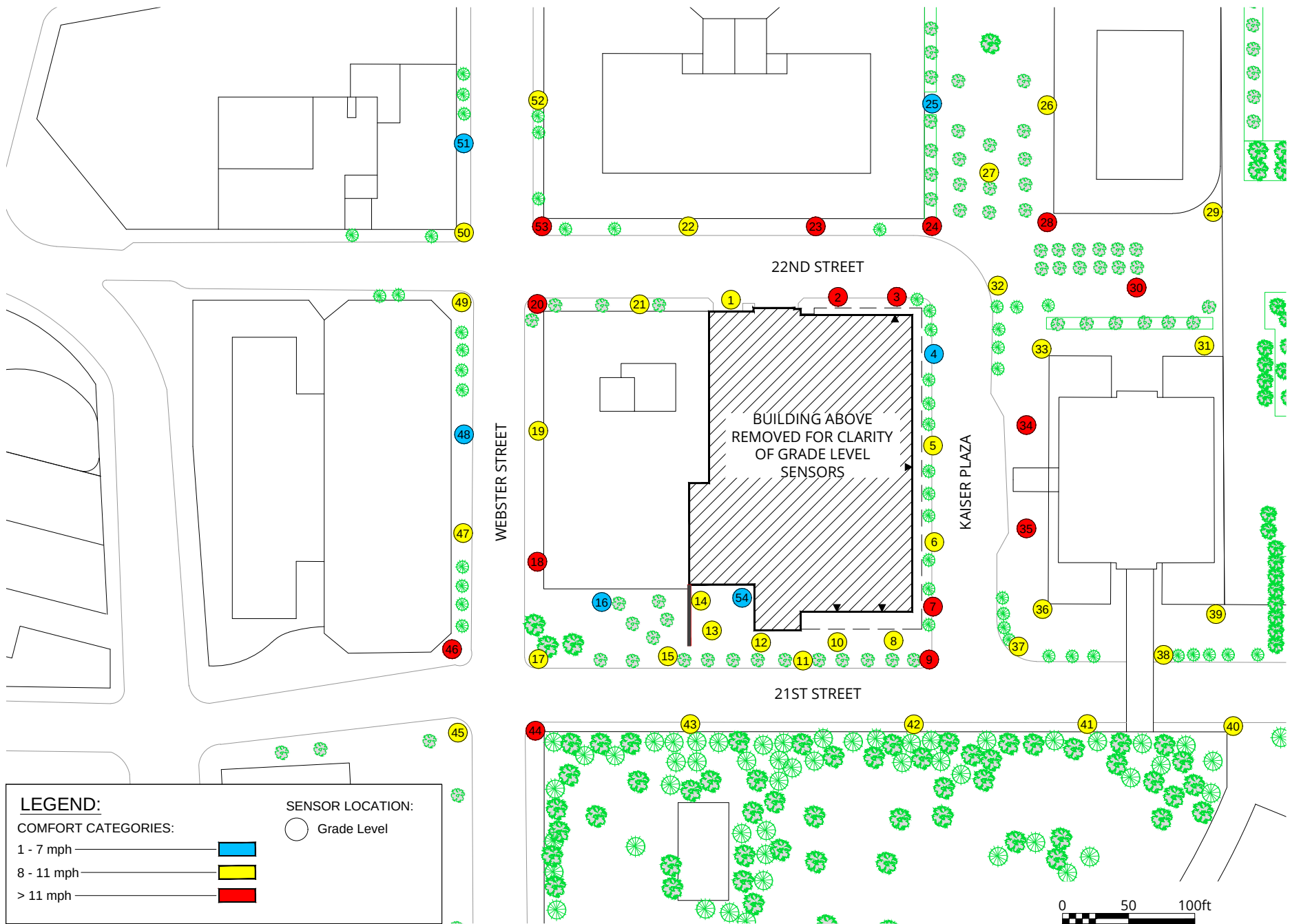
Project #1602304

Drawn by: ck Figure: 3e

Approx. Scale: 1"=100'

Date Revised: Aug. 23, 2017





Pedestrian Wind Comfort Conditions - Tall Boy + Cumulative Annual (January to December)

Kaiser Plaza - Oakland, CA



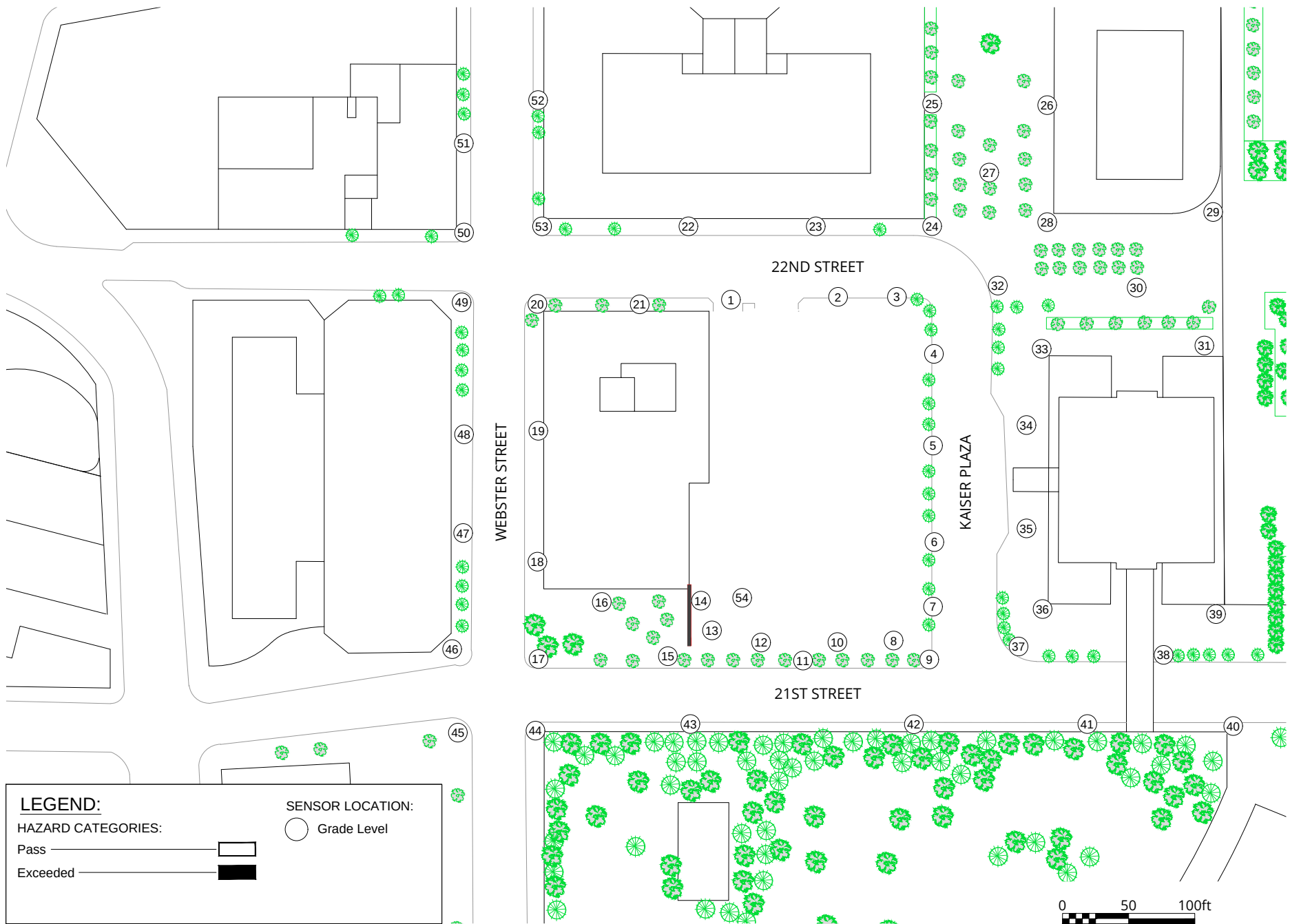
Project #1602304

Drawn by: ck Figure: 3f

Approx. Scale: 1"=100'

Date Revised: Aug. 23, 2017





Pedestrian Wind Hazard Conditions - Existing Annual (January to December)

Kaiser Plaza - Oakland, CA

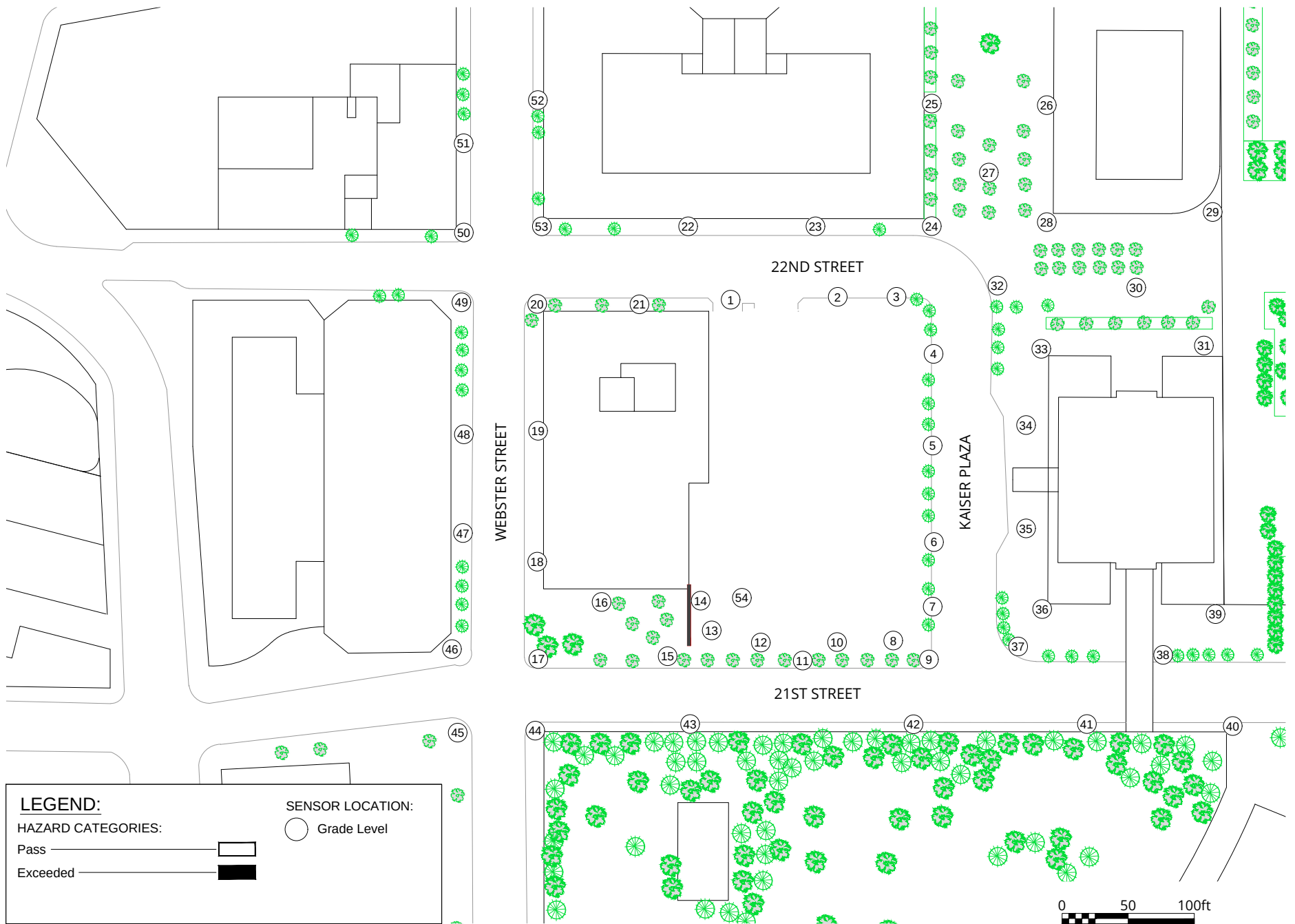
Project #1602304

Drawn by: ck Figure: 4a

Approx. Scale: 1"=100'

Date Revised: Aug. 23, 2017





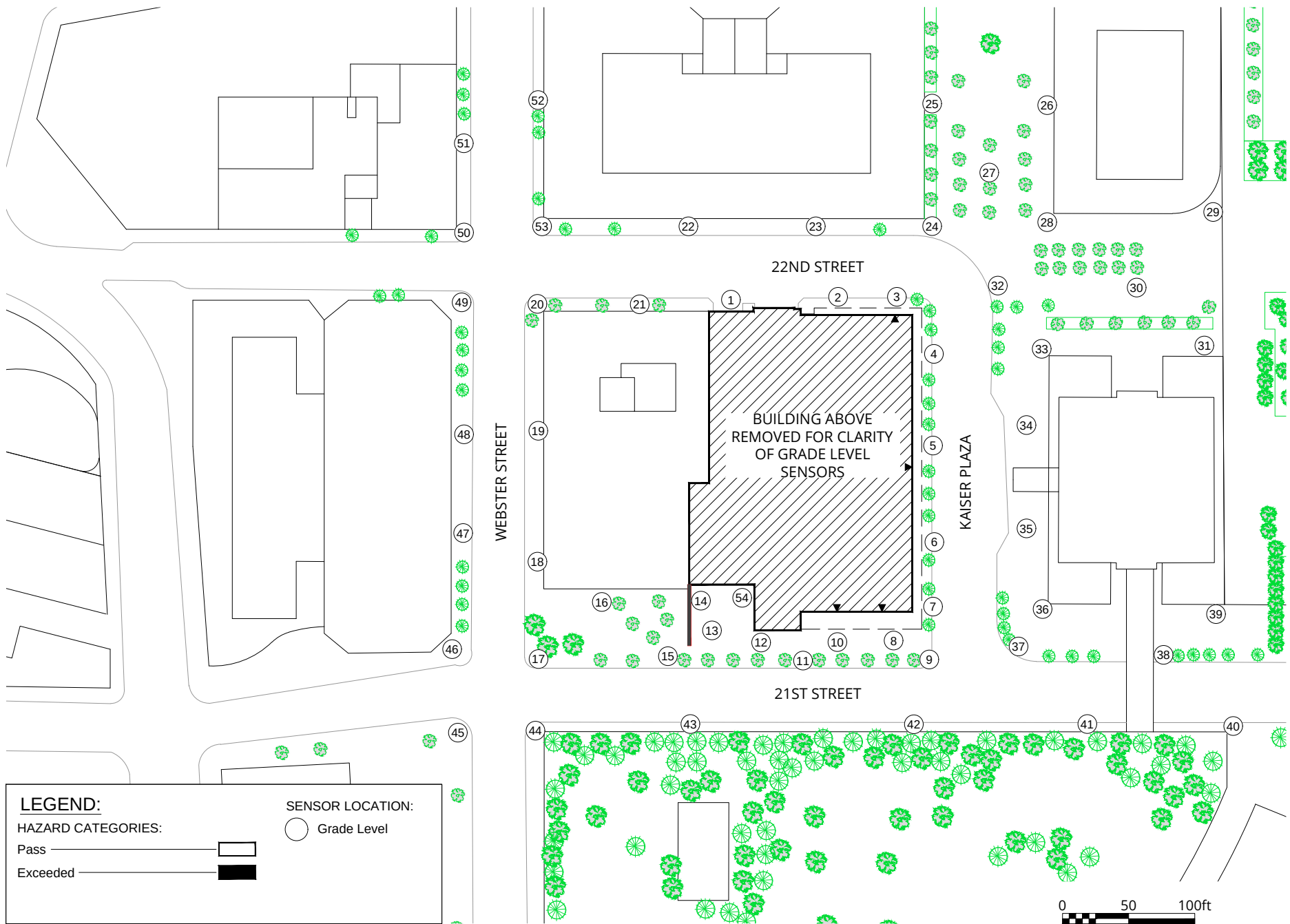
Pedestrian Wind Hazard Conditions - Existing + Cumulative Annual (January to December)

Kaiser Plaza - Oakland, CA

Project #1602304

Drawn by: ck Figure: 4b
Approx. Scale: 1"=100'
Date Revised: Aug. 23, 2017





Pedestrian Wind Hazard Conditions - Low Boy **Annual (January to December)**

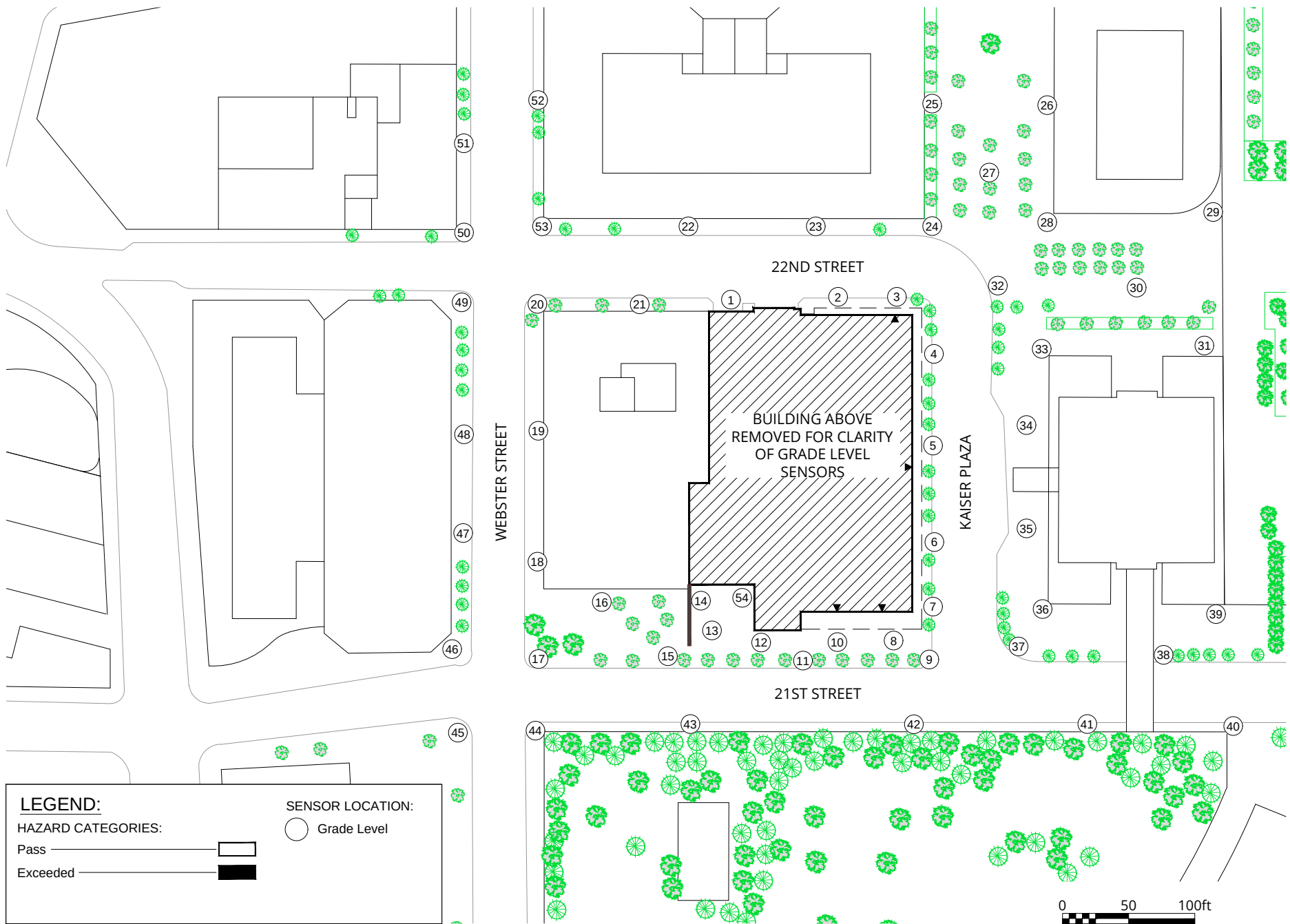
Kaiser Plaza - Oakland, CA



Project #1602304

Drawn by: ck	Figure: 4c
Approx. Scale: 1"=100'	
Date Revised: Aug. 23, 2017	





Pedestrian Wind Hazard Conditions - Low Boy + Cumulative **Annual (January to December)**

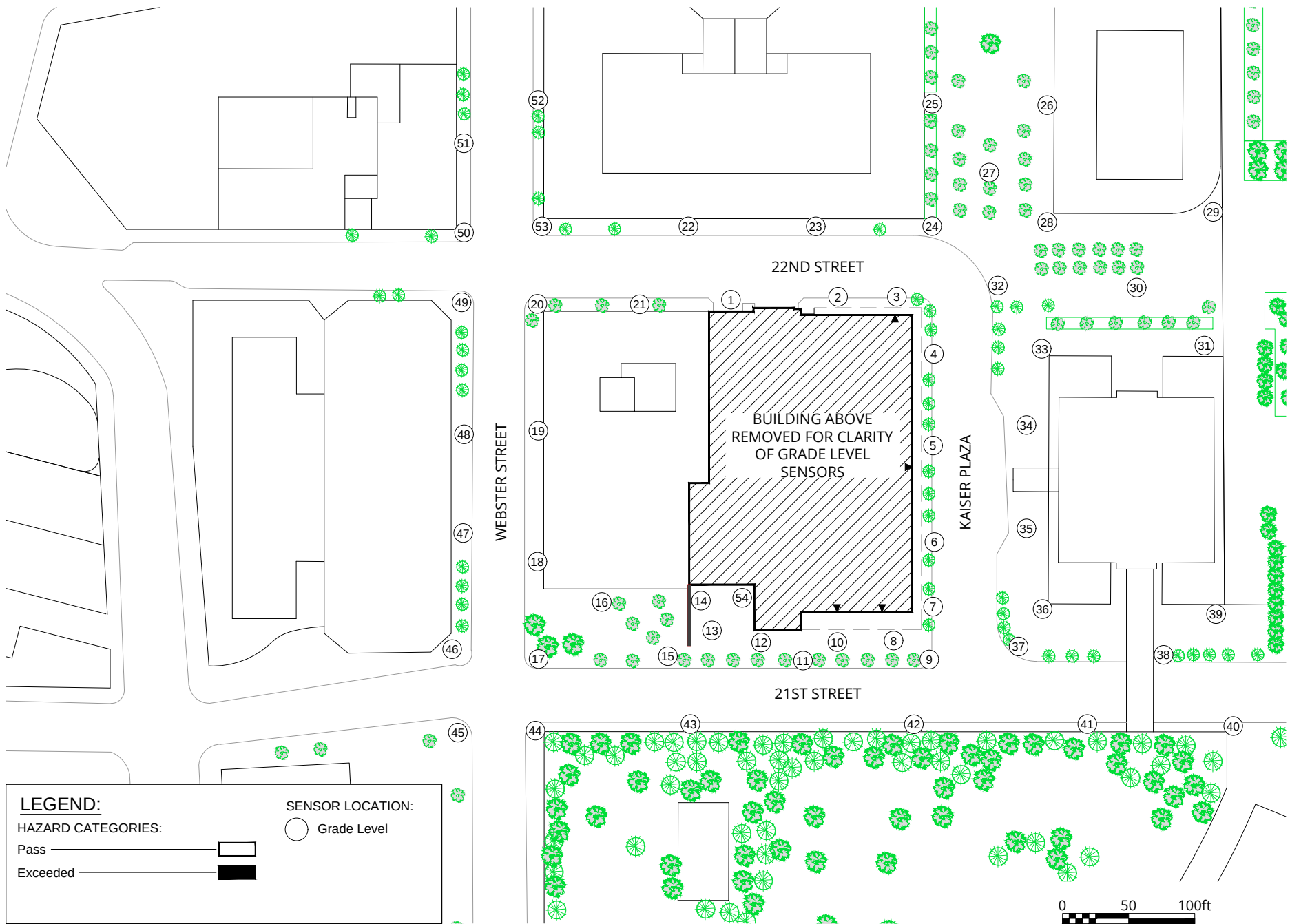
Kaiser Plaza - Oakland, CA



Project #1602304

Drawn by: ck	Figure: 4d
Approx. Scale: 1"=100'	
Date Revised: Aug. 23, 2017	





Pedestrian Wind Hazard Conditions - Tall Boy Annual (January to December)

Kaiser Plaza - Oakland, CA



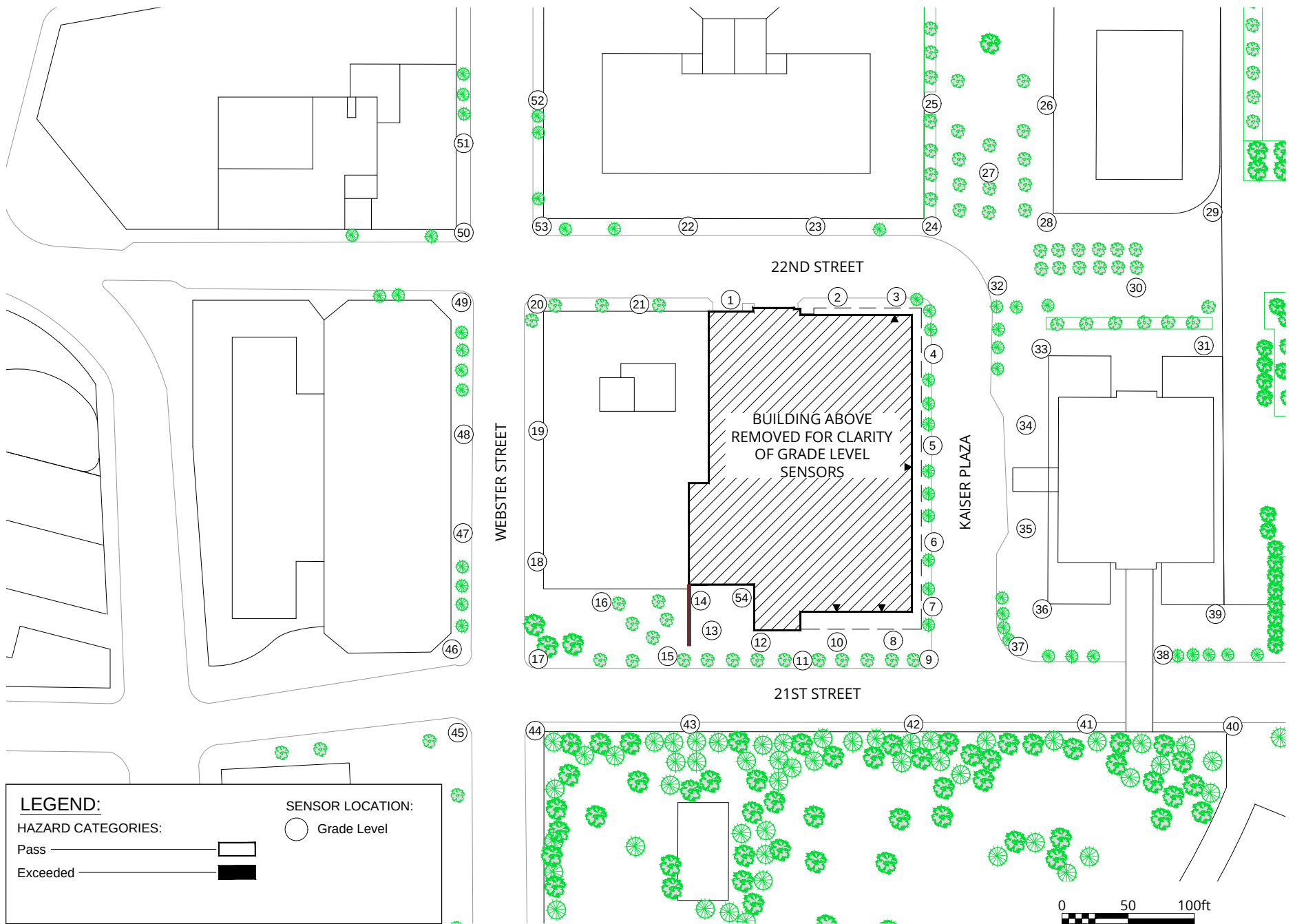
Project #1602304

Drawn by: ck Figure: 4e

Approx. Scale: 1"=100'

Date Revised: Aug. 23, 2017





Pedestrian Wind Hazard Conditions - Tall Boy + Cumulative Annual (January to December)

Kaiser Plaza - Oakland, CA



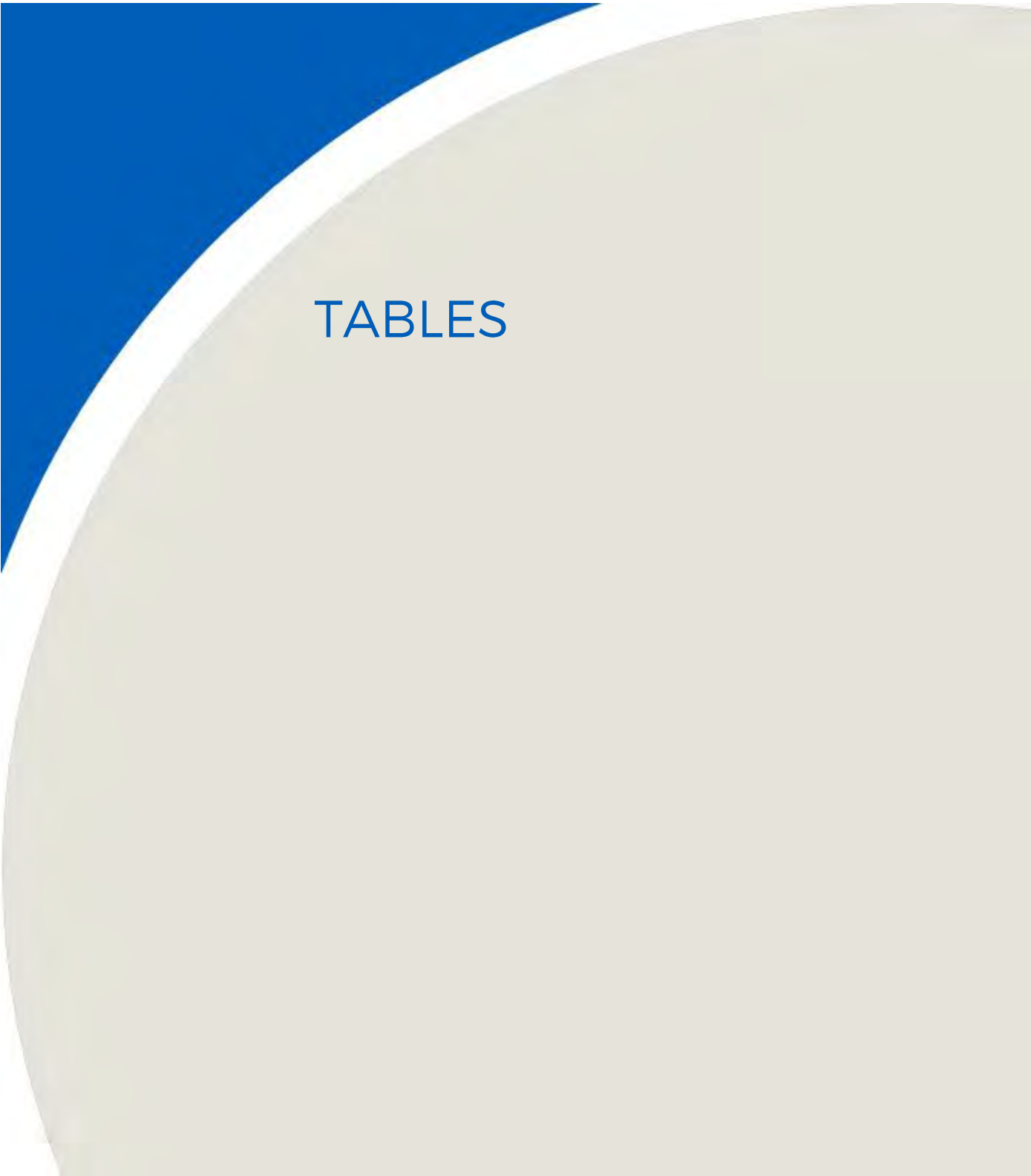
Project #1602304

Drawn by: ck Figure: 4f

Approx. Scale: 1"=100'

Date Revised: Aug. 23, 2017





TABLES



Table 1: Wind Comfort Results
Comfort Criterion Speed = 11 mph

References	A Existing			B Existing + Cumulative				C Low Boy				D Low Boy + Cumulative				E Tall Boy				E Tall Boy + Cumulative			
Location Number	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Exceeds	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds	Wind Speed Exceeded 10% of the Time (mph)	Percent of Time Wind Speed Exceeds 11 mph	Speed Change Relative to Existing (mph)	Exceeds
1	11	10		10	7	-1		10	8	-1		9	4	-2		11	10	0		10	5	-1	
2	12	12	e	11	10	-1		11	10	-1		10	6	-2		13	19	1	e	12	13	0	e
3	12	12	e	11	10	-1		10	6	-2		9	5	-3		13	16	1	e	12	13	0	e
4	13	19	e	12	17	-1	e	9	4	-4		8	3	-5		7	2	-6		7	2	-6	
5	14	23	e	13	19	-1	e	9	3	-5		9	3	-5		9	4	-5		9	4	-5	
6	13	18	e	12	15	-1	e	9	3	-4		8	2	-5		12	12	-1	e	11	10	-2	
7	9	5		9	3	0		12	13	3	e	12	12	3	e	12	16	3	e	13	18	4	e
8	9	3		8	2	-1		9	3	0		8	3	-1		9	5	0		10	4	1	
9	9	5		8	3	-1		11	10	2		11	10	2		13	20	4	e	13	18	4	e
10	9	4		8	3	-1		8	2	-1		8	2	-1		11	10	2		11	10	2	
11	9	4		8	3	-1		9	3	0		9	3	0		12	15	3	e	11	10	2	
12	9	4		8	3	-1		11	10	2		11	10	2		12	13	3	e	11	10	2	
13	8	1		7	1	-1		10	7	2		10	6	2		10	7	2		11	10	3	
14	8	3		8	3	0		9	4	1		9	4	1		9	5	1		9	4	1	
15	11	10		10	6	-1		9	4	-2		8	2	-3		10	6	-1		9	5	-2	
16	9	2		8	2	-1		8	1	-1		6	1	-3		8	1	-1		7	1	-2	
17	12	15	e	11	10	-1		12	15	0	e	11	10	-1		11	10	-1		11	10	-1	
18	15	27	e	14	22	-1	e	14	24	-1	e	13	18	-2	e	12	16	-3	e	12	15	-3	e
19	11	10		11	10	0		12	13	1	e	10	7	-1		12	15	1	e	9	5	-2	
20	13	21	e	12	12	-1	e	14	23	1	e	13	22	0	e	14	26	1	e	14	26	1	e
21	12	15	e	10	7	-2		13	17	1	e	11	10	-1		12	14	0	e	10	7	-2	
22	11	10		10	6	-1		11	10	0		10	6	-1		12	16	1	e	11	10	0	



Table 1: Wind Comfort Results
Comfort Criterion Speed = 11 mph

23	11	10		9	3	-2		11	10	0		10	5	-1		13	21	2	e	12	13	1	e
24	12	13	e	11	10	-1		11	10	-1		10	7	-2		14	20	2	e	13	16	1	e
25	7	1		7	1	0		7	1	0		6	1	-1		7	1	0		6	1	-1	
26	12	16	e	12	15	0	e	11	10	-1		9	4	-3		14	21	2	e	10	7	-2	
27	10	7		10	7	0		10	5	0		9	3	-1		11	10	1		10	7	0	
28	11	10		11	10	0		11	10	0		10	8	-1		14	24	3	e	12	15	1	e
29	16	31	e	16	32	0	e	12	14	-4	e	12	13	-4	e	11	10	-5		10	7	-6	
30	12	15	e	12	14	0	e	11	10	-1		11	10	-1		12	16	0	e	12	12	0	e
31	10	7		10	7	0		8	4	-2		8	4	-2		8	4	-2		8	4	-2	
32	9	4		9	4	0		9	4	0		9	4	0		11	10	2		10	5	1	
33	11	10		11	10	0		10	5	-1		9	4	-2		9	4	-2		9	3	-2	
34	13	18	e	13	16	0	e	13	19	0	e	13	19	0	e	14	22	1	e	13	19	0	e
35	9	4		9	3	0		13	19	4	e	13	20	4	e	14	26	5	e	14	26	5	e
36	10	7		10	6	0		10	6	0		10	5	0		10	6	0		10	7	0	
37	9	5		8	3	-1		9	3	0		9	2	0		9	4	0		9	3	0	
38	12	14	e	12	14	0	e	10	7	-2		10	7	-2		10	7	-2		10	7	-2	
39	12	14	e	12	12	0	e	10	7	-2		11	10	-1		10	7	-2		10	6	-2	
40	11	10		10	7	-1		11	10	0		10	7	-1		11	10	0		11	10	0	
41	8	4		8	4	0		10	7	2		9	5	1		9	6	1		9	4	1	
42	8	2		7	2	-1		10	5	2		8	3	0		12	13	4	e	11	10	3	
43	8	2		7	2	-1		8	2	0		7	3	-1		10	8	2		9	6	1	
44	14	24	e	13	18	-1	e	14	22	0	e	12	14	-2	e	13	21	-1	e	12	15	-2	e
45	11	10		11	10	0		10	7	-1		10	7	-1		10	8	-1		10	6	-1	
46	14	23	e	13	18	-1	e	14	23	0	e	14	19	0	e	13	20	-1	e	13	16	-1	e
47	10	6		8	2	-2		10	7	0		9	3	-1		9	4	-1		9	3	-1	
48	9	4		7	0	-2		10	5	1		7	1	-2		9	2	0		7	1	-2	
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50	12	15	e	11	10	-1		12	15	0	e	11	10	-1		12	12	0	e	11	10	-1	
51	8	3		8	2	0		8	2	0		7	1	-1		8	2	0		7	1	-1	
52	8	3		9	2	1		8	2	0		8	1	0		8	2	0		8	2	0	
53	15	29	e	13	16	-2	e	15	29	0	e	13	20	-2	e	15	27	0	e	13	21	-2	e



Table 1: Wind Comfort Results
Comfort Criterion Speed = 11 mph

54	8	3		8	2	0		7	1	-1		7	1	-1		8	1	0		7	1	-1	
Average speed, Average % exceedance, Total exceedances	10.8 mph	10.9 %	21 of 54	10.1 mph	8.3 %	-0.7 mph	14 of 54	10.5 mph	9.3 mph	-0.3 mph	14 of 54	9.7 mph	7.0 %	-1.1 mph	9 of 54	11.0 mph	11.7 %	0.2 mph	25 of 54	10.4 mph	9.0 mph	-0.5 mph	15 of 54



Table 2: Wind Hazard Results
Hazard Criterion Speed = 36 mph

References	A Existing				B Existing + Cumulative				C Low Boy				D Low Boy + Cumulative				E Tall Boy				E Tall Boy + Cumulative				
Location Number	Wind Speed Exceeded 1hr/year (mph)	Hours/ Year Wind Speeds Exceed Hazard Criterion		Exceeds	Wind Speed Exceeded 1hr/year (mph)	Hours/ Year Wind Speeds Exceed Hazard Criterion	Hours Change Relative to Existing		Exceeds	Wind Speed Exceeded 1 hr/year (mph)	Hours/ Year Wind Speeds Exceed Hazard Criterion	Hours Change Relative to Existing		Exceeds	Wind Speed Exceeded 1 hr/year (mph)	Hours/ Year Wind Speeds Exceed Hazard Criterion	Hours Change Relative to Existing		Exceeds	Wind Speed Exceeded 1 hr/year (mph)	Hours/ Year Wind Speeds Exceed Hazard Criterion	Hours Change Relative to Existing		Exceeds	
1	28	0			27	0	0			23	0	0			20	0	0				25	0	0		
2	34	0			33	0	0			28	0	0			27	0	0				29	0	0		
3	34	0			33	0	0			25	0	0			24	0	0				26	0	0		
4	30	0			30	0	0			27	0	0			26	0	0				23	0	0		
5	31	0			30	0	0			25	0	0			25	0	0				27	0	0		
6	29	0			29	0	0			21	0	0			21	0	0				25	0	0		
7	24	0			23	0	0			27	0	0			27	0	0				29	0	0		
8	21	0			21	0	0			20	0	0			22	0	0				22	0	0		
9	22	0			21	0	0			27	0	0			28	0	0				29	0	0		
10	22	0			23	0	0			18	0	0			18	0	0				23	0	0		
11	23	0			23	0	0			21	0	0			21	0	0				28	0	0		
12	23	0			22	0	0			25	0	0			25	0	0				24	0	0		
13	22	0			22	0	0			22	0	0			22	0	0				24	0	0		
14	24	0			24	0	0			20	0	0			20	0	0				20	0	0		
15	23	0			23	0	0			22	0	0			22	0	0				27	0	0		
16	21	0			22	0	0			21	0	0			21	0	0				22	0	0		
17	30	0			28	0	0			29	0	0			27	0	0				33	0	0		
18	30	0			29	0	0			29	0	0			30	0	0				29	0	0		
19	26	0			33	0	0			26	0	0			32	0	0				32	0	0		
20	29	0			26	0	0			29	0	0			29	0	0				33	0	0		
21	26	0			23	0	0			27	0	0			26	0	0				29	0	0		
22	22	0			21	0	0			24	0	0			21	0	0				28	0	0		



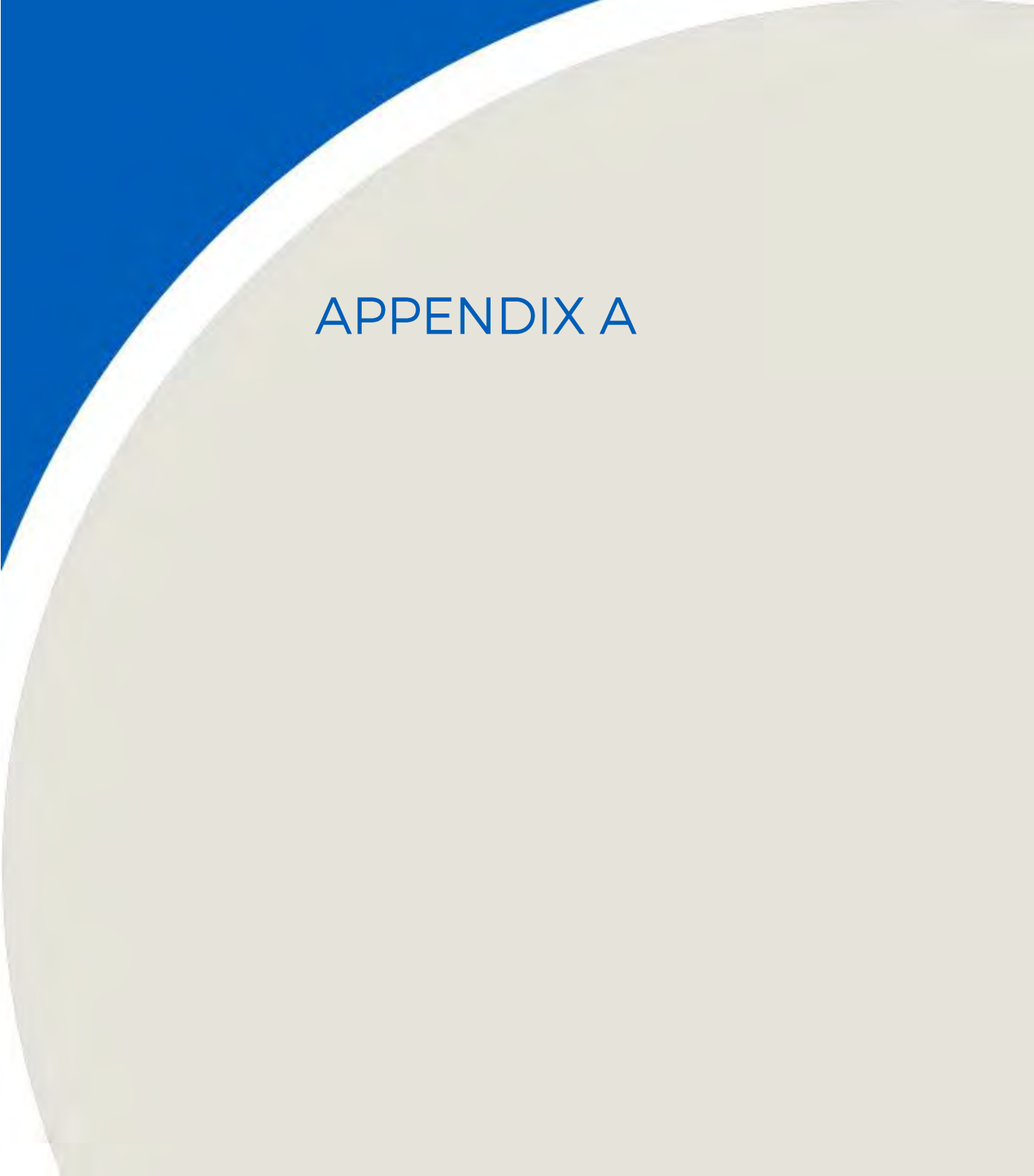
Table 2: Wind Hazard Results
Hazard Criterion Speed = 36 mph

23	22	0		20	0	0		23	0	0		22	0	0		32	0	0		32	0	0	
24	33	0		33	0	0		30	0	0		29	0	0		33	0	0		30	0	0	
25	19	0		20	0	0		19	0	0		19	0	0		22	0	0		22	0	0	
26	30	0		25	0	0		28	0	0		22	0	0		30	0	0		24	0	0	
27	27	0		27	0	0		25	0	0		26	0	0		30	0	0		29	0	0	
28	35	0		35	0	0		35	0	0		35	0	0		35	0	0		35	0	0	
29	34	0		34	0	0		30	0	0		31	0	0		31	0	0		31	0	0	
30	30	0		30	0	0		30	0	0		30	0	0		28	0	0		27	0	0	
31	31	0		32	0	0		32	0	0		31	0	0		30	0	0		30	0	0	
32	21	0		21	0	0		21	0	0		21	0	0		26	0	0		21	0	0	
33	29	0		30	0	0		28	0	0		29	0	0		28	0	0		29	0	0	
34	34	0		35	0	0		34	0	0		35	0	0		35	0	0		35	0	0	
35	21	0		21	0	0		28	0	0		28	0	0		31	0	0		30	0	0	
36	34	0		33	0	0		30	0	0		29	0	0		23	0	0		23	0	0	
37	23	0		21	0	0		21	0	0		20	0	0		21	0	0		20	0	0	
38	29	0		28	0	0		28	0	0		28	0	0		27	0	0		27	0	0	
39	28	0		28	0	0		28	0	0		28	0	0		28	0	0		27	0	0	
40	29	0		28	0	0		28	0	0		28	0	0		29	0	0		29	0	0	
41	31	0		31	0	0		29	0	0		29	0	0		30	0	0		29	0	0	
42	19	0		20	0	0		23	0	0		23	0	0		26	0	0		25	0	0	
43	19	0		21	0	0		23	0	0		22	0	0		32	0	0		29	0	0	
44	29	0		27	0	0		29	0	0		25	0	0		28	0	0		26	0	0	
45	28	0		27	0	0		27	0	0		26	0	0		28	0	0		27	0	0	
46	33	0		32	0	0		32	0	0		31	0	0		31	0	0		31	0	0	
47	21	0		19	0	0		24	0	0		23	0	0		27	0	0		27	0	0	
48	20	0		16	0	0		20	0	0		18	0	0		19	0	0		19	0	0	
49	32	0		29	0	0		31	0	0		31	0	0		30	0	0		31	0	0	
50	27	0		25	0	0		25	0	0		24	0	0		25	0	0		25	0	0	
51	25	0		24	0	0		21	0	0		21	0	0		23	0	0		23	0	0	
52	24	0		18	0	0		23	0	0		19	0	0		24	0	0		20	0	0	
53	33	0		30	0	0		34	0	0		30	0	0		33	0	0		31	0	0	



Table 2: Wind Hazard Results
Hazard Criterion Speed = 36 mph

54	25	0		25	0	0		19	0	0		19	0	0		20	0	0		21	0	0	
Average speed, Total hours, Total exceedances	27 mph	0 hrs	0 of 54	26 mph	0 hrs	0 hrs	0 of 54	26 mph	0 hrs	0 hrs	0 of 54	25 mph	0 hrs	0 hrs	0 of 54	27 mph	0 hrs	0 hrs	0 of 54	27 mph	0 hrs	0 hrs	0 of 54

The graphic for Appendix A features a large, light beige circle on the right side of the page. To its left is a solid blue triangle. A thin white curved line separates the blue triangle from the beige circle. The text 'APPENDIX A' is centered in the white space between the triangle and the circle.

APPENDIX A

Drawing List for Model Construction

The drawings and information listed below were received from CIM and were used to construct the scale model of the proposed Kaiser Plaza. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

File Name	File Type	Date Received (mm/dd/yyyy)
2KP Trees.pdf	pdf	5/10/2017
20170524_TALLBOY.3dm	Rhinoceros	5/24/2017
20170524_LOWBOY.3dm	Rhinoceros	5/24/2017
IMG_1093.JPG - IMG_1114.jpg	jpeg	8/15/2017
IMG_4912.JPG - IMG_4927.jpg	jpeg	8/15/2017
2017_0815_2KP Entrance Lobby.pdf	pdf	8/15/2017

Attachment G: Transportation Demand Management Plan



DRAFT MEMORANDUM

Date: October 16, 2017
To: Sean Buran, CIM
From: Sam Tabibnia
Subject: 2 Kaiser Plaza – Transportation and Parking Demand Management Plan

OK16-0092

The proposed 2 Kaiser Plaza project is required to prepare a Transportation and Parking Demand Management (TDM) Plan because it would generate more than 50 peak hour trips. Since the project would generate more than 100 peak hour trips, the TDM Plan goal is to achieve a 20 percent vehicle trip reduction (VTR).

Project Description

The project would be located at 2 Kaiser Plaza between 21st and 22nd Streets in downtown Oakland. Two project options are currently under consideration:

- Scheme A would consist of about 457,100 gross square feet of office, about 11,380 gross square feet of retail, and 280 parking spaces.
- Scheme B would consist of about 850,055 gross square feet of office, about 8,705 gross square feet of retail, and 352 parking spaces.

Project Location

The project is located in Downtown Oakland, a dense, pedestrian-friendly, urban area, and is less than a quarter-mile from a BART Station and frequent bus service. The project's location is expected to result in relatively high rate of pedestrian, bicycle, and transit trips. As a result, the automobile trips generated by the project is estimated to be slightly more than half of trips generated by a typical suburban office building, as shown in **Table 1**. Similarly, the VMT per worker in the project area is about 60 percent of the regional VMT per worker (The project VMT per worker is 12.7 compared to the regional VMT of 21.8) as documented in the project CEQA Analysis document.



**TABLE 1: 2 KAISER PLAZA
PROJECT AUTOMOBILE TRIP GENERATION SUMMARY**

Land Use	Units ¹	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Scheme A									
Office	457.1 KSF	710 ²	4,170	568	77	645	100	490	590
Retail	11.4 KSF	820 ³	490	7	4	11	20	22	42
Subtotal			4,660	575	81	656	120	512	632
Non-Auto Reduction (-46.9%) ⁴			-2,180	-270	-38	-308	-56	-240	-296
Scheme A Total Automobile Trips			2,480	305	43	348	64	272	336
Scheme B									
Office	850.1 KSF	710 ²	6,680	933	127	1,060	175	856	1,031
Retail	8.7 KSF	820 ³	370	5	3	8	15	17	32
Subtotal			7,050	938	130	1,068	190	873	1,063
Non-Auto Reduction (-46.9%) ⁴			-3,310	-440	-61	-501	-89	-409	-499
Scheme B Total Automobile Trips			3,740	498	69	567	101	464	564

1. KSF = 1,000 square feet.
 2. ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):
Daily: $\ln(T) = 0.76 * \ln(X) + 3.68$
AM Peak Hour: $\ln(T) = 0.80 * \ln(X) + 1.57$ (88% in, 12% out)
PM Peak Hour: $T = 1.12(X) + 78.45$ (17% in, 83% out)
 3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):
Daily: $T = 42.7 * X$
AM Peak Hour: $T = 0.96 * X$ (62% in, 38% out)
PM Peak Hour: $T = 3.71 * X$ (48% in, 52% out)
 4. Reduction of 46.9% assumed. Based on City of Oakland *Transportation Impact Review Guidelines* using Census data for urban environments within 0.5 miles of a BART Station.
- Source: Fehr & Peers, 2017.

The project would also include the following features that further discourage driving and encourage non-automobile modes:

- The parking supply provided in both project options would be less than the current office parking demand in Downtown Oakland¹, which would further discourage driving to and from the project site.
- The project would provide the following that would meet or exceed City code requirements for bicycle parking and amenities:

¹ Scheme A would provide 0.61 parking spaces per 1,000 square feet and Scheme B would provide 0.41 parking spaces per 1,000 square feet. It is estimated that the proposed project would have a parking demand of about 1.2 spaces per 1,000 square feet based on the assumptions that typical office developments have about 3.0 workers per 1,000 square foot and US Census data shows that about 40 percent of workers in downtown Oakland drive to work.



- o Scheme A would provide at least 48 long-term and 29 short-term bicycle parking spaces, as well as four showers and 16 lockers for each gender (a total of eight showers and 32 lockers)
- o Scheme B would provide at least 87 long-term and 48 short-term bicycle parking spaces, as well as seven showers and 28 lockers for each gender (a total of 14 showers and 56 lockers)

Under both schemes, the long-term bicycle parking would be provided in a secure bicycle room on the ground level of the building, accessible from the building lobby. The shower and locker facilities would be located adjacent to the long-term bicycle parking. The short-term bicycle parking would be located along the project frontage near the building entrances.

Mandatory TDM Strategies

This section describes the mandatory strategies that shall be implemented at the project. Some of these strategies shall be directly implemented by the building management and others shall be implemented by individual tenants. If the mandatory measures do not achieve the required VTR goals, additional voluntary measures are to be implemented, as described in the following section. **Table 2** lists these mandatory TDM strategies, the responsible party for implementation, and the effectiveness of each strategy based on research compiled in Quantifying Greenhouse Gas Mitigation Measures (California Air Pollution Control Officers Association (CAPCOA), August 2010). This report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies.

The mandatory strategies for the project are:

- *Infrastructure Improvements* – the following infrastructure improvements in the vicinity of the project would improve the bicycling, walking, and transit systems in the area and further encourage the use of these modes:
 - o Explore the feasibility and if feasible, install directional curb ramps at all corners of the 21st Street/Webster Street, 21st Street/Kaiser Plaza, and 22nd Street/Webster Street intersections. Considering that fire hydrants, signal poles, light poles, and/or storm drain inlets may be present at these locations, construction of curb extensions (bulbouts) may also be required at some locations to accommodate the directional curb ramps.



TABLE 2
MANDATORY TDM PROGRAM COMPONENTS

TDM Strategy	Responsible Party	Estimated Trip Reduction¹
Infrastructure Improvements	Building Management	NA ²
Alternative Work Schedule/Flexible Hours/ Telecommuting	Project Tenants	<1%
Pre-tax Commuter Benefit	Project Tenants	NA ¹
Transit Fare Subsidy	Building Management and Project Tenants	10% ³
Parking Management	Building Management	5%
Carpool and Ride-Matching Assistance	Building Management	2%
Preferential Parking for Carpoolers	Building Management	
Designate On-Site Car-Share Spaces	Building Management	1%
Bicycle Facility Monitoring	Building Management	NA ²
Guaranteed Ride Home	Project Tenants	NA ²
TDM Coordinator	Building Management and Project Tenants	NA ²
TDM Marketing and Tenant/Employee Education	Building Management and Project Tenants	2%
	Total	20%

1. The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012)
 2. The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that at the time of the CAPCOA report development, existing literature did not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.
 3. Assuming a subsidy of \$3.00 per employee per day available to 50 percent of building employees.
- Sources: Fehr & Peers, 2017.



- o Explore the feasibility and if feasible without upgrading the entire signal equipment at the intersection, install the remaining pedestrian signal heads in both directions of all four pedestrian crossings at the 21st Street/Webster Street intersection (The intersection provides only one pedestrian signal head on each side of Webster Street for the northbound direction).
- *Alternative Work Schedule/Flexible Hours/Telecommuting* – Encourage project tenants to offer alternative work schedules, flexible hours, and or telecommuting, which can eliminate employee trips or shift them to non-peak periods.
- *Pre-tax Commuter Benefits* – Encourage project tenants to enroll in WageWorks or other service to help with pre-tax commuter savings. This strategy allows employees to deduct monthly transit passes or other amount using pre-tax dollars. This can help to lower payroll taxes and allows employees to save on transit.
- *Transit Fare Subsidy* – Building management shall either provide or require project tenants to provide free or reduced cost transit in order to increase transit mode share. Options include:
 - o Employers can offer a monthly commuter check (or alternatively Clipper Card, which is accepted by BART, AC Transit, and other major transit providers in the Bay Area) to employees to use public transit. Note that as of 2017, IRS allows up to \$255 per employee per month.
 - o Employers can participate in AC Transit's EasyPass program, which enables employers to purchase annual bus passes for their employees in bulk at a deep discount. The passes allow unlimited rides on all AC Transit buses for all employees. For more information, see www.actransit.org/rider-info/easypass.

Based on the CAPCPA report, a transit fare subsidy of about \$3.00 per employee per day (value to employee) available to 50 percent of the site employees would translate to an approximately 10 percent reduction in driving trips generated by the project.

- *Parking Management* – Building management shall charge for all parking spaces in the building unless noted in other strategies, remove the cost of parking from the lease agreements, and set the fee for monthly, daily, and/or hourly parking shall be same as or higher than other nearby garages.
- *Carpool and Ride-Matching Assistance Program* – The building management shall offer personalized ride-matching assistance to pair employees interested in forming commute carpools. As an enhancement, building management may consider using specific services such as ZimRide, ComoVee, or 511.org RideShare.



- *Preferential Parking for Carpoolers* – The building management shall offer free or discounted preferential carpool parking for eligible commuters. To be eligible for carpool parking, the carpool shall consist of three or more people. The building management shall monitor and provide adequate carpool spaces to meet and exceed potential demand. Considering the limited parking supply in Downtown Oakland, all or some of the unoccupied parking spaces designated for carpool shall be available for general use after 10:00 AM.
- *Car-Share Spaces* – Designate at least two on-site parking spaces for Carsharing (such as Getaround, Zip Car, etc.) for free. Monitor the usage of the carsharing spaces and adjust if necessary. As an additional strategy, encourage project tenants to provide free/subsidized car-share membership to their employees.
- *Bicycle Facility Monitoring* – As previously described, the project would meet or exceed the City's requirements for short-term and long-term bicycle parking. Building management shall monitor the usage of these facilities and provide additional bicycle parking if necessary.
- *Guaranteed Ride Home* – Encourage project tenants to register for the Guaranteed Ride Home (GRH) program. Employees may be hesitant to commute by any other means, besides driving alone, since they lose the flexibility of leaving work in case of an emergency. GRH programs encourage alternative modes of transportation by offering free rides home in the case of an illness or crisis, if the employee is required to work unscheduled overtime, if a carpool or vanpool is unexpectedly unavailable, or if a bicycle problem arises. The Alameda County Transportation Commission offers a GRH service for all registered permanent employees who are employed within Alameda County, live within 100 miles of their worksite, and do not drive alone to work. The GRH program is offered at no cost to the employer, and employers are not required to register in order for their employees to enroll and use the program.
- *TDM Coordinator* – Each tenant shall designate a staff person as their TDM coordinator to coordinate, monitor and publicize TDM activities. Building management shall also designate a "Building TDM coordinator."
- *TDM Marketing and Tenant/Employee Education*- Building management shall provide tenants and employees information about various transportation options in the project area and the TDM strategies provided by the building. This information would also be posted at central location(s) and be provided to each building tenant. The information shall be updated as necessary. Marketing strategies can promote alternative trips by making commuters aware of the options and incentives of using non-automobile transportation. Implementing commute trip reduction strategies with a complementary marketing strategy can increase the overall effectiveness of the program.



- o Building management shall provide information on the Bay Area Commuter Benefits Program to all building tenants. As of September 30, 2014, Bay Area employers with 50 or more full-time employees within the Bay Area Air Quality Management District (Air District) geographic boundaries are required to register and offer commuter benefits to their employees in order to comply with Air District Regulation 14, Rule 1, also known as the Bay Area Commuter Benefits Program. Employers must select one of four Commuter Benefit options to offer their employees: a pre-tax benefit, an employer-provided subsidy, employer-provided transit, or an alternative commute benefit. (Additional information about the Commute Benefits Program is at 511.org/employers/commuter/overview.)

Additional TDM Strategies

The project should consider the implementation of some or all of the following additional strategies to limit automobile use and encourage non-automotive travel. If the mandatory TDM strategies do not meet the required goals, the implementation of some or all of these measures may become necessary. **Table 3** lists these additional TDM strategies, the responsible party for implementation, and their estimated effectiveness.

TABLE 3
ADDITIONAL TDM PROGRAM COMPONENTS

TDM Strategy	Responsible Party	Estimated Trip Reduction
Increased Transit Subsidy	Project Tenants	NA ¹
Increased Parking Fee	Building Management	NA ¹
Car-Share Membership	Project Tenants	NA ¹
Bike-Share Membership	Project Tenants	NA ¹
Personalized Trip Planning	Building Management	NA ¹
1. Estimated trip reductions will only be recalculated as part of a Corrective Action Plan, if required. Sources: Fehr & Peers, 2017.		



- *Increased Transit Subsidy* – Encourage tenants to increase the transit subsidy provided to employees. Alternatively, the building management can include a specific number of transit passes with each lease agreement.
- *Increased Parking Fees* – Increase the cost of on-site parking to further discourage site employees from driving.
- *Car-Share Membership* – Encourage increased usage of car-share by encouraging tenants to fully or partially pay for their employees' yearly membership fee and insurance associated with car-sharing.
- *Bike-Share Membership* – Encourage increased usage of bike-share by encouraging tenants to fully or partially pay for their employees' yearly membership fee and insurance associated with bike-sharing.
- *Personalized Trip Planning* – In the form of in-person assistance or as a web tool, this provides employees with a customized menu of options for commuting. Trip planning reduces the barriers employees see to making a walk, bike, or transit trip to the site. Transit trip making tools, such as those available from Google or 511.org, could be promoted to inform employees of transit options to/from work. Providing a map of preferred walking routes to destinations within one mile of the site and a map of bicycling routes within five miles of the site would be a proactive strategy to encourage those employees to use alternatives to driving. Building management can make presentation to employers and their employees upon request or at set times.

TDM Compliance

Since the proposed project would generate more than 100 net peak hour automobile trips and the TDM Plan contains ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual vehicle trip reduction 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 the Project Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the vehicle trip reduction goal is not achieved.

Please contact Sam with questions or comments.

Attachment H: Construction Noise Plan

2 KAISER PLAZA CONSTRUCTION NOISE PLAN

Start and End Dates of Construction for Each Phase of the Project

Phase	Start Date	End Date	Number of Days
Demo + Rough Grade	1/1/2019	3/31/2019	89
Infrastructure	4/1/2019	3/31/2020	365
Foundations + Buildings	6/1/2019	9/30/2021	850
Paving + Landscape	7/1/2021	10/31/2021	120
All Construction	1/1/2019	10/31/2021	1034

The Construction Equipment Types

Phase	Equipment Type/Fuel	Number	Horsepower	Hours/day	Duration (days)
Demo Rough Grade	Dump Truck/Diesel	2	325	8	60
	Excavator/Diesel	1	250	8	60
	Scraper/Diesel	1	350	8	30
	Water Truck/Diesel	1	330	8	90
Infrastructure	Dump Truck/Diesel	2	325	8	Intermittent
	Backhoe/Diesel	1	250	8	Intermittent
	Trencher	1	41	8	Intermittent
Foundations Building	Tower Crane/Electric	1	200	8	850
	Drill/Diesel	1	225	8	120
	Drill/Diesel	1	210	8	850
	Forklift/Diesel	2	325	2	850
	Concrete truck/Diesel	1	330	8	850
	Water Truck/Diesel	1	35	8	500

	Welder/Diesel	2	150	8	500
	Air compressor/Diesel	2	120	8	850
	Hi-lift forklift/Diesel				
Paving	Roller/Diesel	1	40	8	60
Landscape	Paver/Diesel	1	175	8	60
	Berm Machine/Diesel	1	44	8	60
	Dump truck/Diesel	1	325	8	60
	Pickup/Diesel	2	250	8	60

Proposed Construction Equipment List with Typical Average Noise Levels

Equipment	Noise Level dBA Average
Dump Truck/Diesel	80
Excavator/Diesel	80
Scraper/Diesel	88
Water Truck/Diesel	80
Backhoe/Diesel	85
Trencher	85
Tower Crane/Electric	83
Drill/Diesel	89
Forklift/Diesel	80
Concrete truck/Diesel	80
Welder/Diesel	86
Air compressor/Diesel	88
Hi-lift forklift/Diesel	80

Roller/Diesel	80
Paver/Diesel	80
Berm Machine/Diesel	80

Construction Noise Reduction Draft Recommendations

The specific noise level during construction could vary and will depend on the duration, and location of use for each piece of equipment. The noise levels above represent an estimated worst-case scenario of a piece of equipment being operated continuously for 60 minutes at the edge of the site closest to the receiver location. Noise levels can be monitored during construction to refine these estimates and corresponding mitigation measures as necessary.

Potential Mitigation Measures

- Limit construction hours to those allowed in City of Oakland Code.
- Temporary barriers will be constructed around the project site to a height of 8-ft above the ground, which should block line-of-sight to most receivers. Where tall equipment is used close to the property line, a temporary extension to the barrier could be installed to raise the barrier height to break line-of-sight to the noise generating area of the equipment (e.g., engine/exhaust).
- Continuous or periodic noise monitoring can be performed to respond to neighbor complaints and refine mitigation measures in an effort to reduce impacts to adjacent properties.
- If needed, provide localized barriers around stationary equipment such as air compressors that break line-of-sight to neighboring properties.
- Locate generators far away from noise-sensitive receivers, as feasible. If necessary, generator noise could be reduced by providing sound-rated enclosures and exhaust mufflers or by providing a local noise barrier.
- Where necessary, provide exhaust mufflers on pneumatic tools. All equipment should be properly maintained.
- Minimize truck idling and require trucks to load and unload materials in the construction areas, as opposed to idling on local streets. If truck staging is required, locate the staging area along major roadways interior to the project site with higher traffic noise levels or away from the noise-sensitive areas.

- Consider means to reduce the use of heavy impact tools and locate these activities away from the property line as feasible. Other methods, including drilling, could be employed if noise levels are found to be excessive.

Attachment I: Greenhouse Gas Reduction Plan

2 KAISER PLAZA OFFICE DEVELOPMENT

GREENHOUSE GAS EMISSIONS REDUCTION PLAN

Oakland, California

September 15th, 2017

Prepared for:

**Sharon Wright
Lamphier-Gregory
1944 Embarcadero
San Jose, California 95126**

Prepared by:

**James Reyff
ILLINGWORTH & RODKIN, INC.
/// Acoustics • Air Quality ///**
1 Willowbrook Court, Suite 120
Petaluma, CA 94954
(707) 794-0400

Project: 16-206

Introduction

The purpose of this report is to address greenhouse gas (GHG) emissions and plans to reduce the emissions associated with the Kaiser Plaza commercial development in Oakland. The project site is currently occupied by a surface parking lot. The 1.02-acre project site is bounded by Kaiser Plaza to the east, 22nd street to the north, a high-rise commercial development to the west and, 21st Street to the south. Two project options (Scheme 1 and Scheme 2) have been proposed. The existing parking lot would be removed under both options. Scheme 1 proposes the development of a 34-story commercial building consisting of 7,396 square feet (sf) of retail space, 877,522 sf of office space and 342 parking spaces. Scheme 2 proposes the development of a 19-story commercial building consisting of 7,396 sf of retail space, 438,389 sf of office space and 181 parking spaces. GHG emissions associated with construction and operation of both project options were modeled and compared.

Setting

The project is located in the Alameda County, which is in the San Francisco Bay Area Air Basin. 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.

City of Oakland – Standard Conditions of Approval

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.

SCA GHG 1: Greenhouse Gas (GHG) Reduction Plan. (#38)

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

The goal of the GHG Reduction Plan shall be to increase energy efficiency and reduce GHG emissions to below CEQA Thresholds of Significance (1,100 metric tons of CO₂e per year or 4.6 metric tons of CO₂e per year per service population) AND to reduce GHG emissions by 36 percent below the project’s “adjusted” baseline GHG emissions (as explained below) to help achieve the City’s goal of reducing GHG emissions. The GHG Reduction Plan shall include, at a minimum, (a) a detailed GHG emissions inventory for the project under a “business-as-usual” scenario with no consideration of project design features, or other energy efficiencies, (b) an “adjusted” baseline GHG emissions inventory for the project, taking into consideration energy efficiencies included as part of the project (including the City’s Standard Conditions of Approval, proposed mitigation measures, project design features, and other City requirements), (c) a comprehensive set of quantified additional GHG reduction measures available to further reduce GHG emissions beyond the adjusted GHG emissions, and (d) requirements for ongoing monitoring and reporting to demonstrate that the additional GHG reduction measures are being implemented. If the project is to be constructed in phases, the GHG Reduction Plan shall provide GHG emission scenarios by phase.

Potential GHG reduction measures to be considered include, but are not be limited to, measures recommended in BAAQMD’s latest CEQA Air Quality Guidelines, the California Air Resources Board Scoping Plan (December 2008, as may be revised), the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures (August 2010, as may be revised), the California Attorney General’s website, and Reference Guides on Leadership in Energy and Environmental Design (LEED) published by the U.S. Green Building Council.

The types of allowable GHG reduction measures include the following (listed in order of City preference): (1) physical design features; (2) operational features; and (3) the payment of fees to fund GHG-reducing programs (i.e., the purchase of “carbon credits”) as explained below.

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

As with preferred locations for the implementation of all GHG reductions measures, the preference for carbon credit purchases include those that can be achieved as follows (listed in order of City preference): (1) within the City of Oakland; (2) within the San Francisco Bay Area Air Basin; (3) within the State of California; then (4) elsewhere in the United States. The cost of carbon credit purchases shall be based on current market value at the time purchased and shall be based on the project’s operational emissions estimated in the GHG Reduction Plan or subsequent approved emissions inventory, which may result in emissions that are higher or lower than those estimated in the GHG Reduction Plan.

For physical GHG reduction measures to be incorporated into the design of the project, the measures shall be included on the drawings submitted for construction-related permits.

GHG Emissions Modeling

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

Project Scenarios Modeled

The project includes two possible development schemes, as described above (i.e., Scheme 1 and 2). A “business as usual” or BAU scenario was modeled assuming 2005 conditions.

Land Uses and Size

The proposed project land uses were input into CalEEMod, which included: 877,752 sf entered as “General Office Building,” 7,396 sf entered as “Strip Mall,” and 342 spaces entered as “Enclosed Parking with Elevator” for Scheme 1, and 438,389 sf entered as “General Office Building”, 7,396 sf as “Strip Mall”, and 181 spaces as “Enclosed Parking with Elevator” for Scheme 2.

Service Population Emissions

The project service population efficiency rate is based on the number of future full-time employees. The number of future full time employees is estimated at 2,655 for scheme 1 and 1,338 for Scheme 2 based on an approximate 3 employees per 1,000 sf of retail or office space.

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 year Scheme 1 would be constructed and begin operating would be 2020 and Scheme 2 would begin operating in 2019. Both projects were analyzed for the year 2020.

Trip Generation Rates

Project vehicle trips generation rates were developed by Fehr & Peers for both project schemes using ITE Trip Generation (9th Edition) land use category 710 for General Office Building and 820 (Shopping Center – Adj. Streets). A 43-percent reduction was applied by Fehr and Peers, 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. 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. The default trip lengths, trip types and purposes specified by CalEEMod were used. Note that the relatively low trip generation rates that are reflective of an urban environment that includes a higher percentage of transit, pedestrian and bicycle trips were applied to both the Project and BAU modeling scenarios.

Energy

CalEEMod defaults for energy use were used, which include the 2013 Title 24 Building Standards. No adjustments were made to account for new CalGreen building standards that were required beginning in 2017 that would increase energy efficiency.

CalEEMod 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. Pacific Gas & Electric's most recent certified rate was for 2014, which is 435 pounds of CO₂e per megawatt of electricity produced.¹ PG&E provides past CO₂ intensity rates and forecasts present and future rates (out to 2020), based on the CPUC's GHG calculator. The projected 2020 CO₂ intensity rate for PG&E is 290 pounds of CO₂e per megawatt of electricity produced.

Solid Waste

While CalEEMod has default solid waste generation rates for various land uses, these tend to be low for busy office buildings in urban environments. CalRecycle reports solid waste for each jurisdiction for the years 2007 through 2015. The waste per employee, expressed in pounds per day for Oakland were used. Year 2007 solid waste generation rates were used to represent BAU conditions, while year 2015 were used to represent year 2020 conditions. With the evolution of more efficient waste diversion programs, it is possible that year 2007 rates underestimate BAU conditions and year 2015 rates overestimate 2020 conditions. Waste stream and landfill characteristics assumed by CalEEMod were used.

¹ See PG&E Greenhouse Gas Emission Factors: Guidance for PG&E Customers November 2015.

Water and Wastewater

Default model assumptions for emissions associated with 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. Stationary equipment that is permitted by BAAQMD, such as the project generators, is not subject to the requirements of this SCA for reducing GHG emissions. While Scheme 1 proposes the inclusion of a 1000 KW generator, Scheme 2 would include a 750 KW generator. It is assumed for this assessment that the generator would be driven by a diesel-fueled engine. The emergency back-up generators would be used for backup power in emergency conditions. The generators will be operated for testing and maintenance purposes only, with a maximum of 50 hours each per year of non-emergency operation under normal conditions allowed by BAAQMD. The engine would be required to meet CARB and U.S. EPA emission standards. The generator emissions were modeled using CalEEMod.

Construction Period Emissions

CalEEMod provided annual emissions for construction 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. CalEEMod defaults were used for equipment usage. The construction schedule was based on information provided by the applicant.

Modeled Emissions- BAU and Project

Emissions for both project schemes are shown in Table 1. Also shown in Table 1 are those emissions, assuming BAU conditions. Total operational plus construction emissions, per capita emissions and emissions from stationary sources are shown in Table 1.

Construction Emissions

GHG emissions associated with construction were computed to be 2,467 MT of CO₂e for Scheme 1 and 1,172 MT of CO₂e for Scheme 2 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.

Table 1. 2 Kaiser Plaza GHG Reduction Plan Emissions Analysis (in Metric Tons)

	<u>Business As Usual</u> Year 2005	<u>Project</u> Year 2020	<u>Mitigated</u> <u>Project</u> Year 2020
	Scheme 1	Scheme 1	Scheme 1
Construction (amortized over 40 yrs)		62	62
Area	0	0	0
Energy Consumption	6624	3082	3082
Mobile	3837	3419	2804
Solid Waste Generation	1875	1284	1284
Water Usage	559	370	370
Total	12,895	8,217	7,602
Generator	26	26	26
Percent Reduction from BAU		36%	41%
Workers =	2655	3.1	
		Per capita	
	Scheme 2	Scheme 2	Scheme 2
Construction (amortized over 40 yrs)		29	29
Area	0	0	0
Energy Consumption	3370	1567	1567
Mobile	2325	2072	1699
Solid Waste Generation	945	647	647
Water Usage	280	186	186
Total	6,920	4,501	4,128
Generator	19	19	19
Percent Reduction from BAU		35%	40%
Workers =	1338	3.4	
		Per capita	

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 2020 as shown in Table 1, annual emissions resulting from operation of the proposed project are predicted to exceed the BAAQMD threshold of 1,100 MT of CO₂e/yr and, therefore, the service population threshold was used to determine the significance of this project. The per capita emissions reported in Table 1, show that emissions would be below the BAAQMD threshold of 4.6 metric tons per capita per year.

Project emissions were also compared to BAU emissions. As shown in Table 1, Scheme 1 project emissions would be 36 percent below the corresponding BAU emissions and Scheme 2

emissions would be 35 percent below those corresponding BAU emissions. GHG reduction measures would be necessary to ensure that project emissions are reduced.

Additional GHG Reduction Features

The project is committed to a Transportation Demand Management (TDM) program that includes 12 components to reduce project trips by 20 percent. The primary trips reduction components include transit fare subsidies and parking management. The effect of this TDM was only applied to weekday trips. So, a reduction of 18% was applied to mobile emissions for the project. Note that 93 percent of the project trips are weekday trips.

Conclusion

The project emissions with the proposed TDM program would be less than 4.6 metric tons per capita and would be 40 to 41 percent below BAU emissions. As a result, the project would meet the requirements of the City of Oakland SCA *GHG 1: Greenhouse Gas (GHG) Reduction Plan*. (#38).

Supporting Information

Project data, assumptions and modeling output used in this study are provided in the Attachments to this report. **Attachment 1** includes the CalEEMod output files for both project schemes. **Attachment 2** consists of the CalEEMod output files for year 2005 BAU conditions. Other supporting information such as the trip generation rates, TDM program components and CalRecycle data are included as **Attachment 3**.

Attachment 1 CalEEMod output files for both project schemes

2 Kaiser Plaza, Alternative B, Criteria and Operational Emissions - Alameda County, Annual

2 Kaiser Plaza, Alternative B, 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	877.52	1000sqft	1.02	877,522.00	0
Enclosed Parking Structure	342.00	Space	0.00	200,785.00	0
Strip Mall	7.37	1000sqft	0.00	7,369.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised CO2 Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Altered construction schedule based on project duration of 572 days

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment usage on higher site acreage

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip lengths for health risk assessment

Vehicle Trips (Building Construction) = 44000/4000/400 = 10 x 100

Demolition - 1.02 acre pavement removed

Grading - acres disturbed based on increased acreage

Vehicle Trips - From project trip generation rates

Energy Use - Default values used

Mobile Land Use Mitigation -

Mobile Commute Mitigation - transit subsidies

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - 1,000 kw generator

Solid Waste - CalRecycle rate based on 7.4 ppd employees and 260 workdays

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	200.00	466.00
tblConstructionPhase	NumDays	4.00	44.00
tblConstructionPhase	NumDays	2.00	10.00
tblFleetMix	FleetMixLandUseSubType	General Office Building	Enclosed Parking Structure

tblFleetMix	FleetMixLandUseSubType	Enclosed Parking Structure	General Office Building
tblGrading	AcresOfGrading	16.50	7.50
tblGrading	AcresOfGrading	5.00	12.50
tblLandUse	BuildingSpaceSquareFeet	877,520.00	877,522.00
tblLandUse	BuildingSpaceSquareFeet	136,800.00	200,785.00
tblLandUse	BuildingSpaceSquareFeet	7,370.00	7,369.00
tblLandUse	LandUseSquareFeet	877,520.00	877,522.00
tblLandUse	LandUseSquareFeet	136,800.00	200,785.00
tblLandUse	LandUseSquareFeet	7,370.00	7,369.00
tblLandUse	LotAcreage	20.15	1.02
tblLandUse	LotAcreage	3.08	0.00
tblLandUse	LotAcreage	0.17	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	7.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2018	2020
tblSolidWaste	SolidWasteGenerationRate	816.09	2,553.00
tblSolidWaste	SolidWasteGenerationRate	7.74	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	178.00	190.00
tblVehicleTrips	ST_TR	2.46	0.99
tblVehicleTrips	ST_TR	42.04	23.38
tblVehicleTrips	SU_TR	1.05	0.42
tblVehicleTrips	SU_TR	20.43	11.36
tblVehicleTrips	WD_TR	11.03	4.44
tblVehicleTrips	WD_TR	44.32	24.65

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					
2017	0.5010	4.7681	3.1351	8.7300e-003	0.4454	0.1880	0.6334	0.1538	0.1763	0.3300	0.0000	808.0405	808.0405	0.0921	0.0000	810.3428
2018	0.6736	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1478	0.2094	0.3572	0.0000	1,333.1196	1,333.1196	0.1298	0.0000	1,336.3646
2019	4.8047	1.4470	1.0734	3.4700e-003	0.1352	0.0467	0.1819	0.0369	0.0441	0.0809	0.0000	319.0284	319.0284	0.0299	0.0000	319.7746
Maximum	4.8047	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1538	0.2094	0.3572	0.0000	1,333.1196	1,333.1196	0.1298	0.0000	1,336.3646

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.5010	4.7681	3.1351	8.7300e-003	0.4454	0.1880	0.6334	0.1538	0.1763	0.3300	0.0000	808.0402	808.0402	0.0921	0.0000	810.3425
2018	0.6736	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1478	0.2094	0.3572	0.0000	1,333.1192	1,333.1192	0.1298	0.0000	1,336.3642
2019	4.8047	1.4470	1.0734	3.4700e-003	0.1352	0.0467	0.1819	0.0369	0.0441	0.0809	0.0000	319.0283	319.0283	0.0299	0.0000	319.7745
Maximum	4.8047	6.5523	4.6301	0.0144	0.5415	0.2224	0.7639	0.1538	0.2094	0.3572	0.0000	1,333.1192	1,333.1192	0.1298	0.0000	1,336.3642

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2017	5-31-2017	0.7858	0.7858
2	6-1-2017	8-31-2017	1.8180	1.8180
3	9-1-2017	11-30-2017	1.9888	1.9888
4	12-1-2017	2-28-2018	1.8534	1.8534
5	3-1-2018	5-31-2018	1.8134	1.8134
6	6-1-2018	8-31-2018	1.8056	1.8056
7	9-1-2018	11-30-2018	1.8014	1.8014
8	12-1-2018	2-28-2019	1.6970	1.6970
9	3-1-2019	5-31-2019	5.1711	5.1711
		Highest	5.1711	5.1711

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	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Energy	0.0779	0.7085	0.5951	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	3,058.0148	3,058.0148	0.2435	0.0615	3,082.4139
Mobile	0.9924	6.4030	10.9523	0.0371	2.7414	0.0450	2.7863	0.7370	0.0424	0.7794	0.0000	3,415.3112	3,415.3112	0.1558	0.0000	3,419.2057
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	518.4389	0.0000	518.4389	30.6389	0.0000	1,284.4105
Water						0.0000	0.0000		0.0000	0.0000	49.6537	155.5641	205.2178	5.1155	0.1236	369.9486
Total	5.0610	7.3576	11.6991	0.0416	2.7414	0.1069	2.8483	0.7370	0.1044	0.8414	568.0926	6,654.4445	7,222.5371	36.1572	0.1851	8,181.6240

Mitigated Operational

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

Area	3.6772	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Energy	0.0624	0.5673	0.4765	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	2,628.4889	2,628.4889	0.2129	0.0529	2,649.5844
Mobile	0.9924	6.4030	10.9523	0.0371	2.7414	0.0450	2.7863	0.7370	0.0424	0.7794	0.0000	3,415.3112	3,415.3112	0.1558	0.0000	3,419.2057
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	414.7511	0.0000	414.7511	24.5111	0.0000	1,027.5284
Water						0.0000	0.0000		0.0000	0.0000	39.7229	111.2021	150.9250	4.0911	0.0986	282.5949
Total	4.7870	7.2164	11.5805	0.0408	2.7414	0.0962	2.8376	0.7370	0.0937	0.8306	454.4741	6,180.5565	6,635.0306	28.9745	0.1516	7,404.5587

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	5.41	1.92	1.01	2.04	0.00	10.03	0.38	0.00	10.28	1.28	20.00	7.12	8.13	19.87	18.11	9.50

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	4/11/2017	5	10	
3	Grading	Grading	4/12/2017	6/12/2017	5	44	
4	Building Construction	Building Construction	6/13/2017	3/26/2019	5	466	
5	Architectural Coating	Architectural Coating	3/27/2019	5/7/2019	5	30	

Acres of Grading (Site Preparation Phase): 12.5

Acres of Grading (Grading Phase): 7.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,327,337; Non-Residential Outdoor: 442,446; Striped Parking

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class

Demolition	5	13.00	0.00	65.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	367.00	190.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	73.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	0.0276	0.2676	0.1556	2.4000e-004	7.0100e-003	0.0165	0.0235	1.0600e-003	0.0154	0.0165	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

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	3.6000e-004	0.0115	1.9000e-003	3.0000e-005	5.5000e-004	6.0000e-005	6.1000e-004	1.5000e-004	6.0000e-005	2.1000e-004	0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.9000e-004	4.8800e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9982	0.9982	3.0000e-005	0.0000	0.9990
Total	9.7000e-004	0.0120	6.7800e-003	4.0000e-005	1.5800e-003	7.0000e-005	1.6500e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	3.5581	3.5581	1.7000e-004	0.0000	3.5625

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.0100e-003	0.0000	7.0100e-003	1.0600e-003	0.0000	1.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0276	0.2676	0.1556	2.4000e-004		0.0165	0.0165		0.0154	0.0154	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total	0.0276	0.2676	0.1556	2.4000e-004	7.0100e-003	0.0165	0.0235	1.0600e-003	0.0154	0.0165	0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

Mitigated Construction Off-Site

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

Category	tons/yr										M1/yr					
Hauling	3.6000e-004	0.0115	1.9000e-003	3.0000e-005	5.5000e-004	6.0000e-005	6.1000e-004	1.5000e-004	6.0000e-005	2.1000e-004	0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.1000e-004	4.9000e-004	4.8800e-003	1.0000e-005	1.0300e-003	1.0000e-005	1.0400e-003	2.7000e-004	1.0000e-005	2.8000e-004	0.0000	0.9982	0.9982	3.0000e-005	0.0000	0.9990
Total	9.7000e-004	0.0120	6.7800e-003	4.0000e-005	1.5800e-003	7.0000e-005	1.6500e-003	4.2000e-004	7.0000e-005	4.9000e-004	0.0000	3.5581	3.5581	1.7000e-004	0.0000	3.5625

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					0.0330	0.0000	0.0330	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6500e-003	0.1111	0.0420	9.0000e-005		5.2300e-003	5.2300e-003		4.8100e-003	4.8100e-003	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638
Total	9.6500e-003	0.1111	0.0420	9.0000e-005	0.0330	5.2300e-003	0.0382	0.0152	4.8100e-003	0.0200	0.0000	8.0025	8.0025	2.4500e-003	0.0000	8.0638

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										M1/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.5000e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3071	0.3071	1.0000e-005	0.0000	0.3074
Total	1.9000e-004	1.5000e-004	1.5000e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3071	0.3071	1.0000e-005	0.0000	0.3074

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					0.0330	0.0000	0.0330	0.0152	0.0000	0.0152	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.6500e-003	0.1111	0.0420	9.0000e-005		5.2300e-003	5.2300e-003		4.8100e-003	4.8100e-003	0.0000	8.0024	8.0024	2.4500e-003	0.0000	8.0637
Total	9.6500e-003	0.1111	0.0420	9.0000e-005	0.0330	5.2300e-003	0.0382	0.0152	4.8100e-003	0.0200	0.0000	8.0024	8.0024	2.4500e-003	0.0000	8.0637

Mitigated Construction Off-Site

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

Category	tons/yr										M1/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.5000e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3071	0.3071	1.0000e-005	0.0000	0.3074
Total	1.9000e-004	1.5000e-004	1.5000e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	0.3071	0.3071	1.0000e-005	0.0000	0.3074

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					0.1033	0.0000	0.1033	0.0551	0.0000	0.0551	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.4024	0.1548	3.1000e-004		0.0192	0.0192		0.0177	0.0177	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582
Total	0.0353	0.4024	0.1548	3.1000e-004	0.1033	0.0192	0.1226	0.0551	0.0177	0.0727	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582

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										M1/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	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526
Total	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust					0.1033	0.0000	0.1033	0.0551	0.0000	0.0551	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0353	0.4024	0.1548	3.1000e-004		0.0192	0.0192		0.0177	0.0177	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582
Total	0.0353	0.4024	0.1548	3.1000e-004	0.1033	0.0192	0.1226	0.0551	0.0177	0.0727	0.0000	28.8373	28.8373	8.8400e-003	0.0000	29.0582

Mitigated Construction Off-Site

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

Category	tons/yr										M1/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	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526
Total	8.3000e-004	6.7000e-004	6.6000e-003	1.0000e-005	1.3900e-003	1.0000e-005	1.4000e-003	3.7000e-004	1.0000e-005	3.8000e-004	0.0000	1.3514	1.3514	5.0000e-005	0.0000	1.3526

3.5 Building Construction - 2017
Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214
Total	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1548	173.1548	0.0427	0.0000	174.2214

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										M1/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	0.0776	1.9625	0.4676	3.8500e-003	0.0898	0.0167	0.1065	0.0260	0.0160	0.0419	0.0000	367.9732	367.9732	0.0253	0.0000	368.6050
Worker	0.1247	0.0999	0.9912	2.2500e-003	0.2089	1.5800e-003	0.2105	0.0556	1.4600e-003	0.0570	0.0000	202.8892	202.8892	7.0800e-003	0.0000	203.0663
Total	0.2022	2.0624	1.4587	6.1000e-003	0.2988	0.0183	0.3170	0.0816	0.0174	0.0990	0.0000	570.8625	570.8625	0.0324	0.0000	571.6713

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1546	173.1546	0.0427	0.0000	174.2211
Total	0.2243	1.9119	1.3091	1.9400e-003		0.1287	0.1287		0.1209	0.1209	0.0000	173.1546	173.1546	0.0427	0.0000	174.2211

Mitigated Construction Off-Site

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

Category	tons/yr										M1/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	0.0776	1.9625	0.4676	3.8500e-003	0.0898	0.0167	0.1065	0.0260	0.0160	0.0419	0.0000	367.9732	367.9732	0.0253	0.0000	368.6050
Worker	0.1247	0.0999	0.9912	2.2500e-003	0.2089	1.5800e-003	0.2105	0.0556	1.4600e-003	0.0570	0.0000	202.8892	202.8892	7.0800e-003	0.0000	203.0663
Total	0.2022	2.0624	1.4587	6.1000e-003	0.2988	0.0183	0.3170	0.0816	0.0174	0.0990	0.0000	570.8625	570.8625	0.0324	0.0000	571.6713

3.5 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										M1/yr					
Off-Road	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867
Total	0.3497	3.0524	2.2943	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2862	310.2862	0.0760	0.0000	312.1867

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										M1/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	0.1232	3.3423	0.7633	6.9600e-003	0.1628	0.0239	0.1867	0.0471	0.0228	0.0699	0.0000	665.0026	665.0026	0.0426	0.0000	666.0666
Worker	0.2007	0.1576	1.5725	3.9600e-003	0.3787	2.7600e-003	0.3814	0.1007	2.5500e-003	0.1033	0.0000	357.8307	357.8307	0.0112	0.0000	358.1113
Total	0.3239	3.4999	2.3359	0.0109	0.5415	0.0266	0.5681	0.1478	0.0254	0.1732	0.0000	1,022.8333	1,022.8333	0.0538	0.0000	1,024.1778

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	0.3497	3.0524	2.2942	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2859	310.2859	0.0760	0.0000	312.1864
Total	0.3497	3.0524	2.2942	3.5100e-003		0.1957	0.1957		0.1840	0.1840	0.0000	310.2859	310.2859	0.0760	0.0000	312.1864

Mitigated Construction Off-Site

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

Category	tons/yr										M1/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	0.1232	3.3423	0.7633	6.9600e-003	0.1628	0.0239	0.1867	0.0471	0.0228	0.0699	0.0000	665.0026	665.0026	0.0426	0.0000	666.0666
Worker	0.2007	0.1576	1.5725	3.9600e-003	0.3787	2.7600e-003	0.3814	0.1007	2.5500e-003	0.1033	0.0000	357.8307	357.8307	0.0112	0.0000	358.1113
Total	0.3239	3.4999	2.3359	0.0109	0.5415	0.0266	0.5681	0.1478	0.0254	0.1732	0.0000	1,022.8333	1,022.8333	0.0538	0.0000	1,024.1778

3.5 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										M1/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435
Total	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7068	71.7068	0.0175	0.0000	72.1435

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										M1/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	0.0261	0.7411	0.1639	1.6100e-003	0.0381	4.7400e-003	0.0428	0.0110	4.5300e-003	0.0155	0.0000	154.3643	154.3643	9.5100e-003	0.0000	154.6021
Worker	0.0424	0.0323	0.3265	9.0000e-004	0.0885	6.3000e-004	0.0891	0.0235	5.8000e-004	0.0241	0.0000	81.1856	81.1856	2.3200e-003	0.0000	81.2434
Total	0.0685	0.7734	0.4904	2.5100e-003	0.1266	5.3700e-003	0.1319	0.0346	5.1100e-003	0.0397	0.0000	235.5498	235.5498	0.0118	0.0000	235.8455

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434
Total	0.0720	0.6429	0.5235	8.2000e-004		0.0393	0.0393		0.0370	0.0370	0.0000	71.7067	71.7067	0.0175	0.0000	72.1434

Mitigated Construction Off-Site

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

Category	tons/yr										M1/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	0.0261	0.7411	0.1639	1.6100e-003	0.0381	4.7400e-003	0.0428	0.0110	4.5300e-003	0.0155	0.0000	154.3643	154.3643	9.5100e-003	0.0000	154.6021
Worker	0.0424	0.0323	0.3265	9.0000e-004	0.0885	6.3000e-004	0.0891	0.0235	5.8000e-004	0.0241	0.0000	81.1856	81.1856	2.3200e-003	0.0000	81.2434
Total	0.0685	0.7734	0.4904	2.5100e-003	0.1266	5.3700e-003	0.1319	0.0346	5.1100e-003	0.0397	0.0000	235.5498	235.5498	0.0118	0.0000	235.8455

3.6 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										M1/yr					
Archit. Coating	4.6560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380
Total	4.6600	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380

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										M1/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	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476
Total	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Archit. Coating	4.6560					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0000e-003	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380
Total	4.6600	0.0275	0.0276	4.0000e-005		1.9300e-003	1.9300e-003		1.9300e-003	1.9300e-003	0.0000	3.8299	3.8299	3.2000e-004	0.0000	3.8380

Mitigated Construction Off-Site

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

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476
Total	4.1400e-003	3.1600e-003	0.0319	9.0000e-005	8.6600e-003	6.0000e-005	8.7200e-003	2.3000e-003	6.0000e-005	2.3600e-003	0.0000	7.9420	7.9420	2.3000e-004	0.0000	7.9476

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

- Limit Parking Supply
- Transit Subsidy
- Workplace Parking Charge

	ROG	NOx	CO	SO2	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	0.9924	6.4030	10.9523	0.0371	2.7414	0.0450	2.7863	0.7370	0.0424	0.7794	0.0000	3,415.3112	3,415.3112	0.1558	0.0000	3,419.2057
Unmitigated	0.9924	6.4030	10.9523	0.0371	2.7414	0.0450	2.7863	0.7370	0.0424	0.7794	0.0000	3,415.3112	3,415.3112	0.1558	0.0000	3,419.2057

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
General Office Building	3,896.19	868.74	368.56	7,073,070	7,073,070
Strip Mall	181.67	172.31	83.72	256,170	256,170
Total	4,077.86	1,041.06	452.28	7,329,240	7,329,240

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
General Office Building	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
Strip Mall	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	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	2,010.9228	2,010.9228	0.2011	0.0416	2,028.3485
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,286.7597	2,286.7597	0.2287	0.0473	2,306.5756
NaturalGas Mitigated	0.0624	0.5673	0.4765	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	617.5660	617.5660	0.0118	0.0113	621.2359
NaturalGas Unmitigated	0.0779	0.7085	0.5951	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	771.2551	771.2551	0.0148	0.0141	775.8383

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.44352e+007	0.0778	0.7076	0.5944	4.2500e-003		0.0538	0.0538		0.0538	0.0538	0.0000	770.3192	770.3192	0.0148	0.0141	774.8968
Strip Mall	17538.2	9.0000e-005	8.6000e-004	7.2000e-004	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.9359	0.9359	2.0000e-005	2.0000e-005	0.9415
Total		0.0779	0.7085	0.5951	4.2600e-003		0.0539	0.0539		0.0539	0.0539	0.0000	771.2551	771.2551	0.0148	0.0141	775.8383

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.15587e+007	0.0623	0.5666	0.4760	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	616.8173	616.8173	0.0118	0.0113	620.4827
Strip Mall	14030.6	8.0000e-005	6.9000e-004	5.8000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7487	0.7487	1.0000e-005	1.0000e-005	0.7532
Total		0.0624	0.5673	0.4765	3.4000e-003		0.0431	0.0431		0.0431	0.0431	0.0000	617.5660	617.5660	0.0118	0.0113	621.2359

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.31514e+006	172.9961	0.0173	3.5800e-003	174.4952
General Office Building	1.59885e+007	2,103.1494	0.2103	0.0435	2,121.3743

Strip Mall	80690.5	10.6142	1.0600e-003	2.2000e-004	10.7062
Total		2,286.7597	0.2287	0.0473	2,306.5756

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.05211e+006	138.3969	0.0138	2.8600e-003	139.5962
General Office Building	1.41667e+007	1,863.5150	0.1864	0.0386	1,879.6634
Strip Mall	68502.2	9.0109	9.0000e-004	1.9000e-004	9.0890
Total		2,010.9228	0.2011	0.0416	2,028.3485

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	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	3.6772	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Unmitigated	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234

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	0.4656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.4689					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0700e-003	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Total	3.9356	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4656					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2105					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0700e-003	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234
Total	3.6772	1.0000e-004	0.0114	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0219	0.0219	6.0000e-005	0.0000	0.0234

7.0 Water Detail

7.1 Mitigation Measures Water

- Apply Water Conservation Strategy
- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Turf Reduction
- Use Water Efficient Irrigation System
- Use Water Efficient Landscaping

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	150.9250	4.0911	0.0986	282.5949
Unmitigated	205.2178	5.1155	0.1236	369.9486

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	155.965 / 95.5914	204.5020	5.0976	0.1232	368.6582
Strip Mall	0.545914 / 0.334593	0.7158	0.0178	4.3000e-004	1.2904
Total		205.2178	5.1155	0.1236	369.9486

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e

Land Use	Mgal	M1/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	124.772 / 47.7957	150.3986	4.0768	0.0983	281.6092
Strip Mall	0.436732 / 0.167296	0.5264	0.0143	3.4000e-004	0.9857
Total		150.9250	4.0911	0.0986	282.5949

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	M1/yr			
Mitigated	414.7511	24.5111	0.0000	1,027.5284
Unmitigated	518.4389	30.6389	0.0000	1,284.4105

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2553	518.2359	30.6269	0.0000	1,283.9076
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		518.4389	30.6389	0.0000	1,284.4105

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	2042.4	414.5887	24.5015	0.0000	1,027.1261
Strip Mall	0.8	0.1624	9.6000e-003	0.0000	0.4023
Total		414.7511	24.5111	0.0000	1,027.5284

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1341	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750,000 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

11.0 Vegetation

Kaiser Plaza, Alternative A, Criteria and Operational - Alameda County, Annual

Kaiser Plaza, Alternative A, Criteria and Operational Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	438.39	1000sqft	1.02	438,389.00	0
Enclosed Parking with Elevator	181.00	Space	0.00	121,480.00	0
Strip Mall	7.40	1000sqft	0.00	7,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MW hr)	290	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Project Duration: 15 to 18 months

Off-road Equipment -

Off-road Equipment - Using default equipment usage for higher acreage

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip length for health risk assessment

Vehicle Trip (Building Construction) = $82 \times (20000/40 \times 0.220 = 452)$

Demolition - 655 tons of asphalt pavement

Grading - Using higher default acreage

Vehicle Trips - Using Project Trip Generation Rates = (5.25,1.17,0.50 and 24.65,23.38,11.37)

Energy Use - Default Values Used

Construction Off-road Equipment Mitigation - Best Management Practices

Mobile Commute Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Solid Waste - Based on CalRecycle calculator using number of employees

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblLandUse	BuildingSpaceSquareFeet	438,390.00	438,389.00
tblLandUse	BuildingSpaceSquareFeet	72,400.00	121,480.00
tblLandUse	BuildingSpaceSquareFeet	7,400.00	7,396.00
tblLandUse	LandUseSquareFeet	438,390.00	438,389.00
tblLandUse	LandUseSquareFeet	72,400.00	121,480.00
tblLandUse	LandUseSquareFeet	7,400.00	7,396.00
tblLandUse	LotAcreage	10.06	1.02

tblLandUse	LotAcreage	1.63	0.00
tblLandUse	LotAcreage	0.17	0.00
tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	OperationalYear	2018	2020
tblSolidWaste	SolidWasteGenerationRate	407.70	1,286.00
tblSolidWaste	SolidWasteGenerationRate	7.77	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,006.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	2.46	1.17
tblVehicleTrips	ST_TR	42.04	23.38
tblVehicleTrips	SU_TR	1.05	0.50
tblVehicleTrips	SU_TR	20.43	11.37
tblVehicleTrips	WD_TR	11.03	5.25
tblVehicleTrips	WD_TR	44.32	24.65

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					
2017											0.0000	591.0809	591.0809	0.0660	0.0000	592.7295
2018											0.0000	25.8778	25.8778	2.4700e-003	0.0000	25.9396
Maximum											0.0000	591.0809	591.0809	0.0660	0.0000	592.7295

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	591.0807	591.0807	0.0660	0.0000	592.7293
2018											0.0000	25.8778	25.8778	2.4700e-003	0.0000	25.9395
Maximum											0.0000	591.0807	591.0807	0.0660	0.0000	592.7293

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

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											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Energy											0.0000	1,554.8117	1,554.8117	0.1243	0.0313	1,567.2345
Mobile											0.0000	2,069.5284	2,069.5284	0.0948	0.0000	2,071.8980
Stationary											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Waste											261.2494	0.0000	261.2494	15.4394	0.0000	647.2343
Water											24.8933	77.9902	102.8835	2.5646	0.0620	185.4693
Total											286.1426	3,721.4956	4,007.6383	18.2258	0.0932	4,491.0693

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Energy											0.0000	1,391.0345	1,391.0345	0.1141	0.0281	1,402.2474
Mobile											0.0000	2,069.5284	2,069.5284	0.0948	0.0000	2,071.8980
Stationary											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Waste											208.9995	0.0000	208.9995	12.3515	0.0000	517.7874
Water											19.9146	55.7498	75.6645	2.0510	0.0495	141.6756
Total											228.9141	3,535.4780	3,764.3921	14.6142	0.0775	4,152.8416

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.00	5.00	6.07	19.82	16.88	7.53

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	3/1/2017	3/28/2017	5	20	
2	Site Preparation	Site Preparation	3/29/2017	3/30/2017	5	2	
3	Grading	Grading	3/31/2017	4/5/2017	5	4	
4	Building Construction	Building Construction	4/6/2017	1/10/2018	5	200	
5	Architectural Coating	Architectural Coating	1/11/2018	1/24/2018	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 668,678; Non-Residential Outdoor: 222,893; Striped Parking Area:

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	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	65.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	194.00	93.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	39.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

- Replace Ground Cover
- Water Exposed Area
- Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total											0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

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										M1/yr					
Hauling											0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.9982	0.9982	3.0000e-005	0.0000	0.9990
Total											0.0000	3.5581	3.5581	1.7000e-004	0.0000	3.5625

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057
Total											0.0000	21.9668	21.9668	5.5600e-003	0.0000	22.1057

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											0.0000	2.5599	2.5599	1.4000e-004	0.0000	2.5635
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.9982	0.9982	3.0000e-005	0.0000	0.9990
Total											0.0000	3.5581	3.5581	1.7000e-004	0.0000	3.5625

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total											0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128

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										M1/yr					
Hauling											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
Worker											0.0000	0.0614	0.0614	0.0000	0.0000	0.0615
Total											0.0000	0.0614	0.0614	0.0000	0.0000	0.0615

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128
Total											0.0000	1.6005	1.6005	4.9000e-004	0.0000	1.6128

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											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
Worker											0.0000	0.0614	0.0614	0.0000	0.0000	0.0615
Total											0.0000	0.0614	0.0614	0.0000	0.0000	0.0615

3.4 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total											0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417

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										M1/yr					
Hauling											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
Worker											0.0000	0.1229	0.1229	0.0000	0.0000	0.1230
Total											0.0000	0.1229	0.1229	0.0000	0.0000	0.1230

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417
Total											0.0000	2.6216	2.6216	8.0000e-004	0.0000	2.6417

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											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
Worker											0.0000	0.1229	0.1229	0.0000	0.0000	0.1230
Total											0.0000	0.1229	0.1229	0.0000	0.0000	0.1230

3.5 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road											0.0000	177.9996	177.9996	0.0374	0.0000	178.9353
Total											0.0000	177.9996	177.9996	0.0374	0.0000	178.9353

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										M1/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	240.1510	240.1510	0.0165	0.0000	240.5633
Worker											0.0000	142.9991	142.9991	4.9900e-003	0.0000	143.1239
Total											0.0000	383.1501	383.1501	0.0215	0.0000	383.6872

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road											0.0000	177.9994	177.9994	0.0374	0.0000	178.9351
Total											0.0000	177.9994	177.9994	0.0374	0.0000	178.9351

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	240.1510	240.1510	0.0165	0.0000	240.5633
Worker											0.0000	142.9991	142.9991	4.9900e-003	0.0000	143.1239
Total											0.0000	383.1501	383.1501	0.0215	0.0000	383.6872

3.5 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										M1/yr					
Off-Road											0.0000	7.3694	7.3694	1.4800e-003	0.0000	7.4065
Total											0.0000	7.3694	7.3694	1.4800e-003	0.0000	7.4065

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										M1/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	9.9771	9.9771	6.4000e-004	0.0000	9.9930
Worker											0.0000	5.7978	5.7978	1.8000e-004	0.0000	5.8023
Total											0.0000	15.7748	15.7748	8.2000e-004	0.0000	15.7954

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Off-Road											0.0000	7.3694	7.3694	1.4800e-003	0.0000	7.4065
Total											0.0000	7.3694	7.3694	1.4800e-003	0.0000	7.4065

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	9.9771	9.9771	6.4000e-004	0.0000	9.9930
Worker											0.0000	5.7978	5.7978	1.8000e-004	0.0000	5.8023
Total											0.0000	15.7748	15.7748	8.2000e-004	0.0000	15.7954

3.6 Architectural Coating - 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										M1/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total											0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797

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										M1/yr					
Hauling											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
Worker											0.0000	1.4569	1.4569	5.0000e-005	0.0000	1.4581
Total											0.0000	1.4569	1.4569	5.0000e-005	0.0000	1.4581

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Archit. Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797
Total											0.0000	1.2766	1.2766	1.2000e-004	0.0000	1.2797

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										M1/yr					
Hauling											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
Worker											0.0000	1.4569	1.4569	5.0000e-005	0.0000	1.4581
Total											0.0000	1.4569	1.4569	5.0000e-005	0.0000	1.4581

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Transit Subsidy

Workplace Parking Charge

	ROG	NOx	CO	SO2	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											0.0000	2,069.5284	2,069.5284	0.0948	0.0000	2,071.8980
Unmitigated											0.0000	2,069.5284	2,069.5284	0.0948	0.0000	2,071.8980

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	2,301.55	512.92	219.20	4,178,602	4,178,602
Strip Mall	182.41	173.01	84.14	257,230	257,230
Total	2,483.96	685.93	303.33	4,435,831	4,435,831

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LD11	LD12	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
Enclosed Parking with Elevator	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759
Strip Mall	0.558186	0.040947	0.190770	0.110456	0.017401	0.005228	0.022658	0.042795	0.002118	0.002805	0.005569	0.000308	0.000759

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	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	1,082.1359	1,082.1359	0.1082	0.0224	1,091.5131
Electricity Unmitigated											0.0000	1,169.0394	1,169.0394	0.1169	0.0242	1,179.1697
NaturalGas Mitigated											0.0000	308.8986	308.8986	5.9200e-003	5.6600e-003	310.7343
NaturalGas Unmitigated											0.0000	385.7724	385.7724	7.3900e-003	7.0700e-003	388.0648

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	7.2115e+06											0.0000	384.8331	384.8331	7.3800e-003	7.0600e-003	387.1199
Strip Mall	17602.5											0.0000	0.9393	0.9393	2.0000e-005	2.0000e-005	0.9449
Total												0.0000	385.7724	385.7724	7.4000e-003	7.0800e-003	388.0648

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	5.77446e+006											0.0000	308.1472	308.1472	5.9100e-003	5.6500e-003	309.9783
Strip Mall	14082											0.0000	0.7515	0.7515	1.0000e-005	1.0000e-005	0.7559
Total												0.0000	308.8986	308.8986	5.9200e-003	5.6600e-003	310.7343

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	818775	107.7032	0.0108	2.2300e-003	108.6365
General Office Building	7.98745e+006	1,050.6831	0.1051	0.0217	1,059.7878
Strip Mall	80986.2	10.6531	1.0700e-003	2.2000e-004	10.7454
Total		1,169.0394	0.1169	0.0242	1,179.1697

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	723535	95.1751	9.5200e-003	1.9700e-003	95.9998
General Office Building	7.42631e+006	976.8701	0.0977	0.0202	985.3351
Strip Mall	76711.3	10.0907	1.0100e-003	2.1000e-004	10.1782
Total		1,082.1359	0.1082	0.0224	1,091.5131

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											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Unmitigated											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Total											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120
Total											0.0000	0.0112	0.0112	3.0000e-005	0.0000	0.0120

7.0 Water Detail

7.1 Mitigation Measures Water

- Apply Water Conservation Strategy
- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Turf Reduction
- Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	75.6645	2.0510	0.0495	141.6756
Unmitigated	102.8835	2.5646	0.0620	185.4693

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	77.9167 / 47.7554	102.1648	2.5467	0.0616	184.1737
Strip Mall	0.548137 / 0.335955	0.7187	0.0179	4.3000e-004	1.2956
Total		102.8835	2.5646	0.0620	185.4693

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	62.3334 / 23.8777	75.1359	2.0367	0.0491	140.6859
Strip Mall	0.438509 / 0.167977	0.5286	0.0143	3.5000e-004	0.9897
Total		75.6645	2.0510	0.0495	141.6756

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	208.9995	12.3515	0.0000	517.7874
Unmitigated	261.2494	15.4394	0.0000	647.2343

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e

Land Use	tons	M1/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1286	261.0464	15.4274	0.0000	646.7314
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		261.2494	15.4394	0.0000	647.2343

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	M1/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1028.8	208.8371	12.3419	0.0000	517.3851
Strip Mall	0.8	0.1624	9.6000e-003	0.0000	0.4023
Total		208.9995	12.3515	0.0000	517.7874

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1006	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750,0000 HP)											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Total											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212

11.0 Vegetation

Attachment 2 CalEEMod output files for year 2005 BAU conditions

2 Kaiser Plaza, Scheme 1 GHG - Alameda County, Annual

2 Kaiser Plaza, Scheme 1 GHG

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	877.52	1000sqft	1.02	877,522.00	0
Enclosed Parking Structure	342.00	Space	0.00	200,785.00	0
Strip Mall	7.37	1000sqft	0.00	7,369.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Default intensity

Land Use - From Project Description and trip generation table

Construction Phase - Altered construction schedule based on project duration of 572 days

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Equipment usage on higher site acreage

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip lengths for health risk assessment

Vehicle Trips (Building Construction) = 44,000/400/400 = 10.5

Demolition - 1.02 acre pavement removed

Grading - acres disturbed based on increased acreage

Vehicle Trips - From project trip generation rates (4.44, .99, .42 and 24.65,23.38,11.36)

Energy Use - Default values used

Energy Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - 1,000 kw generator

Solid Waste - CalRecycle in Oakland = 12.4 ppd employee in 2007 and 260 workdays

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblFleetMix	FleetMixLandUseSubType	General Office Building	Enclosed Parking Structure
tblFleetMix	FleetMixLandUseSubType	Enclosed Parking Structure	General Office Building

tblLandUse	BuildingSpaceSquareFeet	877,520.00	877,522.00
tblLandUse	BuildingSpaceSquareFeet	136,800.00	200,785.00
tblLandUse	BuildingSpaceSquareFeet	7,370.00	7,369.00
tblLandUse	LandUseSquareFeet	877,520.00	877,522.00
tblLandUse	LandUseSquareFeet	136,800.00	200,785.00
tblLandUse	LandUseSquareFeet	7,370.00	7,369.00
tblLandUse	LotAcreage	20.15	1.02
tblLandUse	LotAcreage	3.08	0.00
tblLandUse	LotAcreage	0.17	0.00
tblProjectCharacteristics	OperationalYear	2018	2005
tblSolidWaste	SolidWasteGenerationRate	816.09	3,727.00
tblSolidWaste	SolidWasteGenerationRate	7.74	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,341.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	2.46	0.99
tblVehicleTrips	ST_TR	42.04	23.38
tblVehicleTrips	SU_TR	1.05	0.42
tblVehicleTrips	SU_TR	20.43	11.36
tblVehicleTrips	WD_TR	11.03	4.44
tblVehicleTrips	WD_TR	44.32	24.65

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											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245
Energy											0.0000	6,595.8185	6,595.8185	0.2739	0.0701	6,623.5571
Mobile											0.0000	3,823.8891	3,823.8891	0.5358	0.0000	3,837.2845
Stationary											0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste											756.7503	0.0000	756.7503	44.7227	0.0000	1,874.8169
Water											49.6537	344.0380	393.6917	5.1155	0.1236	558.4226
Total											806.4040	10,789.2999	11,595.7039	50.6515	0.1938	12,919.7275

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245

Energy											0.0000	6,595.8185	6,595.8185	0.2739	0.0701	6,623.5571
Mobile											0.0000	3,823.8891	3,823.8891	0.5358	0.0000	3,837.2845
Stationary											0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Waste											756.7503	0.0000	756.7503	44.7227	0.0000	1,874.8169
Water											49.6537	344.0380	393.6917	5.1155	0.1236	558.4226
Total											806.4040	10,789.2999	11,595.7039	50.6515	0.1938	12,919.7275

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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											0.0000	3,823.8891	3,823.8891	0.5358	0.0000	3,837.2845
Unmitigated											0.0000	3,823.8891	3,823.8891	0.5358	0.0000	3,837.2845

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT		Annual VMT	
Enclosed Parking Structure	0.00	0.00	0.00				
General Office Building	3,896.19	868.74	368.56	7,073,070		7,073,070	
Strip Mall	181.67	172.31	83.72	256,170		256,170	
Total	4,077.86	1,041.06	452.28	7,329,240		7,329,240	

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
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.540639	0.064683	0.171972	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298
General Office Building	0.540639	0.064683	0.171972	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298
Strip Mall	0.540639	0.064683	0.171972	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298

5.0 Energy Detail

Historical Energy Use: Y

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	5,659.9850	5,659.9850	0.2559	0.0530	5,682.1625
Electricity Unmitigated											0.0000	5,659.9850	5,659.9850	0.2559	0.0530	5,682.1625
NaturalGas Mitigated											0.0000	935.8335	935.8335	0.0179	0.0172	941.3946
NaturalGas Unmitigated											0.0000	935.8335	935.8335	0.0179	0.0172	941.3946

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.75153e+007											0.0000	934.6852	934.6852	0.0179	0.0171	940.2396
Strip Mall	21517.5											0.0000	1.1483	1.1483	2.0000e-005	2.0000e-005	1.1551
Total												0.0000	935.8335	935.8335	0.0179	0.0172	941.3946

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	1.75153e+007											0.0000	934.6852	934.6852	0.0179	0.0171	940.2396
Strip Mall	21517.5											0.0000	1.1483	1.1483	2.0000e-005	2.0000e-005	1.1551
Total												0.0000	935.8335	935.8335	0.0179	0.0172	941.3946

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.31514e+006	382.5898	0.0173	3.5800e-003	384.0889
General Office Building	1.80506e+007	5,251.1345	0.2374	0.0491	5,271.7100

Strip Mall	90270.3	26.2607	1.1900e-003	2.5000e-004	26.3636
Total		5,659.9850	0.2559	0.0530	5,682.1625

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.31514e+006	382.5898	0.0173	3.5800e-003	384.0889
General Office Building	1.80506e+007	5,251.1345	0.2374	0.0491	5,271.7100
Strip Mall	90270.3	26.2607	1.1900e-003	2.5000e-004	26.3636
Total		5,659.9850	0.2559	0.0530	5,682.1625

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											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245
Unmitigated											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245
Total											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245

Mitigated

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

SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245
Total											0.0000	0.0219	0.0219	1.0000e-004	0.0000	0.0245

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	393.6917	5.1155	0.1236	558.4226
Unmitigated	393.6917	5.1155	0.1236	558.4226

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	155.965 / 95.5914	392.3185	5.0976	0.1232	556.4748
Strip Mall	0.545914 / 0.334593	1.3732	0.0178	4.3000e-004	1.9478
Total		393.6917	5.1155	0.1236	558.4226

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	155.965 / 95.5914	392.3185	5.0976	0.1232	556.4748
Strip Mall	0.545914 / 0.334593	1.3732	0.0178	4.3000e-004	1.9478
Total		393.6917	5.1155	0.1236	558.4226

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	756.7503	44.7227	0.0000	1,874.8169
Unmitigated	756.7503	44.7227	0.0000	1,874.8169

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	3727	756.5473	44.7107	0.0000	1,874.3140
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		756.7503	44.7227	0.0000	1,874.8169

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
General Office Building	3727	756.5473	44.7107	0.0000	1,874.3140
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		756.7503	44.7227	0.0000	1,874.8169

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1341	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										M1/yr					
Emergency Generator - Diesel (750,0000 HP)											0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219
Total											0.0000	25.5325	25.5325	3.5800e-003	0.0000	25.6219

11.0 Vegetation

Kaiser Plaza, Scheme 2 GHG BAU - Alameda County, Annual

Kaiser Plaza, Scheme 2 GHG BAU Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	438.39	1000sqft	1.02	438,389.00	0
Enclosed Parking with Elevator	181.00	Space	0.00	121,480.00	0
Strip Mall	7.40	1000sqft	0.00	7,396.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	63
Climate Zone	4			Operational Year	2005
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Revised Emission Intensity

Land Use - From Project Description and trip generation table

Construction Phase - Project Duration: 15 to 18 months

Off-road Equipment -

Off-road Equipment - Using default equipment usage for higher acreage

Off-road Equipment -

Off-road Equipment -

Trips and VMT - Reduced trip length for health risk assessment

Vehicle Trips (Building Construction) = 83,100,000 / 40 * 0.000 = 100

Demolition - 655 tons of asphalt pavement

Grading - Using higher default acreage

Vehicle Trips - Using Project Trip Generation Rates (5.25, 1.17, 0.50 and 24.65, 23.38, 11.36)

Energy Use - Default Values Used

Construction Off-road Equipment Mitigation - Best Management Practices

Stationary Sources - Emergency Generators and Fire Pumps -

Solid Waste - Used CalRecycle data for Oakland 2007

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblLandUse	BuildingSpaceSquareFeet	438,390.00	438,389.00
tblLandUse	BuildingSpaceSquareFeet	72,400.00	121,480.00
tblLandUse	BuildingSpaceSquareFeet	7,400.00	7,396.00

tblLandUse	LandUseSquareFeet	438,390.00	438,389.00
tblLandUse	LandUseSquareFeet	72,400.00	121,480.00
tblLandUse	LandUseSquareFeet	7,400.00	7,396.00
tblLandUse	LotAcreage	10.06	1.02
tblLandUse	LotAcreage	1.63	0.00
tblLandUse	LotAcreage	0.17	0.00
tblProjectCharacteristics	OperationalYear	2018	2005
tblSolidWaste	SolidWasteGenerationRate	407.70	1,878.00
tblSolidWaste	SolidWasteGenerationRate	7.77	1.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	1,006.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblVehicleTrips	ST_TR	2.46	1.17
tblVehicleTrips	ST_TR	42.04	23.38
tblVehicleTrips	SU_TR	1.05	0.50
tblVehicleTrips	SU_TR	20.43	11.36
tblVehicleTrips	WD_TR	11.03	5.25
tblVehicleTrips	WD_TR	44.32	24.65

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											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125
Energy											0.0000	3,355.9880	3,355.9880	0.1396	0.0356	3,370.0853
Mobile											0.0000	2,316.3941	2,316.3941	0.3260	0.0000	2,324.5437
Stationary											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Waste											381.4200	0.0000	381.4200	22.5413	0.0000	944.9520
Water											24.8933	172.4794	197.3726	2.5646	0.0620	279.9555
Total											406.3133	5,864.0267	6,270.3400	25.5741	0.0976	6,938.7731

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										Mt/yr					
Area											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125
Energy											0.0000	3,355.9880	3,355.9880	0.1396	0.0356	3,370.0853
Mobile											0.0000	2,316.3941	2,316.3941	0.3260	0.0000	2,324.5437

Stationary											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Waste											381.4200	0.0000	381.4200	22.5413	0.0000	944.9520
Water											24.8933	172.4794	197.3726	2.5646	0.0620	279.9585
Total											406.3133	5,864.0267	6,270.3400	25.5741	0.0976	6,938.7731

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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											0.0000	2,316.3941	2,316.3941	0.3260	0.0000	2,324.5437
Unmitigated											0.0000	2,316.3941	2,316.3941	0.3260	0.0000	2,324.5437

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated		Mitigated	
	Weekday	Saturday	Sunday	Annual VMT		Annual VMT	
Enclosed Parking with Elevator	0.00	0.00	0.00				
General Office Building	2,301.55	512.92	219.20	4,178,602		4,178,602	
Strip Mall	182.41	173.01	84.06	257,213		257,213	
Total	2,483.96	685.93	303.26	4,435,815		4,435,815	

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-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking with Elevator	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.540639	0.064683	0.171792	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298
Enclosed Parking with Elevator	0.540639	0.064683	0.171792	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298
Strip Mall	0.540639	0.064683	0.171792	0.117999	0.030504	0.004760	0.020161	0.036194	0.001764	0.004728	0.005037	0.000261	0.001298

5.0 Energy Detail

Historical Energy Use: Y

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	2,887.8892	2,887.8892	0.1306	0.0270	2,899.2048
Electricity Unmitigated											0.0000	2,887.8892	2,887.8892	0.1306	0.0270	2,899.2048
NaturalGas Mitigated											0.0000	468.0988	468.0988	8.9700e-003	8.5800e-003	470.8805
NaturalGas Unmitigated											0.0000	468.0988	468.0988	8.9700e-003	8.5800e-003	470.8805

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	8.75024e+006											0.0000	466.9464	466.9464	8.9500e-003	8.5600e-003	469.7212
Strip Mall	21596.3											0.0000	1.1525	1.1525	2.0000e-005	2.0000e-005	1.1593
Total												0.0000	468.0988	468.0988	8.9700e-003	8.5800e-003	470.8805

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	8.75024e+006											0.0000	466.9464	466.9464	8.9500e-003	8.5600e-003	469.7212
Strip Mall	21596.3											0.0000	1.1525	1.1525	2.0000e-005	2.0000e-005	1.1593
Total												0.0000	468.0988	468.0988	8.9700e-003	8.5800e-003	470.8805

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	818775	238.1911	0.0108	2.2300e-003	239.1244
General Office Building	9.01766e+006	2,623.3412	0.1186	0.0245	2,633.6202
Strip Mall	90601	26.3569	1.1900e-003	2.5000e-004	26.4601
Total		2,887.8892	0.1306	0.0270	2,899.2048

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking with Elevator	818775	238.1911	0.0108	2.2300e-003	239.1244
General Office Building	9.01766e+006	2,623.3412	0.1186	0.0245	2,633.6202
Strip Mall	90601	26.3569	1.1900e-003	2.5000e-004	26.4601
Total		2,887.8892	0.1306	0.0270	2,899.2048

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											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125
Unmitigated											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125

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											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125
Total											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Landscaping											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125
Total											0.0000	0.0112	0.0112	5.0000e-005	0.0000	0.0125

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	M1/yr			
Mitigated	197.3726	2.5646	0.0620	279.9585
Unmitigated	197.3726	2.5646	0.0620	279.9585

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	M1/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	77.9167 / 47.7554	195.9938	2.5467	0.0616	278.0028
Strip Mall	0.548137 / 0.335955	1.3788	0.0179	4.3000e-004	1.9557
Total		197.3726	2.5646	0.0620	279.9585

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	M1/yr			
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	77.9167 / 47.7554	195.9938	2.5467	0.0616	278.0028
Strip Mall	0.548137 / 0.335955	1.3788	0.0179	4.3000e-004	1.9557
Total		197.3726	2.5646	0.0620	279.9585

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	381.4200	22.5413	0.0000	944.9520
Unmitigated	381.4200	22.5413	0.0000	944.9520

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1878	381.2170	22.5293	0.0000	944.4491
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		381.4200	22.5413	0.0000	944.9520

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	1878	381.2170	22.5293	0.0000	944.4491
Strip Mall	1	0.2030	0.0120	0.0000	0.5029
Total		381.4200	22.5413	0.0000	944.9520

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	1	50	1006	0.73	Diesel

Boilers

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

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (750,000 HP)											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212
Total											0.0000	19.1541	19.1541	2.6900e-003	0.0000	19.2212

11.0 Vegetation

Attachment 3 Data Sources

**TABLE 1: 2 KAISER PLAZA – SCHEME 1
PROJECT VEHICLE TRIP GENERATION SUMMARY**

Land Use	Units ¹	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	877.6 KSF	710 ²	6,840	957	131	1,088	180	881	1,061
Retail	7.4 KSF	820 ³	320	4	3	7	13	14	27
<i>Subtotal</i>			7,160	961	134	1,095	193	895	1,088
<i>Non-Auto Reduction (-43%)⁴</i>			-3,080	-413	-58	-471	-83	-385	-468
Adjusted Project Trips			4,080	548	76	624	110	510	620

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):
Daily: $\ln(T) = 0.76 * \ln(X) + 3.68$
AM Peak Hour: $\ln(T) = 0.80 * \ln(X) + 1.57$ (88% in, 12% out)
PM Peak Hour: $T = 1.12(X) + 78.45$ (17% in, 83% out)
3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):
Daily: $T = 42.7 * X$
AM Peak Hour: $T = 0.96 * X$ (62% in, 38% out)
PM Peak Hour: $T = 3.71 * X$ (48% in, 52% out)
4. 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.

Source: Fehr & Peers, 2016.

**TABLE 2: 2 KAISER PLAZA – SCHEME 2
PROJECT VEHICLE TRIP GENERATION SUMMARY**

Land Use	Units ¹	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	438.4 KSF	710 ²	4,040	549	75	624	97	472	569
Retail	7.4 KSF	820 ³	320	4	3	7	13	14	27
<i>Subtotal</i>			4,360	553	78	631	110	486	596
<i>Non-Auto Reduction (-43%)⁴</i>			-1,870	-238	-34	-272	-47	-209	-256
Adjusted Project Trips			2,490	315	44	359	63	277	340

1. DU = Dwelling Units, KSF = 1,000 square feet.
2. ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):
Daily: $\ln(T) = 0.76 * \ln(X) + 3.68$
AM Peak Hour: $\ln(T) = 0.80 * \ln(X) + 1.57$ (88% in, 12% out)
PM Peak Hour: $T = 1.12(X) + 78.45$ (17% in, 83% out)
3. ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):
Daily: $T = 42.7 * X$
AM Peak Hour: $T = 0.96 * X$ (62% in, 38% out)
PM Peak Hour: $T = 3.71 * X$ (48% in, 52% out)
4. 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.

Source: Fehr & Peers, 2016.



TABLE 2
MANDATORY TDM PROGRAM COMPONENTS

TDM Strategy	Responsible Party	Estimated Trip Reduction¹
Infrastructure Improvements	Building Management	NA ²
Alternative Work Schedule/Flexible Hours/ Telecommuting	Project Tenants	<1%
Pre-tax Commuter Benefit	Project Tenants	NA ¹
Transit Fare Subsidy	Project Tenants	10% ³
Parking Management	Building Management	5%
Carpool and Ride-Matching Assistance	Building Management	2%
Preferential Parking for Carpoolers	Building Management	
Designate On-Site Car-Share Spaces	Building Management	1%
Bicycle Facility Monitoring	Building Management	NA ²
Guaranteed Ride Home	Project Tenants	NA ²
TDM Coordinator	Building Management and Project Tenants	NA ²
TDM Marketing and Tenant/Employee Education	Building Management and Project Tenants	2%
	Total	20%

1. The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012)

2. The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that at the time of the CAPCOA report development, existing literature did not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.

3. Assuming a subsidy of \$3.00 per employee per day available to 50 percent of building employees.

Sources: Fehr & Peers, 2017.



Jurisdiction Diversion/Disposal Rate Summary (2007 - Current)

Advisory! The per capita disposal rate is a jurisdiction-specific index and cannot be compared between jurisdictions. The per capita disposal rate is used as one of several "factors" in determining a jurisdiction's compliance with the intent of AB 939, and allows the California Department of Resources Recycling and Recovery (CalRecycle) and jurisdictions to set their primary focus on successful implementation of diversion programs. Meeting the disposal rate targets is not necessarily an indication of compliance.

Please Note! This online database contains some disposal rates calculated with data as submitted by the jurisdiction. This data is subject to change during the formal Jurisdiction Review process or when a jurisdiction submits updated information. Specifically, the Annual Report Review Status 'Staff Reviewed' means the jurisdiction has submitted their Annual Report and Local Assistance and Market Development Staff have reviewed the data as submitted. However, these reports have not yet been formally presented to, or approved by CalRecycle. The Per Resident and Per Employee Disposal Rate Targets listed below are the most current targets as calculated by CalRecycle staff.

Jurisdiction:

Jurisdiction: Oakland

[Per Capita Disposal Rate Graph](#)

Per Resident Disposal Rate Target (PPD): 5.8

Per Employee Disposal Rate Target (PPD): 15.3

REPORT YEAR ↓	REVIEW YEARS	JURISDICTION REVIEW STATUS	COMPLIANCE ORDER STATUS	# OF PROGRAMS IMPLEMENTED	ANNUAL REPORT REVIEW STATUS	ANNUAL PER CAPITA DISPOSAL RATE (PPD) PER RESIDENT	ANNUAL PER CAPITA DISPOSAL RATE (PPD) PER EMPLOYEE
2007	07/11	Approved		49	Staff Reviewed	5.0	12.4
2008	07/11	Approved		49	Staff Reviewed	4.0	10.0
2009	07/11	Approved		49	Staff Reviewed	3.8	9.9
2010	07/11	Approved		49	Staff Reviewed	4.0	10.8
2011	07/11	Approved		49	Staff Reviewed	4.1	10.0
2012	12/15	Awaiting Review		49	Staff Reviewed	3.9	9.6
2013	12/15	Awaiting Review		49	Staff Reviewed	3.9	9.2
2014	12/15	Awaiting Review		49	Staff Reviewed	3.7	8.3
2015	12/15	Awaiting Review		49	Staff Reviewed	3.4	7.4